Contribution of General Aviation to the US Economy in 2018

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Prepared for:

- Aircraft Electronics Association,
- Aircraft Owners and Pilots Association,
- Experimental Aircraft Association,
- General Aviation Manufacturers Association,
- Helicopter Association International,
- National Air Transportation Association, and
- National Business Aviation Association

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Executive Summary

PwC was engaged by the general aviation industry trade associations to quantify the contribution of general aviation to the US national and state economies.[1]

General aviation is defined as the manufacture and operation of any type of aircraft that has been issued an airworthiness certificate by the FAA, other than aircraft used for scheduled commercial air service or operated by the military.[2] For this study, the general aviation industry is defined to include aircraft and component manufacturing, flight operations, maintenance, and other activities. The economic impact of the general aviation industry is measured in terms of employment, labor income, output, and value added for 2018, the most recent year for which a full, consistent set of national and state-level data are available.[3]

This report considers four types of economic impacts—direct, indirect, induced, and enabled—that in aggregate provide a measure of the total economic contribution of general aviation:

1. ***Direct impact*** is economic activity within the general aviation industry,
2. ***Indirect impact*** is economic activity occurring throughout the supply chain associated with general aviation,
3. ***Induced impact*** is economic activity resulting from household spending of labor and proprietor's income earned directly or indirectly from general aviation-related activities, and
4. ***Enabled impact*** is economic activity resulting from the visitors' destination expenditures associated with general aviation flights.

Nationwide 273,500 full- and part-time workers were *directly* employed in general aviation in 2018 (see **Table E-1**, below). 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.

The economic impact of general aviation reaches all 50 states and the District of Columbia. At 148,300 jobs, California has the largest number of jobs directly or indirectly attributable to the general aviation industry. The top 10 states ranked by the total number of jobs attributable to general aviation (from the direct, indirect, induced, and enabled impacts) in 2018 were California, Florida, Texas, Georgia, Ohio, New York, Illinois, Arizona, Kansas, and Pennsylvania (**Table E-2**, below). Combined, these 10 states accounted for 53 percent of the total jobs attributable to general aviation in the US in 2018.

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[1] The general aviation industry trade associations include: Aircraft Electronics Association (AEA), Aircraft Owners and Pilots Association (AOPA), Experimental Aircraft Association (EAA), General Aviation Manufacturers Association (GAMA), Helicopter Association International (HAI), National Air Transportation Association (NATA), and National Business Aviation Association (NBAA).

[2] This definition includes on-demand Federal Aviation Regulations (FAR) Part 135 operations.

[3] US gross domestic product ("GDP") is the sum of value added in all industries. Value added consists of: employee compensation, proprietors' income, income to capital owners from property, and taxes on production and imports. Throughout this report, we refer to value added as contribution to GDP. By comparison, output represents the total value of sales, including the cost of intermediate goods. Value added excludes the value of intermediate inputs.

Table E-1. – Total Economic Impact of General Aviation on the US Economy, 2018
[Dollar Amounts in Billions]

Item	Direct	Indirect and Induced	Enabled	Total	Percent of US Economy
Employment (Jobs)[1]	273,500	791,300	114,400	1,179,200	0.59%
Labor Income[2]	$25.5	$46.3	$4.9	$76.7	0.61%
Output	$90.1	$142.1	$14.6	$246.8	0.73%
Contribution to GDP	$41.6	$78.2	$8.5	$128.3	0.62%

Source: PwC calculations using the IMPLAN modeling system.
Details may not sum to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Table E-2. – Total Impact of General Aviation, Top 10 States, 2018
[Ranked by Total Employment Impact, Dollar Amounts in Billions]

State	Total Jobs[1]	Total Labor Income[2]	Total Output	Total Contribution to GDP
California	148,300	$11.3	$32.8	$18.5
Florida	94,900	$6.4	$20.8	$10.8
Texas	90,100	$5.5	$14.3	$9.0
Georgia	56,700	$3.8	$17.1	$6.1
Ohio	43,700	$3.0	$9.1	$5.0
New York	43,200	$3.4	$9.5	$5.4
Illinois	41,800	$2.2	$8.3	$4.3
Arizona	40,200	$1.9	$5.7	$3.1
Kansas	37,800	$2.6	$8.9	$3.7
Pennsylvania	32,900	$2.9	$8.6	$3.8

Source: PwC calculations using the IMPLAN modeling system.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The total (direct, indirect, induced, and enabled) contribution of general aviation to output is largest in California at $32.8 billion. The top 10 states ranked by total output attributable to general aviation in 2018 were California, Florida, Georgia, Texas, New York, Ohio, Kansas, Pennsylvania, Illinois, and Washington (**Table E-3**, below). These 10 states accounted for 55 percent of the total output attributable to general aviation in the US in 2018.

Table E-3. – Total Impact of General Aviation, Top 10 States, 2018
[Ranked by Total Output Impact, Dollar Amounts in Billions]

State	Total Jobs(1)	Total Labor Income(2)	Total Output	Total Contribution to GDP
California	148,300	$11.3	$32.8	$18.5
Florida	94,900	$6.4	$20.8	$10.8
Georgia	56,700	$3.8	$17.1	$6.1
Texas	90,100	$5.5	$14.3	$9.0
New York	43,200	$3.4	$9.5	$5.4
Ohio	43,700	$3.0	$9.1	$5.0
Kansas	37,800	$2.6	$8.9	$3.7
Pennsylvania	32,900	$2.9	$8.6	$3.8
Illinois	41,800	$2.2	$8.3	$4.3
Washington	29,800	$2.0	$7.2	$3.5

Source: PwC calculations using the IMPLAN modeling system.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The total (direct, indirect, induced, and enabled) contribution of general aviation to GDP is largest in California at $18.5 billion. The top 10 states ranked by total GDP attributable to general aviation in 2018 were California, Florida, Texas, Georgia, New York, Ohio, North Carolina, Illinois, Pennsylvania, and Kansas (**Table E-4**, below). These 10 states accounted for 56 percent of the total GDP attributable to general aviation in the US in 2018.

Table E-4. – Total Impact of General Aviation, Top 10 States, 2018
[Ranked by Total GDP Impact, Dollar Amounts in Billions]

State	Total Jobs(1)	Total Labor Income(2)	Total Output	Total Contribution to GDP
California	148,300	$11.3	$32.8	$18.5
Florida	94,900	$6.4	$20.8	$10.8
Texas	90,100	$5.5	$14.3	$9.0
Georgia	56,700	$3.8	$17.1	$6.1
New York	43,200	$3.4	$9.5	$5.4
Ohio	43,700	$3.0	$9.1	$5.0
North Carolina	31,100	$2.2	$7.0	$4.7
Illinois	41,800	$2.2	$8.3	$4.3
Pennsylvania	32,900	$2.9	$8.6	$3.8
Kansas	37,800	$2.6	$8.9	$3.7

Source: PwC calculations using the IMPLAN modeling system.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

The top 10 states ranked by total general aviation output impact per capita are: Kansas, North Dakota, Iowa, Alaska, Connecticut, Georgia, Minnesota, Arizona, Vermont, and Wyoming (see **Table E-5**).

Table E-5. – Top 10 States, Ranked by Total Output Impact Per Capita, 2018

State	Total Output Impact ($ Billions)	Per Capita Output Impact ($)
Kansas	$9.5	$3,278
North Dakota	$1.6	$2,062
Iowa	$5.8	$1,848
Alaska	$1.3	$1,726
Connecticut	$5.7	$1,587
Georgia	$14.3	$1,362
Minnesota	$7.2	$1,276
Arizona	$8.3	$1,161
Vermont	$0.7	$1,100
Wyoming	$0.6	$999

Source: PwC calculations using the IMPLAN modeling system and data from the US Census Bureau.

The top 10 states ranked by total general aviation GDP impact per capita are: Kansas, Alaska, North Dakota, Iowa, Connecticut, Minnesota, Arizona, Georgia, Oregon, and Washington (see **Table E-6**).[4]

Table E-6. – Top 10 States, Ranked by Total GDP Impact Per Capita, 2018

State	Total Contribution to GDP ($ Billions)	Per Capita Contribution to GDP ($)
Kansas	$3.7	$1,265
Alaska	$0.7	$988
North Dakota	$0.7	$959
Iowa	$3.0	$947
Connecticut	$3.1	$854
Minnesota	$3.5	$622
Arizona	$4.3	$602
Georgia	$6.1	$581
Oregon	$2.3	$541
Washington	$3.8	$508

Source: PwC calculations using the IMPLAN modeling system and data from the US Census Bureau.

[4] See **Table 11a** and **Table 11b** in the text for full state-level results.

Contribution of General Aviation to the US Economy in 2018

I. Introduction

PwC was engaged by the general aviation industry trade associations to quantify the contribution of general aviation to the US national and state economies.[5]

General aviation is defined as the manufacture and operation of any type of aircraft that has been issued an airworthiness certificate by the FAA, other than aircraft used for scheduled commercial air service or operated by the military.[6] For the study, the general aviation industry is defined to include aircraft and component manufacturing, flight operations, maintenance, and other activities.[7] The economic impact of the general aviation industry is measured in terms of employment, labor income, output, and value added for 2018, the most recent year for which a full, consistent set of national and state-level data are available.[8]

This report considers four types of economic impacts—direct, indirect, induced, and enabled—that in aggregate provide a measure of the total economic contribution of general aviation:

1. ***Direct impact*** is economic activity within the general aviation industry,
2. ***Indirect impact*** is economic activity occurring throughout the supply chain associated with general aviation,
3. ***Induced impact*** is economic activity resulting from household spending of labor and proprietor's income earned directly or indirectly from general aviation related activities, and
4. ***Enabled impact*** is economic activity resulting from the visitors' destination expenditures associated with general aviation flights.

This report is organized as follows. **Section II** provides background information on general aviation in the US, including statistics on general aviation aircraft manufacturing and operations. **Section III** presents estimates of general aviation's total economic impacts at the national and state levels in 2018. A summary by state is presented in **Appendix A**. A description of the data sources and methodology is included in **Appendix B**.

[5] The general aviation trade associations include: Aircraft Electronics Association (AEA), Aircraft Owners and Pilots Association (AOPA), Experimental Aircraft Association (EAA), General Aviation Manufacturers Association (GAMA), Helicopter Association International (HAI), National Air Transportation Association (NATA), and National Business Aviation Association (NBAA).
[6] This definition includes on-demand Federal Aviation Regulations (FAR) Part 135 operations.
[7] The manufacture and operation of unmanned aircraft are excluded for purposes of this study.
[8] US gross domestic product ("GDP") is the sum of value added in all industries. Value added consists of: employee compensation, proprietors' income, income to capital owners from property, and taxes on production and imports. Throughout this report, we refer to value added as contribution to GDP. By comparison, output represents the total value of sales, including the cost of intermediate inputs. Value added excludes the value of intermediate inputs.

II. Industry Background

General aviation includes the manufacture and operation of any type of aircraft that has been issued an airworthiness certificate by the FAA, other than aircraft used for scheduled commercial air service or operated by the military, as well as the manufacture of parts and components for use in general aviation aircraft. General aviation includes personal-use aircraft, business aircraft, helicopters, aircraft operated by flight schools, and on-demand passenger or cargo transportation under Federal Aviation Regulation Part 135.[9]

In 2018, more than 210,000 general aviation aircraft logged 25.5 million flight hours in the United States. The general aviation fleet ranges from small, amateur-built aircraft to large business jets and includes fixed-wing piston and turboprop airplanes, jet-powered airplanes, helicopters, gliders, and hot-air balloons. General aviation aircraft may be wholly-owned, jointly-owned, rented, chartered, or leased. General aviation covers everything from the use of personal aircraft by recreational pilots to business-owned aircraft used to transport people and/or cargo for business purposes. General aviation operations include air tours and sight-seeing flights as well as specialized activities such as air medical services, aerial applications in agriculture, forestry, and other industries, and flight training.

The economic impact of the general aviation industry includes: aircraft and component manufacturing, flight operations and maintenance, and destination visitor expenditures enabled by general aviation flights.

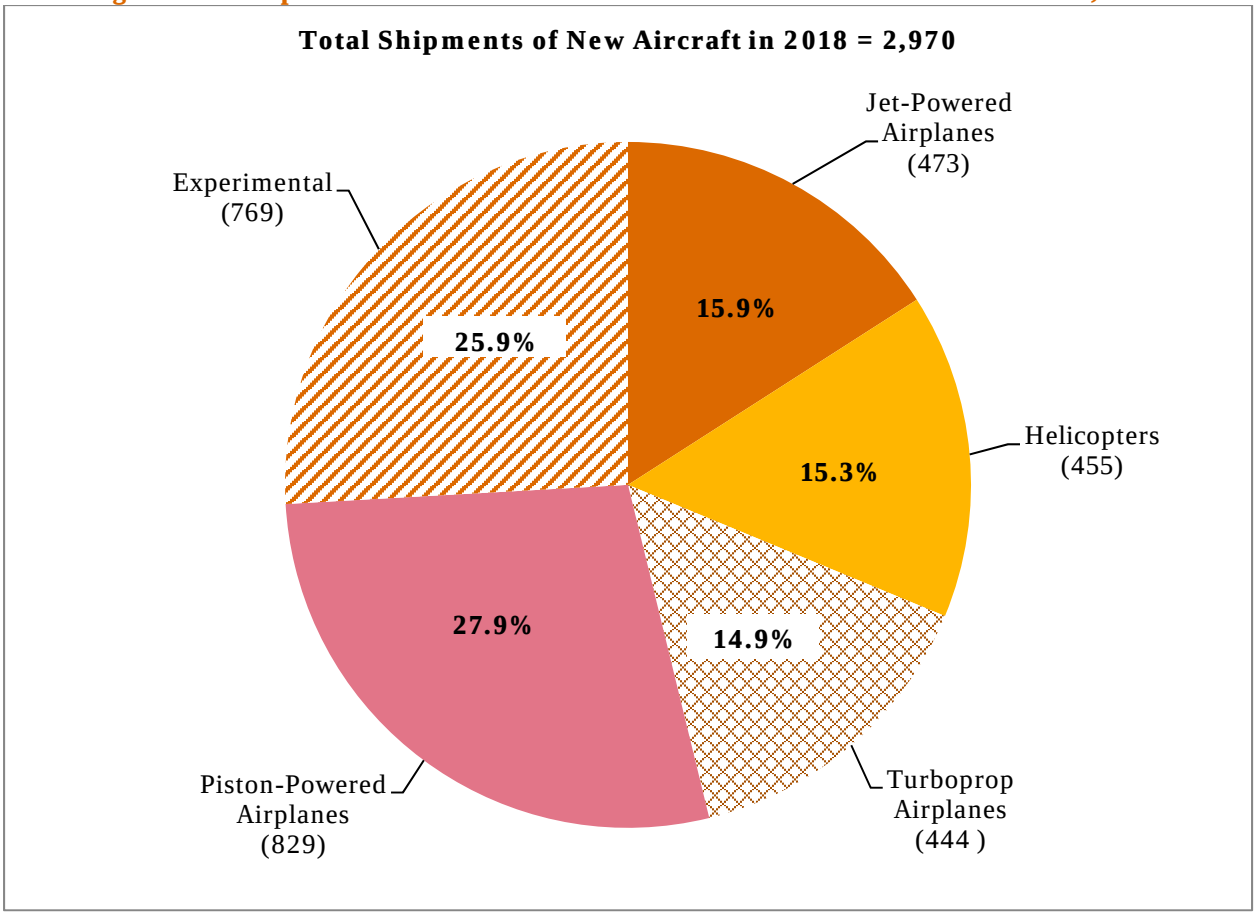
A. General Aviation Aircraft and Component Manufacturing

General aviation aircraft can be grouped into five categories: (1) piston-powered airplanes, (2) turboprop airplanes, (3) jet-powered airplanes, (4) rotorcraft (i.e., helicopters), and (5) experimental and other aircraft.[10] Experimental aircraft may have piston or turbine engines, but are usually piston-powered, and include home-built or kit aircraft flown by aviation enthusiasts, light-sport aircraft primarily flown for personal recreation, and certain vintage aircraft and rebuilt military aircraft flown for aerial exhibitions. Other aircraft includes gliders and lighter-than-air aircraft (i.e., hot air balloons).

Nearly 3,000 US manufactured general aviation aircraft were shipped in 2018. Piston-powered aircraft accounted for 28 percent of all shipments of general aviation aircraft, followed by experimental aircraft (26 percent) and jet airplanes (see **Figure 1**, below).[11]

[9] FAR Part 135 covers the operators that provide air transportation of persons or property for compensation or hire and generally includes commuter airlines and on-demand air transportation service. The latter operates without a set schedule and thus qualifies as general aviation under the definition used for this study.
[10] In accordance with industry norms, the term "aircraft" refers to any vehicle that is intended to be used for flight in the air, including: airplanes, helicopters, gliders, balloons, etc. Aircraft does not include ultralight vehicles which do not have an airworthiness certificate. The term "airplane" refers to fixed-wing aircraft, while rotorcraft refers to rotary-wing aircraft (i.e., helicopters).
[11] Due to the lack of data on shipments of US manufactured gliders and hot-air balloons, such aircraft are excluded from Figure 1.

Figure 1. – Shipments of New US-Manufactured General Aviation Aircraft, 2018

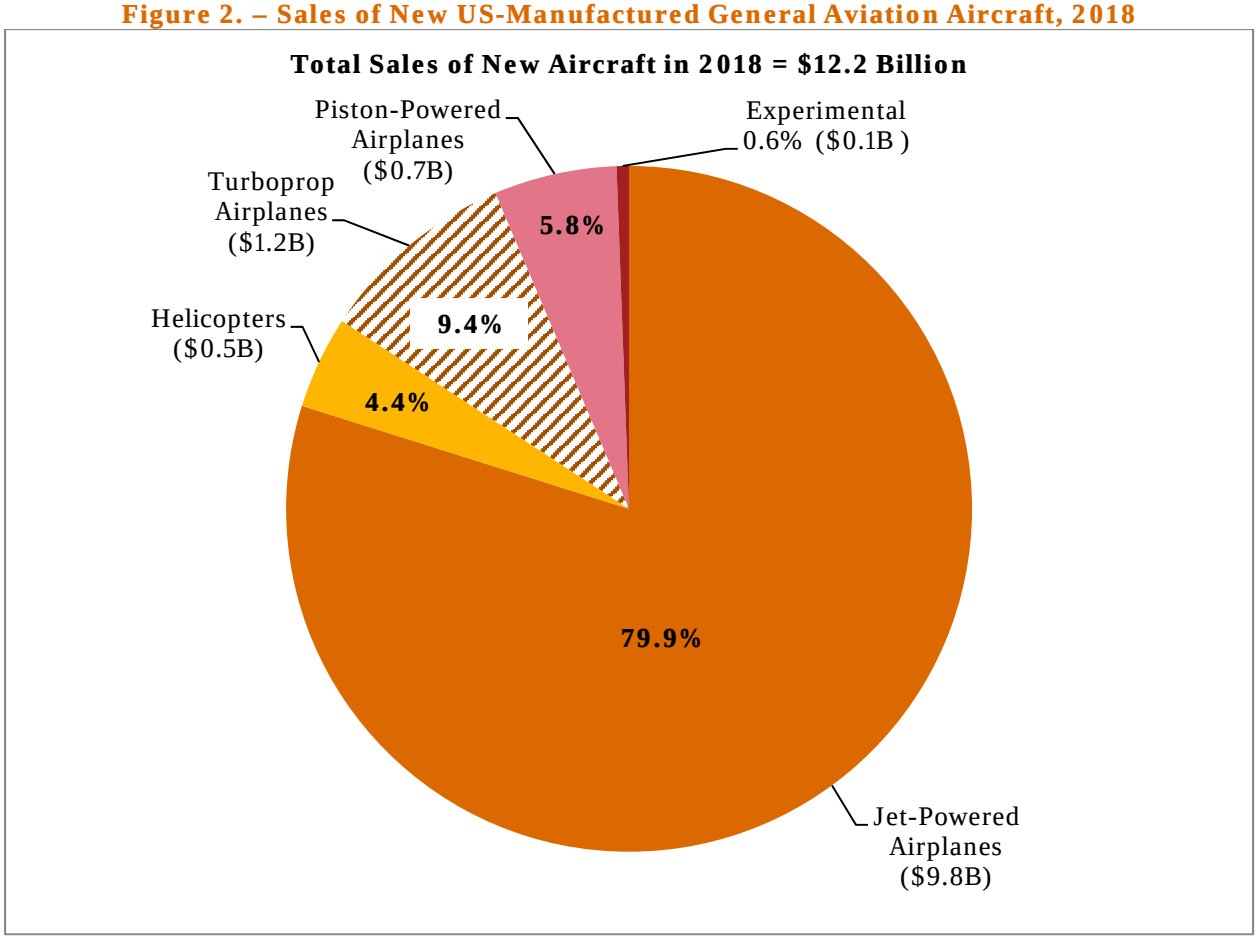


Source: PwC estimates based on GAMA (2018 Year End General Aviation Aircraft Shipment Report) and data from EAA, and the FAA aircraft registry.
Note: In addition to the 2,899 shipments of civilian general aviation aircraft, US general aviation manufacturers also produced 226 general aviation aircraft for military customers in 2018.

Total sales of new US-manufactured general aviation aircraft amounted to $12.2 billion in 2018. Jet-powered airplanes represented the majority of sales (nearly 80 percent) of new US-manufactured general aviation aircraft, while accounting for 16 percent of shipments by count (see **Figure 2**, below). Turboprop airplanes had the second highest share of sales in 2018 (9.4 percent) followed by piston-powered airplanes (5.8 percent).[12]

[12] Sales of other aircraft are excluded from Figure 2 due to lack of data. It is our understanding that very few gliders and lighter-than-air vehicles are manufactured in the United States.

Figure 2. – Sales of New US-Manufactured General Aviation Aircraft, 2018



Source: PwC estimates based GAMA (2018 Year End General Aviation Aircraft Shipment Report) and data from Dun & Bradstreet. Detail may not add up to the total due to rounding.

In addition to the manufacture of new aircraft, US manufacturers also produce a variety of parts and components for use in the manufacture, repair, and upkeep of general aviation aircraft around the world, including aircraft engines and engine components, aircraft assemblies and subassemblies, aircraft parts (such as propellers, wheels, tires, brakes, aircraft interiors, and lighting), and avionics and other electrical components. Aircraft component manufacturers produce parts for both new aircraft and for use in repairing and refurbishing existing aircraft. PwC estimates that total sales of US-manufactured general aviation aircraft components for both new and existing aircraft were approximately $34 billion in 2018.

B. International Trade

International trade plays an important role in the US civil aviation manufacturing industry (which includes both commercial and general aviation). Exports of commercial and general aviation aircraft, engines, and parts reached $131 billion in 2018.[13] Overall, the US civil aircraft manufacturing industry (including aircraft components) continues to be a net exporter. According to the US Census Bureau, the US had a favorable balance of trade in civil aircraft, engines, and parts, with exports exceeding imports by $75 billion in 2018.

[13] The Census Bureau trade data on aircraft and parts does not separately identify commercial and general aviation exports. However, data published by AIA indicate that 80 percent of the sales of US-manufactured civil aircraft are accounted for by commercial aircraft. This implies that exports of general aviation aircraft and parts were approximately $26 billion (20 percent of $131 billion) in 2018.

Table 1. – Balance of Trade: Civil Aircraft, Engines, Equipment, and Parts, 2009-2018
[Dollars Amounts in Billions]

Year	Exports	Imports	Balance
2009	$74.8	$30.6	$44.1
2010	$71.9	$31.3	$40.6
2011	$80.4	$35.5	$44.8
2012	$94.3	$40.1	$54.2
2013	$105.0	$46.9	$58.0
2014	$113.1	$53.3	$59.9
2015	$119.5	$55.2	$64.3
2016	$120.9	$50.0	$71.0
2017	$121.0	$51.3	$69.6
2018	$130.7	$55.4	$75.3

Source: US Census Bureau, Country and Product Trade Data, End-Use Tables (downloaded December 19, 2019).
Details may not sum to totals due to rounding.

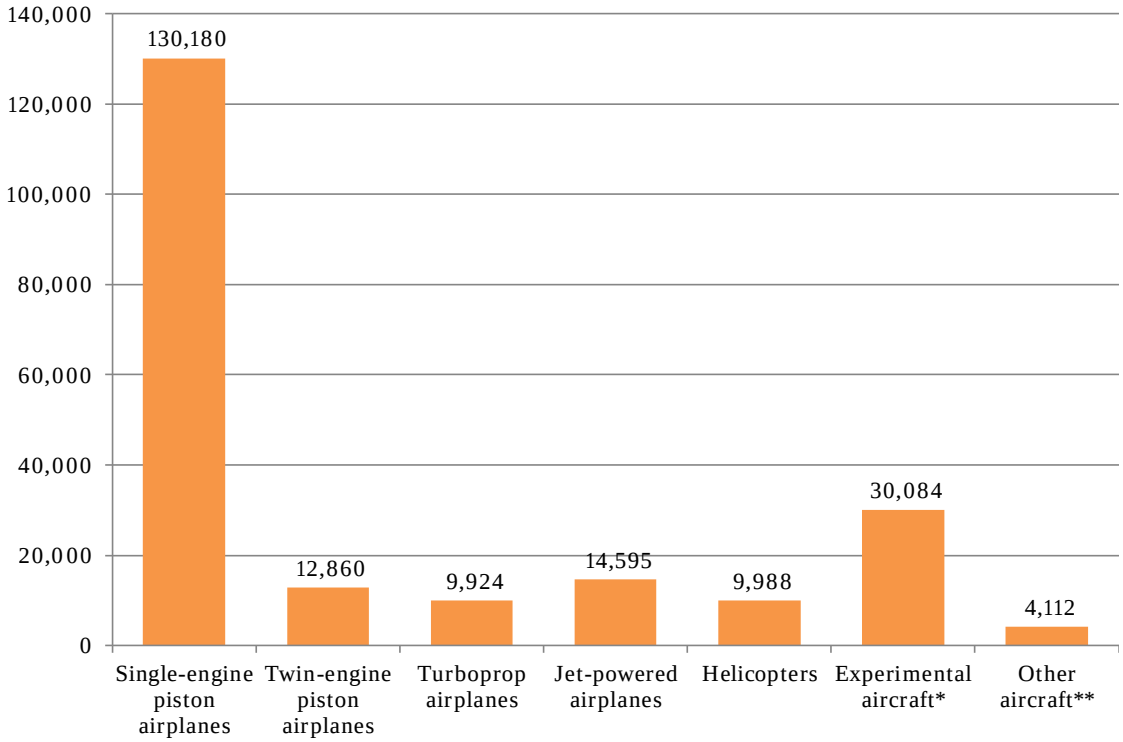
C. General Aviation Operations

The FAA estimates that there were 211,743 active aircraft in the US general aviation fleet, including on-demand FAR Part 135 aircraft, in 2018.[14] Single-engine piston airplanes made up the majority of the US fleet, accounting for 61 percent of active general aviation aircraft while twin-engine piston airplanes accounted for an additional 6 percent of the US fleet (See **Figure 3**, below). Experimental aircraft, including special light-sport aircraft, accounted for 13 percent of the US fleet. Jet-powered airplanes accounted for 6.9 percent of the US general aviation fleet in 2018.

Overall, the US general aviation fleet logged 25.5 million flight hours in 2018 (see **Figure 4**, below). Single-engine piston airplanes accounted for 47 percent of all flight hours in 2018 (12.1 million hours), followed by jet-powered airplanes (18 percent) and helicopters (11.5 percent).

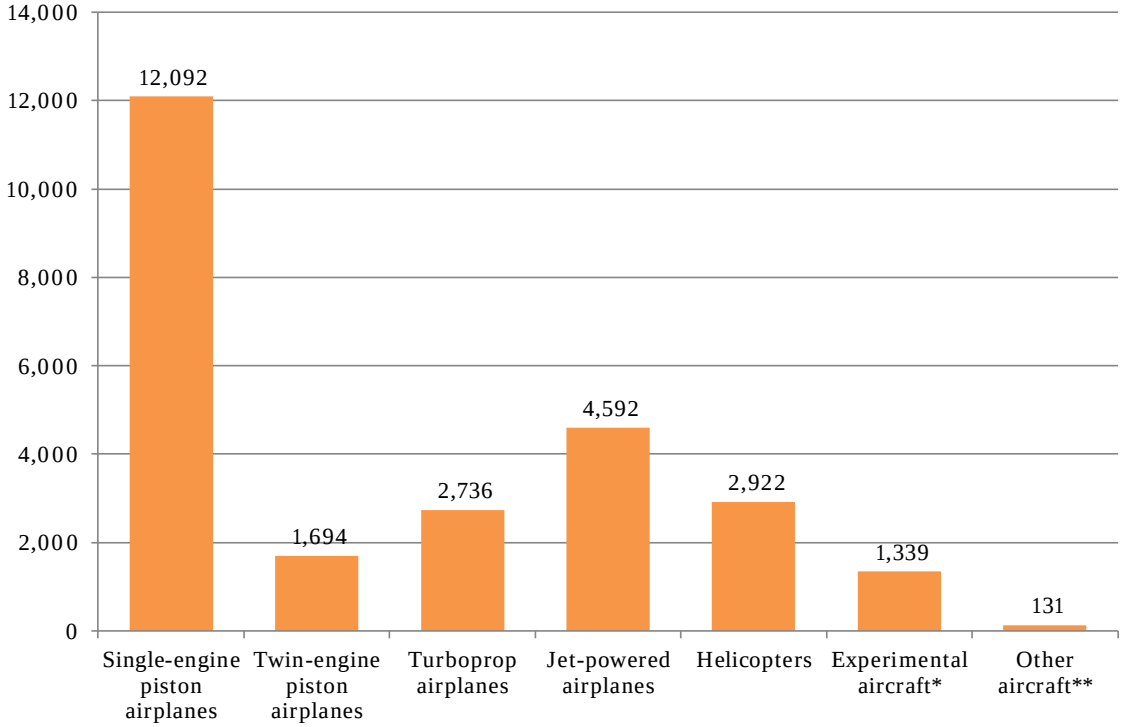
[14] There were 271,044 registered general aviation aircraft in the US in 2018.

Figure 3. – US General Aviation Fleet Size by Type of Aircraft, 2018



Source: FAA, *General Aviation and Part 135 Activity Survey, 2018 (October 2019).* *Includes special light-sport aircraft. **Includes gliders and lighter-than-air.

Figure 4. –US General Aviation Flight Hours by Type of Aircraft, 2018 [Thousands of Hours]



Source: FAA, *General Aviation and Part 135 Activity Survey, 2018 (October 2019).* *Includes special light-sport aircraft. **Includes gliders and lighter-than-air.

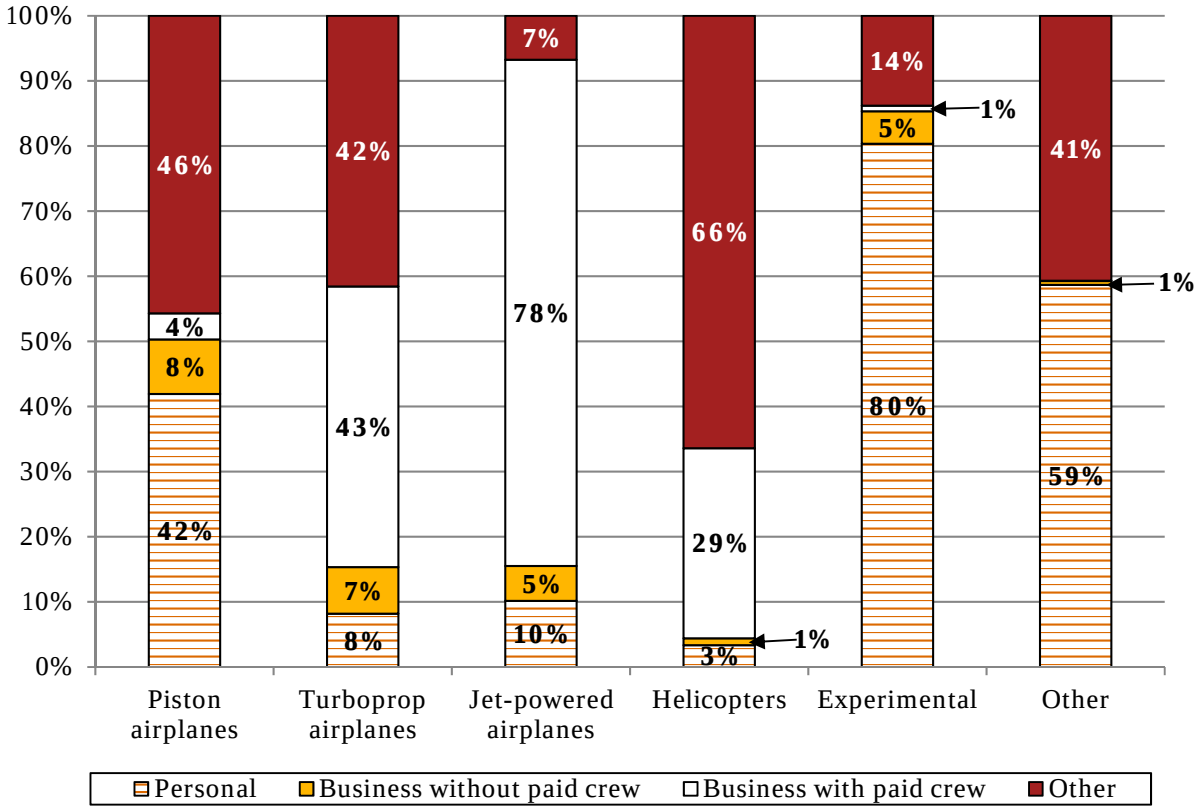
The FAA classifies general aviation flights into 15 separate use types based on flight information reported by aircraft owners. To develop flight cost profiles, we combined these use types into four major categories[15]:

1. **Personal:** Operation of general aviation aircraft for personal/recreational reasons. The pilots of personal-use aircraft are typically the owner of the aircraft and it is assumed that owners tie-down their aircraft, rather than rent hangar space.[16]
2. **Business without a paid professional crew:** Operation of general aviation aircraft for business transportation *without* a paid, professional flight crew. Such aircraft are typically flown by the owner or operator of the aircraft who does not earn a salary. It is assumed that owners rent space in a shared hangar and pay a business insurance rate on the aircraft.
3. **Business with a paid professional crew:** Operation of general aviation aircraft for business transportation *with* a paid, professional flight crew. Owners of such aircraft are assumed to rent a hangar, pay a lower business insurance rate, and hire a professional pilot and flight crew. Air taxi and air medical services are assumed to have this cost profile.
4. **Other:** Operation of general aviation aircraft for all other purposes, including flight instruction, aerial application in agriculture and other industries, aerial observation, and sight-seeing. It is assumed that other-use aircraft operate with a paid pilot, but no other paid crew.

Personal-use aircraft accounts for the majority of flight hours for piston-powered and experimental aircraft (see **Figure 5**, below). Business-use with a paid crew accounts for the largest share of flight hours for turboprop and jet-powered airplanes. The "other-use" category accounts for the majority (61 percent) of flight hours for rotorcraft.[17]

[15] See **Appendix B** for a detailed mapping of FAA use types to the four use categories reported in this study.
[16] This assumption is conservative as many personal-use aircraft owners rent space in shared hangars.
[17] Due to the lack of data on the operating costs of gliders and lighter-than-air, such aircraft are excluded from Figure 5 and our economic impact estimates. Gliders and lighter-than-air accounted for approximately 0.5 percent of total general aviation flight hours in 2018.

Figure 5. –General Aviation Flight Hours by Type of Aircraft and Reason for Use, 2018



Source: FAA, *General Aviation and Part 135 Activity Survey, 2018 (October 2019).*
*Includes aircraft used for business travel with or without a paid crew. **Includes flight instruction and all other purposes.

Compared with just 563 airports that service commercial air transportation, there are more than 19,000 landing facilities in the United States that serviced general aviation aircraft in 2018, including airports, heliports, seaplane bases, and other facilities.[18]

D. General Aviation Traveler Expenditures

It is estimated that approximately 120 million passengers traveled on general aviation flights in the US in 2018. These passengers purchase goods and services in the destination cities. For example, a business traveler on a business aircraft may incur expenses for a hotel room, local meals, and souvenirs. These travel expenditures provide additional economic benefits to the communities served by general aviation.

PwC estimates that overnight passengers on general aviation aircraft spent $1.9 billion on meals and $4.2 billion on lodging in 2018 (see **Table 2**, below). These estimates do not include spending by general aviation travelers on souvenirs, snacks, and other miscellaneous items.[19]

[18] The number of airports servicing commercial flights is based on data from the FAA's passenger and cargo statistics (https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/). The number of landing faculties servicing general aviation flights is from the Department of Transportation's Bureau of Transportation Statistics (https://www.bts.gov/content/number-us-airportsa).
[19] For a complete description of the methodology used to estimate travel spending see **Appendix B**.

Table 2. – Estimated Destination Expenditures Enabled by General Aviation Flights, 2018

Type of Expenditure	General Aviation Travel Expenditures ($ billions)
Meals	$1.9
Lodging	$4.2
Total	**$6.1**

Source: PwC estimates based on data from the FAA and per diem rates published by the General Services Administration and the Department of Defense.

III. Contribution of General Aviation to the US Economy

This section presents estimates of the general aviation industry's contribution to the US national and state economies in 2018, the most recent year for which a consistent set of data were available. The total contribution of the general aviation industry includes direct, indirect, induced, and enabled impacts:

1. ***Direct impact*** is economic activity within the general aviation industry,
2. ***Indirect impact*** is economic activity occurring throughout the supply chain associated with general aviation,
3. ***Induced impact*** is economic activity resulting from household spending of labor and proprietor's income earned directly or indirectly from general aviation-related activities, and
4. ***Enabled impact*** is economic activity resulting from the visitors' destination expenditures associated with general aviation flights.

The estimates do not account for all of the economic impact of the general aviation industry due to data limitations.[20]

A. National Results

Nationwide, 31,900 full- and part-time workers were employed in the manufacture of general aviation aircraft in 2018. Another 73,600 workers were employed in the manufacture of components for general aviation aircraft, for a combined direct employment impact of 105,500 jobs (see **Table 3**, below). These workers earned $11.0 billion in labor income in 2018, an average of $104,389 per job.

In addition, another 168,000 workers were employed in jobs directly related to the operation and maintenance of general aviation aircraft, including jobs in flight training, nonscheduled air transportation, scenic and sightseeing, and support activities for air transportation (such as fixed base operators and other maintenance and repair facilities).[21] These workers earned an average labor income per job of $86,277 in 2018.

[20] The estimates do not include economic impacts associated with: (1) manufacture and operation of gliders and hot-air balloons, (2) payments to aircraft brokers and certain other sales transactions costs, (3) capital expenditures by general aviation aircraft manufacturers, and (4) expenditures for expansion and improvement of general aviation airports.

[21] A fixed base operator is an airport-based business which parks, services, fuels and may repair aircraft; it often rents aircraft and may provide flight training.

Table 3. – General Aviation's Direct Contribution to the US Economy, 2018
[Dollar Amounts in Billions]

Item	Aircraft and Component Manufacturing	Operations and Maintenance	Total	Percent of US Economy
Employment (Jobs)(1)	105,500	168,000	273,500	0.14%
Labor Income (2)	$11.0	$14.5	$25.5	0.20%
Output	$46.4	$43.7	$90.1	0.26%
Contribution to GDP	$18.4	$23.2	$41.6	0.20%

Source: PwC estimates based on data from GAMA, the FAA, and Conklin & de Decker.
Details may not sum to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as annual wages and salaries and benefits as well as proprietors' income.

General aviation's direct output was $90.1 billion in 2018 and its direct contribution to GDP was $41.6 billion. Operations and maintenance of general aviation aircraft accounted for 61 percent of direct employment and 56 percent of direct GDP.

In 2018, general aviation—including direct, indirect, induced, and enabled impacts—supported 1.2 million full- and part-time US jobs, $77 billion in US labor income (including wages and salaries and benefits as well as proprietors' income), $247 billion in US output, and $128 billion of GDP (see **Table 4**, below). Each direct job in general aviation supports 3.3 jobs in other sectors of the economy.

Table 4. – General Aviation's Total Contribution to the US Economy, 2018
[Dollar Amounts in Billions]

Item	Direct	Indirect and Induced	Enabled	Total	Percent of US Economy
Employment (Jobs)(1)	273,500	791,300	114,400	1,179,200	0.59%
Labor Income(2)	$25.5	$46.3	$4.9	$76.7	0.61%
Output	$90.1	$142.1	$14.6	$246.8	0.73%
Contribution to GDP	$41.6	$78.2	$8.5	$128.3	0.62%

Source: PwC calculations using the IMPLAN modeling system.
Details may not sum to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Table 5 provides additional detail on the indirect and induced impacts associated with general aviation aircraft and component manufacturing and the operation and maintenance of general aviation aircraft.

Through its indirect and induced impacts, general aviation supported 421,100 jobs and $25 billion of GDP in the service sector, 88,300 jobs and $8 billion of GDP in the wholesale and retail trade sector, and 84,700 jobs and $17 billion of GDP in the finance and insurance sector (see **Table 6**, below).

Table 5. – Indirect and Induced Economic Impacts of General Aviation in 2018: Aircraft and Component Manufacturing vs. Aircraft Operations and Maintenance, [Dollar Amounts in Billions]

Item	Aircraft and Component Manufacturing	Operations and Maintenance	Total	Percent of US Economy
Indirect Impact				
Employment (Jobs)[1]	103,800	242,700	346,500	0.17%
Labor Income [2]	$8.0	$14.6	$22.6	0.18%
Output	$23.5	$46.3	$69.8	0.21%
Contribution to GDP	$12.3	$24.5	$36.9	0.18%
Induced Impact				
Employment (Jobs)[1]	174,600	270,200	444,800	0.22%
Labor Income [2]	$9.3	$14.4	$23.7	0.19%
Output	$28.4	$44.0	$72.4	0.21%
Contribution to GDP	$16.2	$25.1	$41.3	0.20%
Total Indirect and Induced Impacts				
Employment (Jobs)[1]	278,400	512,900	791,300	0.39%
Labor Income [2]	$17.3	$29.0	$46.3	0.37%
Output	$51.9	$90.3	$142.1	0.42%
Contribution to GDP	$28.5	$49.6	$78.2	0.38%

Source: PwC calculations using the IMPLAN modeling system.
Details may not sum to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Table 6. Indirect and Induced Impacts of General Aviation Aircraft and Component Manufacturing and Operations by Industry, 2018
[Dollar Amounts in Billions]

Industry Impacted	Employment (Jobs)(1)	Labor Income(2)	Output	GDP
Agriculture, forestry and fishing	9,000	$0.3	$1.1	$0.5
Mining	14,700	$1.5	$5.0	$3.6
Utilities	2,500	$0.4	$2.7	$1.2
Construction	9,300	$0.6	$1.6	$0.8
Manufacturing	51,100	$4.6	$33.0	$10.3
Wholesale and retail trade	88,300	$4.5	$12.2	$8.1
Transportation and warehousing	81,800	$5.4	$11.8	$6.7
Information	12,400	$1.6	$6.4	$3.2
Finance, insurance, real estate, rental and leasing	84,700	$5.4	$27.9	$17.4
Services	421,100	$20.8	$38.6	$24.9
Other	16,500	$1.3	$1.8	$1.7
Total	**791,300**	**$46.3**	**$142.1**	**$78.2**

Source: PwC estimates based on data from GAMA and the IMPLAN Modeling System.
Details may not sum to totals due to rounding.
(1) Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

B. State-Level Results

General aviation operations and aircraft manufacturing have an economic impact in all 50 states and the District of Columbia. General aviation's economic impact varies from state to state, depending on factors such as the availability of alternative modes of transportation, each state's industry mix, wage structure, spending and saving patterns, and connections to other economies.

Table 7a shows general aviation's state-by-state employment impacts, including direct, indirect and induced, and enabled impacts, where the states are shown alphabetically. **Table 7b** is the same as **Table 7a**, except that the states are ranked by total jobs supported by general aviation. Total jobs supported by general aviation in 2018 ranged from a low of 2,000 in Rhode Island to a high of 148,300 in California. The top 10 states in terms of total jobs supported were California, Florida, Texas, Georgia, Ohio, New York, Illinois, Arizona, Kansas, and Pennsylvania. Combined, these 10 states account for 53 percent of the total jobs attributable to general aviation in the US. As shown in **Table 7c**, the total number of jobs supported by general aviation as a share of statewide employment was highest in Kansas, where 1.9 percent of all employment was supported by general aviation, followed by Alaska (1.4 percent) and North Dakota (1.3 percent).

Table 8a provides general aviation's total impact on labor income (including wages and salaries and benefits as well as proprietors' income) where the states are shown alphabetically. **Table 8b** shows general aviation's labor income impact ranked by total labor income supported by general aviation. General aviation's total labor income impact ranges from a low of $112 million in Rhode Island to a high of $11.3 billion in California. The top 10 states in terms of total labor income supported were California ($11.3 billion), Florida ($6.4 billion), Texas ($5.5 billion), Georgia ($3.8 billion), New York ($3.4 billion), Ohio ($3.0 billion), Pennsylvania, ($2.9 billion), Kansas ($2.6 billion), Illinois ($2.2 billion), and North Carolina (2.2 billion). As shown in **Table 8c**, total labor income supported by general aviation as a

percent of total labor income in the state is highest in Kansas (2.1 percent), Iowa (1.6 percent), Alaska (1.2 percent), Arizona (1.2 percent), and North Dakota (1.2 percent).

Table 9a provides general aviation's total impact on output by state, including direct, indirect and induced, and enabled impacts, where the states are shown alphabetically. **Table 9b** shows general aviation's output impact ranked by total output supported by general aviation. General aviation's total output impact ranges from a low of $348 million in Rhode Island to a high of $32.8 billion in California. The top 10 states in terms of total impact on output were California ($32.8 billion), Florida ($20.7 billion), Georgia ($17.1 billion), Texas ($14.3 billion), New York ($9.5 billion), Ohio ($9.1 billion), Kansas ($8.9 billion), Pennsylvania ($8.6 billion), Illinois ($8.3 billion), and Washington ($7.2 billion). As shown in **Table 9c**, total output supported by general aviation as a percent of total output in the state is highest in Kansas (2.8 percent), Alaska (1.5 percent), and North Dakota (1.5 percent).

Table 10a provides general aviation's total impact on GDP by state, including direct, indirect and induced, and enabled impacts, where the states are shown alphabetically. **Table 10b** shows general aviation's GDP impact ranked by total GDP supported by general aviation. General aviation's total GDP impact ranges from a low of $204 million in Rhode Island to a high of $18.5 billion in California. The top 10 states in terms of total impact on GDP were California ($18.5 billion), Florida ($10.8 billion), Texas ($9.0 billion), Georgia ($6.1 billion), New York ($5.4 billion), Ohio ($5.0 billion), North Carolina ($4.7 billion), Illinois ($4.3 billion), Pennsylvania ($3.8 billion), and Kansas ($3.7). As shown in **Table 10c**, total GDP supported by general aviation as a percent of total GDP in the state is highest in Kansas (2.2 percent), Iowa (1.6 percent), and Alaska (1.3 percent).

It is important to note that general aviation can have a disproportionate impact on the economies of large, sparsely populated states where there are fewer alternative modes of transportation for passengers and cargo. To reflect this, **Table 11a** and **Table 11b** provide general aviation's total GDP impact per capita by state in 2018 (sorted alphabetically and ranked by per capita GDP impact).

Nationwide, including direct, indirect and induced, and enabled impacts, general aviation supported $393 in GDP per capita in 2018. The top 10 states in terms of general aviation's total GDP impact per capita were Kansas ($1,265 per person), Alaska ($988 per person), North Dakota ($959 per person), Iowa ($947 per person), Connecticut ($854 per person), Minnesota ($622 per person), Arizona ($602 per person), Georgia ($581 per person), Oregon ($541 per person), and Washington ($508 per person).

Table 12a and **Table 12b** provide general aviation's total output impact per capita by state in 2018 (sorted alphabetically and ranked by per capita output impact).

Nationwide, including direct, indirect and induced, and enabled impacts, general aviation supported $755 in output per capita in 2018. The top 10 states in terms of general aviation's total output impact per capita were Kansas ($3,278 per person), North Dakota ($2,062 per person), Iowa ($1,848 per person), Alaska ($1,726 per person), Connecticut ($1,587 per person), Georgia ($1,362 per person), Minnesota ($1,276 per person), Arizona ($1,161 per person), Vermont ($1,100 per person), and Wyoming ($999 per person).

Table 7a. General Aviation's Employment Impact by State, 2018
Sorted Alphabetically

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Employment
Alabama	5,100	11,300	3,700	20,100	0.7%
Alaska	2,100	3,000	1,200	6,400	1.4%
Arizona	10,900	25,300	4,000	40,200	1.0%
Arkansas	6,300	8,200	1,600	16,100	1.0%
California	31,900	101,000	15,400	148,300	0.6%
Colorado	4,400	15,500	2,800	22,700	0.6%
Connecticut	7,500	14,100	700	22,300	1.0%
Delaware	400	1,700	200	2,300	0.4%
District of Columbia	200	1,800	300	2,400	0.3%
Florida	21,400	62,100	11,400	94,900	0.8%
Georgia	17,400	35,800	3,500	56,700	0.9%
Hawaii	1,000	3,100	400	4,500	0.5%
Idaho	2,800	4,800	1,500	9,100	0.9%
Illinois	8,100	30,500	3,200	41,800	0.5%
Indiana	4,600	14,100	1,800	20,600	0.5%
Iowa	8,200	15,100	1,400	24,700	1.2%
Kansas	16,900	19,200	1,700	37,800	1.9%
Kentucky	1,900	7,700	1,300	11,000	0.4%
Louisiana	3,300	10,600	1,500	15,400	0.6%
Maine	1,200	3,000	600	4,800	0.6%
Maryland	1,500	9,500	900	11,900	0.3%
Massachusetts	3,000	14,400	1,900	19,300	0.4%
Michigan	5,000	19,100	2,500	26,600	0.5%
Minnesota	8,700	19,200	2,400	30,300	0.8%
Mississippi	3,100	6,400	1,500	10,900	0.7%
Missouri	2,400	11,100	1,800	15,300	0.4%
Montana	1,700	3,300	900	5,800	0.8%
Nebraska	2,100	5,100	900	8,200	0.6%
Nevada	1,500	6,200	1,000	8,700	0.5%
New Hampshire	700	2,800	300	3,800	0.4%
New Jersey	1,800	14,900	1,800	18,600	0.3%
New Mexico	1,500	3,900	900	6,200	0.6%
New York	5,900	33,900	3,400	43,200	0.3%
North Carolina	7,600	20,500	3,000	31,100	0.5%
North Dakota	2,900	3,800	600	7,400	1.3%
Ohio	9,300	31,100	3,300	43,700	0.6%
Oklahoma	3,800	10,500	1,700	16,000	0.7%
Oregon	4,300	11,500	2,600	18,400	0.7%
Pennsylvania	6,100	24,300	2,600	32,900	0.4%
Rhode Island	200	1,600	200	2,000	0.3%
South Carolina	1,700	7,700	1,200	10,600	0.4%
South Dakota	1,100	2,300	400	3,800	0.6%
Tennessee	3,500	12,600	2,100	18,200	0.4%
Texas	16,600	65,400	8,100	90,100	0.5%
Utah	2,900	8,600	1,100	12,600	0.6%
Vermont	1,400	2,200	200	3,800	0.9%
Virginia	3,200	14,700	1,900	19,800	0.4%
Washington	7,800	18,700	3,400	29,800	0.7%
West Virginia	1,700	3,500	400	5,600	0.6%
Wisconsin	4,300	12,900	2,800	20,100	0.5%
Wyoming	600	1,500	400	2,400	0.6%
U.S. Total	**273,500**	**791,300**	**114,400**	**1,179,200**	**0.6%**

Note: Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
Details may not sum to totals due to rounding.

Table 7b. General Aviation's Employment Impact by State, 2018

Sorted by Total Employment Impact

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Employment
California	31,900	101,000	15,400	148,300	0.6%
Florida	21,400	62,100	11,400	94,900	0.8%
Texas	16,600	65,400	8,100	90,100	0.5%
Georgia	17,400	35,800	3,500	56,700	0.9%
Ohio	9,300	31,100	3,300	43,700	0.6%
New York	5,900	33,900	3,400	43,200	0.3%
Illinois	8,100	30,500	3,200	41,800	0.5%
Arizona	10,900	25,300	4,000	40,200	1.0%
Kansas	16,900	19,200	1,700	37,800	1.9%
Pennsylvania	6,100	24,300	2,600	32,900	0.4%
North Carolina	7,600	20,500	3,000	31,100	0.5%
Minnesota	8,700	19,200	2,400	30,300	0.8%
Washington	7,800	18,700	3,400	29,800	0.7%
Michigan	5,000	19,100	2,500	26,600	0.5%
Iowa	8,200	15,100	1,400	24,700	1.2%
Colorado	4,400	15,500	2,800	22,700	0.6%
Connecticut	7,500	14,100	700	22,300	1.0%
Indiana	4,600	14,100	1,800	20,600	0.5%
Alabama	5,100	11,300	3,700	20,100	0.7%
Wisconsin	4,300	12,900	2,800	20,100	0.5%
Virginia	3,200	14,700	1,900	19,800	0.4%
Massachusetts	3,000	14,400	1,900	19,300	0.4%
New Jersey	1,800	14,900	1,800	18,600	0.3%
Oregon	4,300	11,500	2,600	18,400	0.7%
Tennessee	3,500	12,600	2,100	18,200	0.4%
Arkansas	6,300	8,200	1,600	16,100	1.0%
Oklahoma	3,800	10,500	1,700	16,000	0.7%
Louisiana	3,300	10,600	1,500	15,400	0.6%
Missouri	2,400	11,100	1,800	15,300	0.4%
Utah	2,900	8,600	1,100	12,600	0.6%
Maryland	1,500	9,500	900	11,900	0.3%
Kentucky	1,900	7,700	1,300	11,000	0.4%
Mississippi	3,100	6,400	1,500	10,900	0.7%
South Carolina	1,700	7,700	1,200	10,600	0.4%
Idaho	2,800	4,800	1,500	9,100	0.9%
Nevada	1,500	6,200	1,000	8,700	0.5%
Nebraska	2,100	5,100	900	8,200	0.6%
North Dakota	2,900	3,800	600	7,400	1.3%
Alaska	2,100	3,000	1,200	6,400	1.4%
New Mexico	1,500	3,900	900	6,200	0.6%
Montana	1,700	3,300	900	5,800	0.8%
West Virginia	1,700	3,500	400	5,600	0.6%
Maine	1,200	3,000	600	4,800	0.6%
Hawaii	1,000	3,100	400	4,500	0.5%
New Hampshire	700	2,800	300	3,800	0.4%
South Dakota	1,100	2,300	400	3,800	0.6%
Vermont	1,400	2,200	200	3,800	0.9%
Wyoming	600	1,500	400	2,400	0.6%
District of Columbia	200	1,800	300	2,400	0.3%
Delaware	400	1,700	200	2,300	0.4%
Rhode Island	200	1,600	200	2,000	0.3%
U.S. Total	**273,500**	**791,300**	**114,400**	**1,179,200**	**0.6%**

Note: Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
Details may not sum to totals due to rounding.

Table 7c. General Aviation's Employment Impact by State, 2018

Sorted by Total Employment Impact as a Percent of Total State Employment

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Employment
Kansas	16,900	19,200	1,700	37,800	1.9%
Alaska	2,100	3,000	1,200	6,400	1.4%
North Dakota	2,900	3,800	600	7,400	1.3%
Iowa	8,200	15,100	1,400	24,700	1.2%
Arizona	10,900	25,300	4,000	40,200	1.0%
Arkansas	6,300	8,200	1,600	16,100	1.0%
Connecticut	7,500	14,100	700	22,300	1.0%
Georgia	17,400	35,800	3,500	56,700	0.9%
Idaho	2,800	4,800	1,500	9,100	0.9%
Vermont	1,400	2,200	200	3,800	0.9%
Montana	1,700	3,300	900	5,800	0.8%
Minnesota	8,700	19,200	2,400	30,300	0.8%
Florida	21,400	62,100	11,400	94,900	0.8%
Alabama	5,100	11,300	3,700	20,100	0.7%
Oregon	4,300	11,500	2,600	18,400	0.7%
Oklahoma	3,800	10,500	1,700	16,000	0.7%
Mississippi	3,100	6,400	1,500	10,900	0.7%
Washington	7,800	18,700	3,400	29,800	0.7%
South Dakota	1,100	2,300	400	3,800	0.6%
West Virginia	1,700	3,500	400	5,600	0.6%
Ohio	9,300	31,100	3,300	43,700	0.6%
Nebraska	2,100	5,100	900	8,200	0.6%
Utah	2,900	8,600	1,100	12,600	0.6%
California	31,900	101,000	15,400	148,300	0.6%
Wyoming	600	1,500	400	2,400	0.6%
Colorado	4,400	15,500	2,800	22,700	0.6%
Maine	1,200	3,000	600	4,800	0.6%
Louisiana	3,300	10,600	1,500	15,400	0.6%
New Mexico	1,500	3,900	900	6,200	0.6%
Wisconsin	4,300	12,900	2,800	20,100	0.5%
Illinois	8,100	30,500	3,200	41,800	0.5%
Indiana	4,600	14,100	1,800	20,600	0.5%
North Carolina	7,600	20,500	3,000	31,100	0.5%
Texas	16,600	65,400	8,100	90,100	0.5%
Hawaii	1,000	3,100	400	4,500	0.5%
Nevada	1,500	6,200	1,000	8,700	0.5%
Michigan	5,000	19,100	2,500	26,600	0.5%
Tennessee	3,500	12,600	2,100	18,200	0.4%
New Hampshire	700	2,800	300	3,800	0.4%
Kentucky	1,900	7,700	1,300	11,000	0.4%
Pennsylvania	6,100	24,300	2,600	32,900	0.4%
Missouri	2,400	11,100	1,800	15,300	0.4%
Massachusetts	3,000	14,400	1,900	19,300	0.4%
Delaware	400	1,700	200	2,300	0.4%
South Carolina	1,700	7,700	1,200	10,600	0.4%
Virginia	3,200	14,700	1,900	19,800	0.4%
New York	5,900	33,900	3,400	43,200	0.3%
New Jersey	1,800	14,900	1,800	18,600	0.3%
Maryland	1,500	9,500	900	11,900	0.3%
Rhode Island	200	1,600	200	2,000	0.3%
District of Columbia	200	1,800	300	2,400	0.3%
U.S. Total	**273,500**	**791,300**	**114,400**	**1,179,200**	**0.6%**

Note: Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
Details may not sum to totals due to rounding.

Table 8a. General Aviation's Labor Income Impact by State, in $ Millions, 2018

Sorted Alphabetically

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Labor Income
Alabama	$371	$534	$113	$1,018	0.8%
Alaska	$152	$192	$48	$393	1.2%
Arizona	$1,117	$1,311	$152	$2,580	1.2%
Arkansas	$250	$376	$46	$672	0.9%
California	$3,756	$6,789	$804	$11,350	0.6%
Colorado	$495	$981	$118	$1,594	0.7%
Connecticut	$874	$1,019	$39	$1,932	1.1%
Delaware	$47	$105	$9	$161	0.4%
District of Columbia	$30	$187	$22	$240	0.2%
Florida	$1,999	$3,051	$450	$5,500	0.9%
Georgia	$1,714	$1,910	$140	$3,764	1.1%
Hawaii	$89	$162	$18	$268	0.5%
Idaho	$155	$221	$45	$421	0.8%
Illinois	$942	$1,883	$169	$2,994	0.6%
Indiana	$432	$753	$72	$1,256	0.6%
Iowa	$1,025	$726	$49	$1,801	1.6%
Kansas	$1,155	$1,022	$57	$2,234	2.1%
Kentucky	$167	$382	$51	$599	0.5%
Louisiana	$316	$580	$58	$954	0.7%
Maine	$51	$140	$22	$213	0.5%
Maryland	$145	$558	$49	$752	0.3%
Massachusetts	$269	$976	$105	$1,350	0.4%
Michigan	$442	$1,029	$104	$1,574	0.5%
Minnesota	$706	$1,156	$100	$1,962	0.8%
Mississippi	$142	$270	$44	$456	0.6%
Missouri	$163	$573	$67	$804	0.4%
Montana	$77	$152	$28	$258	0.8%
Nebraska	$140	$284	$34	$458	0.6%
Nevada	$132	$310	$44	$486	0.5%
New Hampshire	$57	$164	$16	$237	0.4%
New Jersey	$217	$1,031	$99	$1,347	0.3%
New Mexico	$91	$178	$27	$296	0.5%
New York	$644	$2,512	$214	$3,369	0.3%
North Carolina	$531	$1,062	$120	$1,713	0.5%
North Dakota	$151	$226	$20	$397	1.2%
Ohio	$1,103	$1,694	$131	$2,928	0.7%
Oklahoma	$333	$591	$59	$983	0.8%
Oregon	$414	$642	$101	$1,157	0.8%
Pennsylvania	$502	$1,530	$127	$2,159	0.4%
Rhode Island	$15	$90	$7	$112	0.3%
South Carolina	$103	$366	$46	$515	0.4%
South Dakota	$61	$111	$15	$187	0.6%
Tennessee	$230	$708	$90	$1,027	0.4%
Texas	$1,678	$4,324	$360	$6,361	0.6%
Utah	$305	$430	$39	$774	0.7%
Vermont	$102	$102	$8	$211	1.0%
Virginia	$281	$831	$80	$1,191	0.4%
Washington	$870	$1,195	$158	$2,222	0.7%
West Virginia	$143	$165	$14	$323	0.7%
Wisconsin	$289	$673	$98	$1,060	0.5%
Wyoming	$35	$87	$13	$135	0.6%
U.S. Total	**$25,508**	**$46,345**	**$4,898**	**$76,750**	**0.6%**

Note: Labor income is defined as wages and salaries and benefits as well as proprietors' income.
Details may not sum to totals due to rounding.

Table 8b. General Aviation's Labor Income Impact by State, in $ Millions, 2018

Sorted by Total Labor Income Impact

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Labor Income
California	$3,756	$6,789	$804	$11,350	0.6%
Florida	$1,678	$4,324	$360	$6,361	0.9%
Texas	$1,999	$3,051	$450	$5,500	0.6%
Georgia	$1,714	$1,910	$140	$3,764	1.1%
New York	$644	$2,512	$214	$3,369	0.3%
Ohio	$942	$1,883	$169	$2,994	0.7%
Pennsylvania	$1,103	$1,694	$131	$2,928	0.4%
Kansas	$1,117	$1,311	$152	$2,580	2.1%
Illinois	$1,155	$1,022	$57	$2,234	0.6%
North Carolina	$870	$1,195	$158	$2,222	0.5%
Minnesota	$502	$1,530	$127	$2,159	0.8%
Washington	$706	$1,156	$100	$1,962	0.7%
Arizona	$874	$1,019	$39	$1,932	1.2%
New Jersey	$1,025	$726	$49	$1,801	0.3%
Michigan	$531	$1,062	$120	$1,713	0.5%
Connecticut	$495	$981	$118	$1,594	1.1%
Colorado	$442	$1,029	$104	$1,574	0.7%
Iowa	$269	$976	$105	$1,350	1.6%
Alabama	$217	$1,031	$99	$1,347	0.8%
Indiana	$432	$753	$72	$1,256	0.6%
Wisconsin	$281	$831	$80	$1,191	0.5%
Arkansas	$414	$642	$101	$1,157	0.9%
Massachusetts	$289	$673	$98	$1,060	0.4%
Oklahoma	$230	$708	$90	$1,027	0.8%
Oregon	$371	$534	$113	$1,018	0.8%
Missouri	$333	$591	$59	$983	0.4%
Tennessee	$316	$580	$58	$954	0.4%
Louisiana	$163	$573	$67	$804	0.7%
Kentucky	$305	$430	$39	$774	0.5%
Utah	$145	$558	$49	$752	0.7%
Virginia	$250	$376	$46	$672	0.4%
Mississippi	$167	$382	$51	$599	0.6%
Maryland	$103	$366	$46	$515	0.3%
South Carolina	$132	$310	$44	$486	0.4%
Nebraska	$140	$284	$34	$458	0.6%
Idaho	$142	$270	$44	$456	0.8%
North Dakota	$155	$221	$45	$421	1.2%
Hawaii	$151	$226	$20	$397	0.5%
Nevada	$152	$192	$48	$393	0.5%
Montana	$143	$165	$14	$323	0.8%
Alaska	$91	$178	$27	$296	1.2%
New Mexico	$89	$162	$18	$268	0.5%
West Virginia	$77	$152	$28	$258	0.7%
Vermont	$30	$187	$22	$240	1.0%
New Hampshire	$57	$164	$16	$237	0.4%
South Dakota	$51	$140	$22	$213	0.6%
Maine	$102	$102	$8	$211	0.5%
Wyoming	$61	$111	$15	$187	0.6%
District of Columbia	$47	$105	$9	$161	0.2%
Delaware	$35	$87	$13	$135	0.4%
Rhode Island	$15	$90	$7	$112	0.3%
U.S. Total	**$25,508**	**$46,345**	**$4,898**	**$76,750**	**0.6%**

Note: Labor income is defined as wages and salaries and benefits as well as proprietors' income.
Details may not sum to totals due to rounding.

Table 8c. General Aviation's Labor Income Impact by State, in $ Millions, 2018

Sorted by Total Labor Income Impact as a Percent of State Total Labor Income

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Labor Income
Kansas	$1,117	$1,311	$152	$2,580	2.1%
Iowa	$269	$976	$105	$1,350	1.6%
Alaska	$91	$178	$27	$296	1.2%
Arizona	$874	$1,019	$39	$1,932	1.2%
North Dakota	$155	$221	$45	$421	1.2%
Connecticut	$495	$981	$118	$1,594	1.1%
Georgia	$1,714	$1,910	$140	$3,764	1.1%
Vermont	$30	$187	$22	$240	1.0%
Florida	$1,678	$4,324	$360	$6,361	0.9%
Arkansas	$414	$642	$101	$1,157	0.9%
Idaho	$142	$270	$44	$456	0.8%
Minnesota	$502	$1,530	$127	$2,159	0.8%
Montana	$143	$165	$14	$323	0.8%
Oklahoma	$230	$708	$90	$1,027	0.8%
Oregon	$371	$534	$113	$1,018	0.8%
Alabama	$217	$1,031	$99	$1,347	0.8%
Ohio	$942	$1,883	$169	$2,994	0.7%
Utah	$145	$558	$49	$752	0.7%
West Virginia	$77	$152	$28	$258	0.7%
Washington	$706	$1,156	$100	$1,962	0.7%
Colorado	$442	$1,029	$104	$1,574	0.7%
Louisiana	$163	$573	$67	$804	0.7%
Mississippi	$167	$382	$51	$599	0.6%
California	$3,756	$6,789	$804	$11,350	0.6%
Nebraska	$140	$284	$34	$458	0.6%
Wyoming	$61	$111	$15	$187	0.6%
South Dakota	$51	$140	$22	$213	0.6%
Texas	$1,999	$3,051	$450	$5,500	0.6%
Illinois	$1,155	$1,022	$57	$2,234	0.6%
Indiana	$432	$753	$72	$1,256	0.6%
New Mexico	$89	$162	$18	$268	0.5%
North Carolina	$870	$1,195	$158	$2,222	0.5%
Wisconsin	$281	$831	$80	$1,191	0.5%
Maine	$102	$102	$8	$211	0.5%
Nevada	$152	$192	$48	$393	0.5%
Hawaii	$151	$226	$20	$397	0.5%
Michigan	$531	$1,062	$120	$1,713	0.5%
Kentucky	$305	$430	$39	$774	0.5%
Tennessee	$316	$580	$58	$954	0.4%
Delaware	$35	$87	$13	$135	0.4%
Pennsylvania	$1,103	$1,694	$131	$2,928	0.4%
New Hampshire	$57	$164	$16	$237	0.4%
Missouri	$333	$591	$59	$983	0.4%
Massachusetts	$289	$673	$98	$1,060	0.4%
South Carolina	$132	$310	$44	$486	0.4%
Virginia	$250	$376	$46	$672	0.4%
New Jersey	$1,025	$726	$49	$1,801	0.3%
New York	$644	$2,512	$214	$3,369	0.3%
Rhode Island	$15	$90	$7	$112	0.3%
Maryland	$103	$366	$46	$515	0.3%
District of Columbia	$47	$105	$9	$161	0.2%
U.S. Total	**$25,508**	**$46,345**	**$4,898**	**$76,750**	**0.6%**

Note: Labor income is defined as wages and salaries and benefits as well as proprietors' income.
Details may not sum to totals due to rounding.

Table 9a. General Aviation's Output Impact by State, in $ Millions, 2018

Sorted Alphabetically

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Output
Alabama	$1,502	$1,875	$382	$3,759	0.8%
Alaska	$469	$666	$134	$1,269	1.5%
Arizona	$4,070	$3,784	$458	$8,312	1.5%
Arkansas	$1,092	$1,336	$169	$2,597	1.0%
California	$11,042	$19,603	$2,148	$32,793	0.7%
Colorado	$1,407	$2,615	$346	$4,367	0.7%
Connecticut	$3,023	$2,543	$100	$5,667	1.3%
Delaware	$106	$401	$28	$535	0.5%
District of Columbia	$68	$333	$46	$447	0.3%
Florida	$6,845	$8,879	$1,348	$17,073	1.0%
Georgia	$8,212	$5,668	$437	$14,317	1.4%
Hawaii	$290	$538	$51	$879	0.6%
Idaho	$621	$689	$148	$1,459	1.0%
Illinois	$2,788	$5,789	$494	$9,071	0.6%
Indiana	$1,881	$2,815	$242	$4,938	0.7%
Iowa	$3,267	$2,377	$177	$5,820	1.5%
Kansas	$6,141	$3,211	$192	$9,544	2.8%
Kentucky	$458	$1,408	$169	$2,035	0.5%
Louisiana	$891	$2,961	$201	$4,054	0.8%
Maine	$276	$439	$64	$779	0.7%
Maryland	$421	$1,502	$135	$2,058	0.3%
Massachusetts	$914	$2,457	$267	$3,638	0.4%
Michigan	$1,430	$3,231	$332	$4,993	0.5%
Minnesota	$3,415	$3,432	$307	$7,154	1.1%
Mississippi	$759	$1,163	$154	$2,077	0.8%
Missouri	$577	$1,813	$216	$2,605	0.4%
Montana	$348	$602	$87	$1,037	1.1%
Nebraska	$586	$899	$117	$1,603	0.7%
Nevada	$446	$902	$124	$1,471	0.6%
New Hampshire	$176	$449	$44	$669	0.5%
New Jersey	$582	$2,734	$259	$3,576	0.4%
New Mexico	$350	$722	$90	$1,162	0.7%
New York	$1,790	$6,260	$559	$8,610	0.4%
North Carolina	$2,141	$3,318	$375	$5,834	0.6%
North Dakota	$765	$731	$68	$1,563	1.5%
Ohio	$2,941	$5,555	$419	$8,915	0.7%
Oklahoma	$1,070	$2,093	$192	$3,355	0.9%
Oregon	$1,587	$1,908	$290	$3,786	0.9%
Pennsylvania	$1,712	$4,679	$358	$6,749	0.5%
Rhode Island	$70	$257	$21	$348	0.3%
South Carolina	$427	$1,242	$151	$1,820	0.4%
South Dakota	$229	$353	$51	$633	0.6%
Tennessee	$898	$2,150	$269	$3,318	0.5%
Texas	$4,963	$14,706	$1,100	$20,769	0.7%
Utah	$1,087	$1,483	$128	$2,697	0.9%
Vermont	$362	$300	$25	$687	1.1%
Virginia	$948	$2,264	$238	$3,450	0.4%
Washington	$2,773	$3,742	$463	$6,978	0.8%
West Virginia	$668	$633	$47	$1,348	0.9%
Wisconsin	$1,082	$2,213	$325	$3,621	0.6%
Wyoming	$119	$416	$42	$577	0.8%
U.S. Total	**$90,087**	**$142,141**	**$14,589**	**$246,816**	**0.7%**

Details may not sum to totals due to rounding.

Table 9b. General Aviation's Output Impact by State, in $ Millions, 2018

Sorted by Total Output Impact

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Output
California	$11,042	$19,603	$2,148	$32,793	0.7%
Florida	$4,963	$14,706	$1,100	$20,769	1.0%
Georgia	$6,845	$8,879	$1,348	$17,073	1.4%
Texas	$8,212	$5,668	$437	$14,317	0.7%
New York	$6,141	$3,211	$192	$9,544	0.4%
Ohio	$2,788	$5,789	$494	$9,071	0.7%
Kansas	$2,941	$5,555	$419	$8,915	2.8%
Pennsylvania	$1,790	$6,260	$559	$8,610	0.5%
Illinois	$4,070	$3,784	$458	$8,312	0.6%
Washington	$3,415	$3,432	$307	$7,154	0.8%
North Carolina	$2,773	$3,742	$463	$6,978	0.6%
Minnesota	$1,712	$4,679	$358	$6,749	1.1%
Colorado	$2,141	$3,318	$375	$5,834	0.7%
Massachusetts	$3,267	$2,377	$177	$5,820	0.4%
Arizona	$3,023	$2,543	$100	$5,667	1.5%
Connecticut	$1,430	$3,231	$332	$4,993	1.3%
Michigan	$1,881	$2,815	$242	$4,938	0.5%
Indiana	$1,407	$2,615	$346	$4,367	0.7%
Iowa	$891	$2,961	$201	$4,054	1.5%
Oregon	$1,587	$1,908	$290	$3,786	0.9%
Wisconsin	$1,502	$1,875	$382	$3,759	0.6%
Alabama	$914	$2,457	$267	$3,638	0.8%
New Jersey	$1,082	$2,213	$325	$3,621	0.4%
Virginia	$582	$2,734	$259	$3,576	0.4%
Arkansas	$948	$2,264	$238	$3,450	1.0%
Louisiana	$1,070	$2,093	$192	$3,355	0.8%
Oklahoma	$898	$2,150	$269	$3,318	0.9%
Missouri	$1,087	$1,483	$128	$2,697	0.4%
Utah	$577	$1,813	$216	$2,605	0.9%
Tennessee	$1,092	$1,336	$169	$2,597	0.5%
Kentucky	$759	$1,163	$154	$2,077	0.5%
Mississippi	$421	$1,502	$135	$2,058	0.8%
South Carolina	$458	$1,408	$169	$2,035	0.4%
Maryland	$427	$1,242	$151	$1,820	0.3%
Idaho	$586	$899	$117	$1,603	1.0%
Montana	$765	$731	$68	$1,563	1.1%
Nevada	$446	$902	$124	$1,471	0.6%
Alaska	$621	$689	$148	$1,459	1.5%
New Mexico	$668	$633	$47	$1,348	0.7%
North Dakota	$469	$666	$134	$1,269	1.5%
Nebraska	$350	$722	$90	$1,162	0.7%
West Virginia	$348	$602	$87	$1,037	0.9%
Maine	$290	$538	$51	$879	0.7%
New Hampshire	$276	$439	$64	$779	0.5%
Hawaii	$362	$300	$25	$687	0.6%
South Dakota	$176	$449	$44	$669	0.6%
District of Columbia	$229	$353	$51	$633	0.3%
Wyoming	$119	$416	$42	$577	0.8%
Vermont	$106	$401	$28	$535	1.1%
Delaware	$68	$333	$46	$447	0.5%
Rhode Island	$70	$257	$21	$348	0.3%
U.S. Total	**$90,087**	**$142,141**	**$14,589**	**$246,816**	**0.7%**

Details may not sum to totals due to rounding.

Table 9c. General Aviation's Output Impact by State, in $ Millions, 2018

Sorted by Total Output Impact as a Percent of Total State Output

State	Direct	Indirect & Induced	Enabled	Total	Percent of State Output
Kansas	$2,941	$5,555	$419	$8,915	2.8%
Alaska	$621	$689	$148	$1,459	1.5%
North Dakota	$469	$666	$134	$1,269	1.5%
Iowa	$891	$2,961	$201	$4,054	1.5%
Arizona	$3,023	$2,543	$100	$5,667	1.5%
Georgia	$6,845	$8,879	$1,348	$17,073	1.4%
Connecticut	$1,430	$3,231	$332	$4,993	1.3%
Vermont	$106	$401	$28	$535	1.1%
Minnesota	$1,712	$4,679	$358	$6,749	1.1%
Montana	$765	$731	$68	$1,563	1.1%
Florida	$4,963	$14,706	$1,100	$20,769	1.0%
Arkansas	$948	$2,264	$238	$3,450	1.0%
Idaho	$586	$899	$117	$1,603	1.0%
Oregon	$1,587	$1,908	$290	$3,786	0.9%
West Virginia	$348	$602	$87	$1,037	0.9%
Oklahoma	$898	$2,150	$269	$3,318	0.9%
Utah	$577	$1,813	$216	$2,605	0.9%
Mississippi	$421	$1,502	$135	$2,058	0.8%
Alabama	$914	$2,457	$267	$3,638	0.8%
Louisiana	$1,070	$2,093	$192	$3,355	0.8%
Washington	$3,415	$3,432	$307	$7,154	0.8%
Wyoming	$119	$416	$42	$577	0.8%
California	$11,042	$19,603	$2,148	$32,793	0.7%
Colorado	$2,141	$3,318	$375	$5,834	0.7%
Ohio	$2,788	$5,789	$494	$9,071	0.7%
Texas	$8,212	$5,668	$437	$14,317	0.7%
Maine	$290	$538	$51	$879	0.7%
Nebraska	$350	$722	$90	$1,162	0.7%
New Mexico	$668	$633	$47	$1,348	0.7%
Indiana	$1,407	$2,615	$346	$4,367	0.7%
South Dakota	$176	$449	$44	$669	0.6%
Illinois	$4,070	$3,784	$458	$8,312	0.6%
Hawaii	$362	$300	$25	$687	0.6%
North Carolina	$2,773	$3,742	$463	$6,978	0.6%
Nevada	$446	$902	$124	$1,471	0.6%
Wisconsin	$1,502	$1,875	$382	$3,759	0.6%
Pennsylvania	$1,790	$6,260	$559	$8,610	0.5%
Michigan	$1,881	$2,815	$242	$4,938	0.5%
Tennessee	$1,092	$1,336	$169	$2,597	0.5%
Delaware	$68	$333	$46	$447	0.5%
New Hampshire	$276	$439	$64	$779	0.5%
Kentucky	$759	$1,163	$154	$2,077	0.5%
Missouri	$1,087	$1,483	$128	$2,697	0.4%
Massachusetts	$3,267	$2,377	$177	$5,820	0.4%
Virginia	$582	$2,734	$259	$3,576	0.4%
South Carolina	$458	$1,408	$169	$2,035	0.4%
New Jersey	$1,082	$2,213	$325	$3,621	0.4%
New York	$6,141	$3,211	$192	$9,544	0.4%
Rhode Island	$70	$257	$21	$348	0.3%
Maryland	$427	$1,242	$151	$1,820	0.3%
District of Columbia	$229	$353	$51	$633	0.3%
U.S. Total	**$90,087**	**$142,141**	**$14,589**	**$246,816**	**0.7%**

Details may not sum to totals due to rounding.

Table 10a. General Aviation's GDP Impact by State, in $ Millions, 2018

Sorted Alphabetically

State	Direct	Indirect & Induced	Enabled	Total	Percent of State GDP
Alabama	$600	$909	$201	$1,711	0.8%
Alaska	$212	$432	$82	$726	1.3%
Arizona	$1,893	$2,143	$270	$4,306	1.2%
Arkansas	$444	$652	$84	$1,180	0.9%
California	$5,888	$11,287	$1,345	$18,520	0.6%
Colorado	$781	$1,524	$206	$2,510	0.7%
Connecticut	$1,399	$1,587	$65	$3,051	1.1%
Delaware	$45	$230	$17	$293	0.4%
District of Columbia	$41	$248	$34	$322	0.2%
Florida	$3,159	$5,009	$808	$8,977	0.9%
Georgia	$2,672	$3,186	$246	$6,103	1.0%
Hawaii	$170	$292	$33	$495	0.5%
Idaho	$256	$347	$79	$682	0.9%
Illinois	$1,493	$3,224	$301	$5,018	0.6%
Indiana	$788	$1,355	$128	$2,271	0.6%
Iowa	$1,622	$1,272	$89	$2,983	1.6%
Kansas	$1,946	$1,638	$100	$3,684	2.2%
Kentucky	$221	$655	$91	$967	0.5%
Louisiana	$479	$1,235	$113	$1,827	0.7%
Maine	$136	$226	$37	$399	0.6%
Maryland	$241	$918	$85	$1,244	0.3%
Massachusetts	$433	$1,484	$171	$2,087	0.4%
Michigan	$667	$1,653	$185	$2,505	0.5%
Minnesota	$1,455	$1,856	$173	$3,485	0.9%
Mississippi	$258	$493	$80	$830	0.7%
Missouri	$292	$927	$114	$1,333	0.4%
Montana	$151	$258	$47	$456	0.9%
Nebraska	$301	$474	$60	$835	0.7%
Nevada	$265	$527	$77	$869	0.5%
New Hampshire	$94	$254	$27	$375	0.4%
New Jersey	$352	$1,591	$160	$2,103	0.3%
New Mexico	$170	$393	$49	$612	0.6%
New York	$961	$4,108	$378	$5,446	0.3%
North Carolina	$1,182	$1,818	$208	$3,209	0.6%
North Dakota	$289	$402	$36	$727	1.3%
Ohio	$1,460	$2,969	$228	$4,657	0.7%
Oklahoma	$407	$1,153	$105	$1,665	0.8%
Oregon	$972	$1,119	$171	$2,262	0.9%
Pennsylvania	$731	$2,642	$205	$3,578	0.5%
Rhode Island	$44	$148	$13	$204	0.3%
South Carolina	$210	$610	$83	$903	0.4%
South Dakota	$99	$181	$27	$306	0.6%
Tennessee	$464	$1,123	$153	$1,740	0.5%
Texas	$2,476	$7,702	$632	$10,810	0.6%
Utah	$461	$738	$68	$1,267	0.7%
Vermont	$120	$161	$14	$294	0.9%
Virginia	$476	$1,329	$140	$1,945	0.4%
Washington	$1,476	$2,051	$298	$3,824	0.7%
West Virginia	$229	$332	$25	$587	0.8%
Wisconsin	$555	$1,128	$169	$1,852	0.6%
Wyoming	$48	$186	$23	$258	0.7%
U.S. Total	**$41,585**	**$78,175**	**$8,533**	**$128,292**	**0.6%**

Details may not sum to totals due to rounding.

Table 10b. General Aviation's GDP Impact by State, in $ Millions, 2018

Sorted by Total GDP Impact

State	Direct	Indirect & Induced	Enabled	Total	Percent of State GDP
California	$5,888	$11,287	$1,345	$18,520	0.6%
Florida	$2,476	$7,702	$632	$10,810	0.9%
Texas	$3,159	$5,009	$808	$8,977	0.6%
Georgia	$2,672	$3,186	$246	$6,103	1.0%
New York	$961	$4,108	$378	$5,446	0.3%
Ohio	$1,493	$3,224	$301	$5,018	0.7%
North Carolina	$1,460	$2,969	$228	$4,657	0.6%
Illinois	$1,893	$2,143	$270	$4,306	0.6%
Pennsylvania	$1,476	$2,051	$298	$3,824	0.5%
Kansas	$1,946	$1,638	$100	$3,684	2.2%
Minnesota	$731	$2,642	$205	$3,578	0.9%
Washington	$1,455	$1,856	$173	$3,485	0.7%
Michigan	$1,182	$1,818	$208	$3,209	0.5%
Arizona	$1,399	$1,587	$65	$3,051	1.2%
Oregon	$1,622	$1,272	$89	$2,983	0.9%
Connecticut	$781	$1,524	$206	$2,510	1.1%
Indiana	$667	$1,653	$185	$2,505	0.6%
Alabama	$788	$1,355	$128	$2,271	0.8%
Wisconsin	$972	$1,119	$171	$2,262	0.6%
Virginia	$352	$1,591	$160	$2,103	0.4%
Colorado	$433	$1,484	$171	$2,087	0.7%
Massachusetts	$476	$1,329	$140	$1,945	0.4%
New Jersey	$555	$1,128	$169	$1,852	0.3%
Iowa	$479	$1,235	$113	$1,827	1.6%
Tennessee	$464	$1,123	$153	$1,740	0.5%
Arkansas	$600	$909	$201	$1,711	0.9%
Louisiana	$407	$1,153	$105	$1,665	0.7%
Missouri	$292	$927	$114	$1,333	0.4%
Kentucky	$461	$738	$68	$1,267	0.5%
Utah	$241	$918	$85	$1,244	0.7%
Oklahoma	$444	$652	$84	$1,180	0.8%
South Carolina	$221	$655	$91	$967	0.4%
Maryland	$210	$610	$83	$903	0.3%
Mississippi	$265	$527	$77	$869	0.7%
Nebraska	$301	$474	$60	$835	0.7%
Idaho	$258	$493	$80	$830	0.9%
Nevada	$212	$432	$82	$726	0.5%
Montana	$289	$402	$36	$727	0.9%
Alaska	$256	$347	$79	$682	1.3%
North Dakota	$170	$393	$49	$612	1.3%
West Virginia	$229	$332	$25	$587	0.8%
New Mexico	$170	$292	$33	$495	0.6%
Maine	$151	$258	$47	$456	0.6%
New Hampshire	$136	$226	$37	$399	0.4%
Hawaii	$94	$254	$27	$375	0.5%
Delaware	$41	$248	$34	$322	0.4%
District of Columbia	$99	$181	$27	$306	0.2%
South Dakota	$120	$161	$14	$294	0.6%
Vermont	$45	$230	$17	$293	0.9%
Wyoming	$48	$186	$23	$258	0.7%
Rhode Island	$44	$148	$13	$204	0.3%
U.S. Total	**$41,585**	**$78,175**	**$8,533**	**$128,292**	**0.6%**

Details may not sum to totals due to rounding.

Table 10c. General Aviation's GDP Impact by State, in $ Millions, 2018

Sorted by Total GDP Impact as a Percent of State Total GDP

State	Direct	Indirect & Induced	Enabled	Total	Percent of State GDP
Kansas	$1,946	$1,638	$100	$3,684	2.2%
Iowa	$479	$1,235	$113	$1,827	1.6%
Alaska	$256	$347	$79	$682	1.3%
North Dakota	$170	$393	$49	$612	1.3%
Arizona	$1,399	$1,587	$65	$3,051	1.2%
Connecticut	$781	$1,524	$206	$2,510	1.1%
Georgia	$2,672	$3,186	$246	$6,103	1.0%
Minnesota	$731	$2,642	$205	$3,578	0.9%
Oregon	$1,622	$1,272	$89	$2,983	0.9%
Arkansas	$600	$909	$201	$1,711	0.9%
Montana	$289	$402	$36	$727	0.9%
Vermont	$45	$230	$17	$293	0.9%
Idaho	$258	$493	$80	$830	0.9%
Florida	$2,476	$7,702	$632	$10,810	0.9%
Oklahoma	$444	$652	$84	$1,180	0.8%
Alabama	$788	$1,355	$128	$2,271	0.8%
West Virginia	$229	$332	$25	$587	0.8%
Mississippi	$265	$527	$77	$869	0.7%
Utah	$241	$918	$85	$1,244	0.7%
Louisiana	$407	$1,153	$105	$1,665	0.7%
Ohio	$1,493	$3,224	$301	$5,018	0.7%
Washington	$1,455	$1,856	$173	$3,485	0.7%
Colorado	$433	$1,484	$171	$2,087	0.7%
Nebraska	$301	$474	$60	$835	0.7%
Wyoming	$48	$186	$23	$258	0.7%
Indiana	$667	$1,653	$185	$2,505	0.6%
California	$5,888	$11,287	$1,345	$18,520	0.6%
Maine	$151	$258	$47	$456	0.6%
New Mexico	$170	$292	$33	$495	0.6%
Texas	$3,159	$5,009	$808	$8,977	0.6%
South Dakota	$120	$161	$14	$294	0.6%
Illinois	$1,893	$2,143	$270	$4,306	0.6%
North Carolina	$1,460	$2,969	$228	$4,657	0.6%
Wisconsin	$972	$1,119	$171	$2,262	0.6%
Hawaii	$94	$254	$27	$375	0.5%
Nevada	$212	$432	$82	$726	0.5%
Tennessee	$464	$1,123	$153	$1,740	0.5%
Michigan	$1,182	$1,818	$208	$3,209	0.5%
Kentucky	$461	$738	$68	$1,267	0.5%
Pennsylvania	$1,476	$2,051	$298	$3,824	0.5%
New Hampshire	$136	$226	$37	$399	0.4%
Missouri	$292	$927	$114	$1,333	0.4%
Delaware	$41	$248	$34	$322	0.4%
South Carolina	$221	$655	$91	$967	0.4%
Massachusetts	$476	$1,329	$140	$1,945	0.4%
Virginia	$352	$1,591	$160	$2,103	0.4%
New Jersey	$555	$1,128	$169	$1,852	0.3%
Rhode Island	$44	$148	$13	$204	0.3%
New York	$961	$4,108	$378	$5,446	0.3%
Maryland	$210	$610	$83	$903	0.3%
District of Columbia	$99	$181	$27	$306	0.2%
U.S. Total	**$41,585**	**$78,175**	**$8,533**	**$128,292**	**0.6%**

Details may not sum to totals due to rounding.

Table 11a. General Aviation's Per Capita GDP Impact by State, 2018
Sorted Alphabetically

State	Total Impact ($ millions)	Per Capita ($)
Alabama	$1,711	$350
Alaska	$726	$988
Arizona	$4,306	$602
Arkansas	$1,180	$392
California	$18,520	$469
Colorado	$2,510	$441
Connecticut	$3,051	$854
Delaware	$293	$303
District of Columbia	$322	$460
Florida	$8,977	$423
Georgia	$6,103	$581
Hawaii	$495	$348
Idaho	$682	$390
Illinois	$5,018	$394
Indiana	$2,271	$339
Iowa	$2,983	$947
Kansas	$3,684	$1,265
Kentucky	$967	$217
Louisiana	$1,827	$392
Maine	$399	$298
Maryland	$1,244	$206
Massachusetts	$2,087	$303
Michigan	$2,505	$251
Minnesota	$3,485	$622
Mississippi	$830	$279
Missouri	$1,333	$218
Montana	$456	$430
Nebraska	$835	$434
Nevada	$869	$287
New Hampshire	$375	$277
New Jersey	$2,103	$237
New Mexico	$612	$292
New York	$5,446	$279
North Carolina	$3,209	$309
North Dakota	$727	$959
Ohio	$4,657	$399
Oklahoma	$1,665	$422
Oregon	$2,262	$541
Pennsylvania	$3,578	$279
Rhode Island	$204	$193
South Carolina	$903	$178
South Dakota	$306	$348
Tennessee	$1,740	$257
Texas	$10,810	$378
Utah	$1,267	$402
Vermont	$294	$472
Virginia	$1,945	$229
Washington	$3,824	$508
West Virginia	$587	$325
Wisconsin	$1,852	$319
Wyoming	$258	$447
U.S. Total	**$128,292**	**$393**

Table 11b. General Aviation's Per Capita GDP Impact by State, 2018

Sorted by Per Capita GDP Impact

State	Total Impact ($ millions)	Per Capita ($)
Kansas	$3,684	$1,265
Alaska	$726	$988
North Dakota	$727	$959
Iowa	$2,983	$947
Connecticut	$3,051	$854
Minnesota	$3,485	$622
Arizona	$4,306	$602
Georgia	$6,103	$581
Oregon	$2,262	$541
Washington	$3,824	$508
Vermont	$294	$472
California	$18,520	$469
District of Columbia	$322	$460
Wyoming	$258	$447
Colorado	$2,510	$441
Nebraska	$835	$434
Montana	$456	$430
Oklahoma	$1,665	$422
Florida	$8,977	$423
Utah	$1,267	$402
Ohio	$4,657	$399
Illinois	$5,018	$394
Louisiana	$1,827	$392
Arkansas	$1,180	$392
Idaho	$682	$390
Texas	$10,810	$378
Alabama	$1,711	$350
South Dakota	$306	$348
Hawaii	$495	$348
Indiana	$2,271	$339
West Virginia	$587	$325
Wisconsin	$1,852	$319
North Carolina	$3,209	$309
Massachusetts	$2,087	$303
Delaware	$293	$303
Maine	$399	$298
New Mexico	$612	$292
Nevada	$869	$287
Pennsylvania	$3,578	$279
New York	$5,446	$279
Mississippi	$830	$279
New Hampshire	$375	$277
Tennessee	$1,740	$257
Michigan	$2,505	$251
New Jersey	$2,103	$237
Virginia	$1,945	$229
Missouri	$1,333	$218
Kentucky	$967	$217
Maryland	$1,244	$206
Rhode Island	$204	$193
South Carolina	$903	$178
U.S. Total	**$128,292**	**$393**

Table 12a. General Aviation's Per Capita Output Impact by State, 2018
Sorted Alphabetically

State	Total Impact ($ millions)	Per Capita ($)
Alabama	$3,759	$769
Alaska	$1,269	$1,726
Arizona	$8,312	$1,161
Arkansas	$2,597	$863
California	$32,793	$831
Colorado	$4,367	$767
Connecticut	$5,667	$1,587
Delaware	$535	$555
District of Columbia	$447	$638
Florida	$17,073	$804
Georgia	$14,317	$1,362
Hawaii	$879	$619
Idaho	$1,459	$833
Illinois	$9,071	$713
Indiana	$4,938	$737
Iowa	$5,820	$1,848
Kansas	$9,544	$3,278
Kentucky	$2,035	$456
Louisiana	$4,054	$870
Maine	$779	$582
Maryland	$2,058	$341
Massachusetts	$3,638	$529
Michigan	$4,993	$500
Minnesota	$7,154	$1,276
Mississippi	$2,077	$697
Missouri	$2,605	$426
Montana	$1,037	$978
Nebraska	$1,603	$832
Nevada	$1,471	$486
New Hampshire	$669	$495
New Jersey	$3,576	$402
New Mexico	$1,162	$555
New York	$8,610	$441
North Carolina	$5,834	$562
North Dakota	$1,563	$2,062
Ohio	$8,915	$764
Oklahoma	$3,355	$851
Oregon	$3,786	$905
Pennsylvania	$6,749	$527
Rhode Island	$348	$329
South Carolina	$1,820	$358
South Dakota	$633	$720
Tennessee	$3,318	$490
Texas	$20,769	$725
Utah	$2,697	$855
Vermont	$687	$1,100
Virginia	$3,450	$406
Washington	$6,978	$927
West Virginia	$1,348	$747
Wisconsin	$3,621	$623
Wyoming	$577	$999
U.S. Total	**$246,816**	**$756**

Table 12b. General Aviation's Per Capita Output Impact by State, 2018

Sorted by Per Capita Output Impact

State	Total Impact ($ millions)	Per Capita ($)
Kansas	$9,544	$3,278
North Dakota	$1,563	$2,062
Iowa	$5,820	$1,848
Alaska	$1,269	$1,726
Connecticut	$5,667	$1,587
Georgia	$14,317	$1,362
Minnesota	$7,154	$1,276
Arizona	$8,312	$1,161
Vermont	$687	$1,100
Wyoming	$577	$999
Montana	$1,037	$978
Washington	$6,978	$927
Oregon	$3,786	$905
Louisiana	$4,054	$870
Arkansas	$2,597	$863
Utah	$2,697	$855
Oklahoma	$3,355	$851
Idaho	$1,459	$833
Nebraska	$1,603	$832
California	$32,793	$831
Florida	$17,073	$804
Alabama	$3,759	$769
Colorado	$4,367	$767
Ohio	$8,915	$764
West Virginia	$1,348	$747
Indiana	$4,938	$737
Texas	$20,769	$725
South Dakota	$633	$720
Illinois	$9,071	$713
Mississippi	$2,077	$697
District of Columbia	$447	$638
Wisconsin	$3,621	$623
Hawaii	$879	$619
Maine	$779	$582
North Carolina	$5,834	$562
Delaware	$535	$555
New Mexico	$1,162	$555
Massachusetts	$3,638	$529
Pennsylvania	$6,749	$527
Michigan	$4,993	$500
New Hampshire	$669	$495
Tennessee	$3,318	$490
Nevada	$1,471	$486
Kentucky	$2,035	$456
New York	$8,610	$441
Missouri	$2,605	$426
Virginia	$3,450	$406
New Jersey	$3,576	$402
South Carolina	$1,820	$358
Maryland	$2,058	$341
Rhode Island	$348	$329
U.S. Total	**$246,816**	**$756**

Appendix A: State-by-State Summary

Table A-1. General Aviation's Contribution to Alabama's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	5,100	11,300	3,700	20,100	0.75%
Labor Income[2]	$371	$534	$113	$1,018	0.75%
Output	$1,502	$1,875	$382	$3,759	0.84%
Contribution to GDP	$600	$909	$201	$1,711	0.77%

Notes at the end of section.

Table A-2. General Aviation's Contribution to Alaska's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	2,100	3,000	1,200	6,400	1.39%
Labor Income[2]	$152	$192	$48	$393	1.24%
Output	$469	$666	$134	$1,269	1.53%
Contribution to GDP	$212	$432	$82	$726	1.33%

Notes at the end of section.

Table A-3. General Aviation's Contribution to Arizona's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	10,900	25,300	4,000	40,200	1.04%
Labor Income[2]	$1,117	$1,311	$152	$2,580	1.21%
Output	$4,070	$3,784	$458	$8,312	1.46%
Contribution to GDP	$1,893	$2,143	$270	$4,306	1.24%

Notes at the end of section.

Table A-4. General Aviation's Contribution to Arkansas's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	6,300	8,200	1,600	16,100	0.97%
Labor Income[2]	$250	$376	$46	$672	0.85%
Output	$1,092	$1,336	$169	$2,597	0.99%
Contribution to GDP	$444	$652	$84	$1,180	0.92%

Notes at the end of section.

Table A-5. General Aviation's Contribution to California's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	31,900	101,000	15,400	148,300	0.61%
Labor Income[2]	$3,756	$6,789	$804	$11,350	0.63%
Output	$11,042	$19,603	$2,148	$32,793	0.74%
Contribution to GDP	$5,888	$11,287	$1,345	$18,520	0.62%

Notes at the end of section.

Table A-6. General Aviation's Contribution to Colorado's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	4,400	15,500	2,800	22,700	0.59%
Labor Income[2]	$495	$981	$118	$1,594	0.67%
Output	$1,407	$2,615	$346	$4,367	0.73%
Contribution to GDP	$781	$1,524	$206	$2,510	0.68%

Notes at the end of section.

Table A-7. General Aviation's Contribution to Connecticut's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	7,500	14,100	700	22,300	0.96%
Labor Income[2]	$874	$1,019	$39	$1,932	1.10%
Output	$3,023	$2,543	$100	$5,667	1.29%
Contribution to GDP	$1,399	$1,587	$65	$3,051	1.11%

Notes at the end of section.

Table A-8. General Aviation's Contribution to Delaware's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	400	1,700	200	2,300	0.39%
Labor Income[2]	$47	$105	$9	$161	0.44%
Output	$106	$401	$28	$535	0.47%
Contribution to GDP	$45	$230	$17	$293	0.40%

Notes at the end of section.

Table A-9. General Aviation's Contribution to the District of Columbia's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	200	1,800	300	2,400	0.26%
Labor Income[2]	$30	$187	$22	$240	0.23%
Output	$68	$333	$46	$447	0.25%
Contribution to GDP	$41	$248	$34	$322	0.23%

Notes at the end of section.

Table A-10. General Aviation's Contribution to Florida's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	21,400	62,100	11,400	94,900	0.76%
Labor Income[2]	$1,999	$3,051	$450	$5,500	0.87%
Output	$6,845	$8,879	$1,348	$17,073	1.01%
Contribution to GDP	$3,159	$5,009	$808	$8,977	0.86%

Notes at the end of section.

Table A-11. General Aviation's Contribution to Georgia's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	17,400	35,800	3,500	56,700	0.90%
Labor Income[2]	$1,714	$1,910	$140	$3,764	1.06%
Output	$8,212	$5,668	$437	$14,317	1.42%
Contribution to GDP	$2,672	$3,186	$246	$6,103	1.03%

Notes at the end of section.

Table A-12. General Aviation's Contribution to Hawaii's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,000	3,100	400	4,500	0.48%
Labor Income[2]	$89	$162	$18	$268	0.48%
Output	$290	$538	$51	$879	0.62%
Contribution to GDP	$170	$292	$33	$495	0.53%

Notes at the end of section.

Table A-13. General Aviation's Contribution to Idaho's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	2,800	4,800	1,500	9,100	0.88%
Labor Income[2]	$155	$221	$45	$421	0.85%
Output	$621	$689	$148	$1,459	0.99%
Contribution to GDP	$256	$347	$79	$682	0.88%

Notes at the end of section.

Table A-14. General Aviation's Contribution to Illinois's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	8,100	30,500	3,200	41,800	0.53%
Labor Income[2]	$942	$1,883	$169	$2,994	0.57%
Output	$2,788	$5,789	$494	$9,071	0.63%
Contribution to GDP	$1,493	$3,224	$301	$5,018	0.58%

Notes at the end of section.

Table A-15. General Aviation's Contribution to Indiana's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	4,600	14,100	1,800	20,600	0.52%
Labor Income[2]	$432	$753	$72	$1,256	0.57%
Output	$1,881	$2,815	$242	$4,938	0.66%
Contribution to GDP	$788	$1,355	$128	$2,271	0.62%

Notes at the end of section.

Table A-16. General Aviation's Contribution to Iowa's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	8,200	15,100	1,400	24,700	1.18%
Labor Income[2]	$1,025	$726	$49	$1,801	1.64%
Output	$3,267	$2,377	$177	$5,820	1.50%
Contribution to GDP	$1,622	$1,272	$89	$2,983	1.57%

Notes at the end of section.

Table A-17. General Aviation's Contribution to Kansas's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	16,900	19,200	1,700	37,800	1.95%
Labor Income[2]	$1,155	$1,022	$57	$2,234	2.10%
Output	$6,141	$3,211	$192	$9,544	2.84%
Contribution to GDP	$1,946	$1,638	$100	$3,684	2.19%

Notes at the end of section.

Table A-18. General Aviation's Contribution to Kentucky's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,900	7,700	1,300	11,000	0.43%
Labor Income[2]	$167	$382	$51	$599	0.46%
Output	$458	$1,408	$169	$2,035	0.46%
Contribution to GDP	$221	$655	$91	$967	0.46%

Notes at the end of section.

Table A-19. General Aviation's Contribution to Louisiana's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	3,300	10,600	1,500	15,400	0.56%
Labor Income[2]	$316	$580	$58	$954	0.66%
Output	$891	$2,961	$201	$4,054	0.82%
Contribution to GDP	$479	$1,235	$113	$1,827	0.71%

Notes at the end of section.

Table A-20. General Aviation's Contribution to Maine's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,200	3,000	600	4,800	0.57%
Labor Income[2]	$51	$140	$22	$213	0.50%
Output	$276	$439	$64	$779	0.67%
Contribution to GDP	$136	$226	$37	$399	0.62%

Notes at the end of section.

Table A-21. General Aviation's Contribution to Maryland's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,500	9,500	900	11,900	0.32%
Labor Income[2]	$145	$558	$49	$752	0.29%
Output	$421	$1,502	$135	$2,058	0.33%
Contribution to GDP	$241	$918	$85	$1,244	0.30%

Notes at the end of section.

Table A-22. General Aviation's Contribution to Massachusetts's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	3,000	14,400	1,900	19,300	0.40%
Labor Income[2]	$269	$976	$105	$1,350	0.37%
Output	$914	$2,457	$267	$3,638	0.42%
Contribution to GDP	$433	$1,484	$171	$2,087	0.37%

Notes at the end of section.

Table A-23. General Aviation's Contribution to Michigan's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	5,000	19,100	2,500	26,600	0.46%
Labor Income[2]	$442	$1,029	$104	$1,574	0.48%
Output	$1,430	$3,231	$332	$4,993	0.49%
Contribution to GDP	$667	$1,653	$185	$2,505	0.48%

Notes at the end of section.

Table A-24. General Aviation's Contribution to Minnesota's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	8,700	19,200	2,400	30,300	0.80%
Labor Income[2]	$706	$1,156	$100	$1,962	0.84%
Output	$3,415	$3,432	$307	$7,154	1.09%
Contribution to GDP	$1,455	$1,856	$173	$3,485	0.94%

Notes at the end of section.

Table A-25. General Aviation's Contribution to Mississippi's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	3,100	6,400	1,500	10,900	0.68%
Labor Income[2]	$142	$270	$44	$456	0.65%
Output	$759	$1,163	$154	$2,077	0.85%
Contribution to GDP	$258	$493	$80	$830	0.72%

Notes at the end of section.

Table A-26. General Aviation's Contribution to Missouri's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	2,400	11,100	1,800	15,300	0.40%
Labor Income[2]	$163	$573	$67	$804	0.39%
Output	$577	$1,813	$216	$2,605	0.43%
Contribution to GDP	$292	$927	$114	$1,333	0.42%

Notes at the end of section.

Table A-27. General Aviation's Contribution to Montana's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,700	3,300	900	5,800	0.85%
Labor Income [2]	$77	$152	$28	$258	0.81%
Output	$348	$602	$87	$1,037	1.07%
Contribution to GDP	$151	$258	$47	$456	0.91%

Notes at the end of section.

Table A-28. General Aviation's Contribution to Nebraska's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	2,100	5,100	900	8,200	0.61%
Labor Income[2]	$140	$284	$34	$458	0.61%
Output	$586	$899	$117	$1,603	0.67%
Contribution to GDP	$301	$474	$60	$835	0.67%

Notes at the end of section.

Table A-29. General Aviation's Contribution to Nevada's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,500	6,200	1,000	8,700	0.47%
Labor Income[2]	$132	$310	$44	$486	0.49%
Output	$446	$902	$124	$1,471	0.58%
Contribution to GDP	$265	$527	$77	$869	0.51%

Notes at the end of section.

Table A-30. General Aviation's Contribution to New Hampshire's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	700	2,800	300	3,800	0.43%
Labor Income[2]	$57	$164	$16	$237	0.43%
Output	$176	$449	$44	$669	0.47%
Contribution to GDP	$94	$254	$27	$375	0.44%

Notes at the end of section.

Table A-31 General Aviation's Contribution to New Jersey's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,800	14,900	1,800	18,600	0.33%
Labor Income[2]	$217	$1,031	$99	$1,347	0.34%
Output	$582	$2,734	$259	$3,576	0.37%
Contribution to GDP	$352	$1,591	$160	$2,103	0.34%

Notes at the end of section.

Table A-32. General Aviation's Contribution to New Mexico's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,500	3,900	900	6,200	0.56%
Labor Income[2]	$91	$178	$27	$296	0.54%
Output	$350	$722	$90	$1,162	0.66%
Contribution to GDP	$170	$393	$49	$612	0.61%

Notes at the end of section.

Table A-33. General Aviation's Contribution to New York's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	5,900	33,900	3,400	43,200	0.34%
Labor Income[2]	$644	$2,512	$214	$3,369	0.34%
Output	$1,790	$6,260	$559	$8,610	0.37%
Contribution to GDP	$961	$4,108	$378	$5,446	0.33%

Notes at the end of section.

Table A-34. General Aviation's Contribution to North Carolina's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	7,600	20,500	3,000	31,100	0.51%
Labor Income[2]	$531	$1,062	$120	$1,713	0.51%
Output	$2,141	$3,318	$375	$5,834	0.60%
Contribution to GDP	$1,182	$1,818	$208	$3,209	0.57%

Notes at the end of section.

Table A-35. General Aviation's Contribution to North Dakota's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	2,900	3,800	600	7,400	1.27%
Labor Income[2]	$151	$226	$20	$397	1.20%
Output	$765	$731	$68	$1,563	1.52%
Contribution to GDP	$289	$402	$36	$727	1.30%

Notes at the end of section.

Table A-36. General Aviation's Contribution to Ohio's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	9,300	31,100	3,300	43,700	0.62%
Labor Income[2]	$1,103	$1,694	$131	$2,928	0.72%
Output	$2,941	$5,555	$419	$8,915	0.72%
Contribution to GDP	$1,460	$2,969	$228	$4,657	0.69%

Notes at the end of section.

Table A-37. General Aviation's Contribution to Oklahoma's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	3,800	10,500	1,700	16,000	0.68%
Labor Income[2]	$333	$591	$59	$983	0.78%
Output	$1,070	$2,093	$192	$3,355	0.90%
Contribution to GDP	$407	$1,153	$105	$1,665	0.82%

Notes at the end of section.

Table A-38. General Aviation's Contribution to Oregon's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	4,300	11,500	2,600	18,400	0.71%
Labor Income[2]	$414	$642	$101	$1,157	0.77%
Output	$1,587	$1,908	$290	$3,786	0.94%
Contribution to GDP	$972	$1,119	$171	$2,262	0.94%

Notes at the end of section.

Table A-39. General Aviation's Contribution to Pennsylvania's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	6,100	24,300	2,600	32,900	0.42%
Labor Income[2]	$502	$1,530	$127	$2,159	0.44%
Output	$1,712	$4,679	$358	$6,749	0.51%
Contribution to GDP	$731	$2,642	$205	$3,578	0.46%

Notes at the end of section.

Table A-40. General Aviation's Contribution to Rhode Island's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	200	1,600	200	2,000	0.31%
Labor Income[2]	$15	$90	$7	$112	0.30%
Output	$70	$257	$21	$348	0.34%
Contribution to GDP	$44	$148	$13	$204	0.34%

Notes at the end of section.

Table A-41. General Aviation's Contribution to South Carolina's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,700	7,700	1,200	10,600	0.37%
Labor Income[2]	$103	$366	$46	$515	0.36%
Output	$427	$1,242	$151	$1,820	0.41%
Contribution to GDP	$210	$610	$83	$903	0.39%

Notes at the end of section.

Table A-42. General Aviation's Contribution to South Dakota's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,100	2,300	400	3,800	0.62%
Labor Income[2]	$61	$111	$15	$187	0.60%
Output	$229	$353	$51	$633	0.64%
Contribution to GDP	$99	$181	$27	$306	0.59%

Notes at the end of section.

Table A-43. General Aviation's Contribution to Tennessee's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	3,500	12,600	2,100	18,200	0.44%
Labor Income[2]	$230	$708	$90	$1,027	0.44%
Output	$898	$2,150	$269	$3,318	0.48%
Contribution to GDP	$464	$1,123	$153	$1,740	0.48%

Notes at the end of section.

Table A-44. General Aviation's Contribution to Texas's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	16,600	65,400	8,100	90,100	0.51%
Labor Income[2]	$1,678	$4,324	$360	$6,361	0.58%
Output	$4,963	$14,706	$1,100	$20,769	0.68%
Contribution to GDP	$2,476	$7,702	$632	$10,810	0.60%

Notes at the end of section.

Table A-45. General Aviation's Contribution to Utah's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	2,900	8,600	1,100	12,600	0.61%
Labor Income[2]	$305	$430	$39	$774	0.72%
Output	$1,087	$1,483	$128	$2,697	0.86%
Contribution to GDP	$461	$738	$68	$1,267	0.71%

Notes at the end of section.

Table A-46. General Aviation's Contribution to Vermont's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,400	2,200	200	3,800	0.86%
Labor Income[2]	$102	$102	$8	$211	0.96%
Output	$362	$300	$25	$687	1.09%
Contribution to GDP	$120	$161	$14	$294	0.89%

Notes at the end of section.

Table A-47. General Aviation's Contribution to Virginia's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	3,200	14,700	1,900	19,800	0.37%
Labor Income[2]	$281	$831	$80	$1,191	0.35%
Output	$948	$2,264	$238	$3,450	0.42%
Contribution to GDP	$476	$1,329	$140	$1,945	0.36%

Notes at the end of section.

Table A-48. General Aviation's Contribution to Washington's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	7,800	18,700	3,400	29,800	0.65%
Labor Income[2]	$870	$1,195	$158	$2,222	0.68%
Output	$2,773	$3,742	$463	$6,978	0.82%
Contribution to GDP	$1,476	$2,051	$298	$3,824	0.68%

Notes at the end of section.

Table A-49. General Aviation's Contribution to West Virginia's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	1,700	3,500	400	5,600	0.62%
Labor Income[2]	$143	$165	$14	$323	0.70%
Output	$668	$633	$47	$1,348	0.93%
Contribution to GDP	$229	$332	$25	$587	0.76%

Notes at the end of section.

Table A-50. General Aviation's Contribution to Wisconsin's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	4,300	12,900	2,800	20,100	0.54%
Labor Income[2]	$289	$673	$98	$1,060	0.51%
Output	$1,082	$2,213	$325	$3,621	0.57%
Contribution to GDP	$555	$1,128	$169	$1,852	0.55%

Notes at the end of section.

Table A-51. General Aviation's Contribution to Wyoming's Economy, 2018
[Dollar Amounts in Millions]

Item	Direct	Indirect & Induced	Enabled	Total	Percent of State Economy
Employment (Jobs)[1]	600	1,500	400	2,400	0.60%
Labor Income[2]	$35	$87	$13	$135	0.61%
Output	$119	$416	$42	$577	0.80%
Contribution to GDP	$48	$186	$23	$258	0.66%

Notes at the end of section.

Source: PwC calculations using the IMPLAN modeling system.
Details may not sum to totals due to rounding.
(1) Employment is defined as the number of direct, indirect, and induced payroll and self-employed jobs, including part-time jobs.
(2) Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Appendix B: Data Sources and Methodology

This appendix describes the data sources and methodology used to derive the results for the study.

I. Industry Data

A. Manufacturing of General Aviation Aircraft and Components

General Aviation Aircraft Manufacturing

PwC received data on sales of new general aviation aircraft manufactured in the United States from GAMA, along with employment data for general aviation aircraft manufacturers by location of the manufacturing facility. These data were collected by GAMA through a survey of its membership and exclude the manufacture and sale of commercial and military aircraft. These data were supplemented with information from Dun & Bradstreet and other publicly available data sources.

The GAMA data cover piston airplanes, turboprop airplanes, business jets, and helicopters, but excludes certain non-member companies, manufacturers of experimental airplanes and aircraft kits and certain light-sport aircraft manufacturers. PwC developed a list of experimental and light-sport aircraft manufacturers and their principal business locations using the Experimental Aircraft Association (EAA)'s website, ByDanJohnson.com, and other sources. GAMA also provided a list of major general aviation aircraft manufacturers not included in their data. PwC then estimated sales and employment by location for each manufacturer using data from Dun & Bradstreet and other public sources.[22]

The estimates of employment and sales for experimental, light-sport, and certain non-GAMA aircraft manufacturers were combined with the GAMA data set to develop the state-level estimates of the employment and output in the aircraft manufacturing industry.

General Aviation Aircraft Component Manufacturing

As described above, GAMA collected data on employment by location from its member companies, including manufacturers of aircraft components and other suppliers to the general aviation industry.[23] This data was mapped to NAICS industries based on the provided description of each facility and consultation with GAMA. Employment in major non-GAMA aircraft component manufacturers by industry and location was estimated using Dun & Bradstreet and other publicly available sources.

[22] For companies that manufacture aircraft for the military, PwC used publicly available data (such as revenue shares from company annual reports) to adjust overall employment and sales to remove the portion attributable to military production.

[23] The GAMA data also includes employment at repairs and maintenance facilities as well as employment for certain service providers. Except for complete factory rebuilds, this employment is estimated in the economic impact of general aviation aircraft operations and maintenance and is excluded from our estimates of the direct impact from general aviation aircraft and component manufacturing.

The manufacture of aircraft components by first-tier suppliers to the general aviation aircraft manufacturing industry generally was mapped to one of three main industries[24]:

NAICS Code	Industry Name
336412	Aircraft engine and engine parts manufacturing
336413	Other aircraft parts and auxiliary equipment manufacturing
334511	Search, detection, navigation, guidance, aeronautical, and nautical system and instrument manufacturing (This sector includes the manufacture of avionics)

In some cases, a first-tier supplier may be manufacturing multiple types of components at the same facility or location. In such cases, we have mapped facilities to industries based on the primary activity at the location.

As above, the employment data were adjusted to remove the portion of employment related to production of components for commercial and military aircraft programs.[25] The facility-level employment data were then rolled up to the national and state-levels.

B. Operation and Maintenance of General Aviation Aircraft

In addition to aircraft and component manufacturing, general aviation creates economic impacts in the United States through the operation and maintenance of the general aviation fleet.

The starting point for estimating economic impact of the operation and maintenance of the general aviation fleet is estimates of the fleet size and flight hours. The Federal Aviation Administration (FAA) conducts an annual survey on general aviation and on-demand Part 135 aircraft activity. As part of this survey, the FAA gathers information on the types of aircraft in service, flight hours, purpose of use, and the states in which the aircraft are primarily used.

The FAA reports active fleet and flight hour data for 11 types of general aviation aircraft:

1. Single-engine piston airplanes,
2. Twin-engine piston airplanes,
3. Single-engine turboprop airplanes,
4. Twin-engine turboprop airplanes,
5. Turbojet-powered airplanes,
6. Piston-powered rotorcraft,
7. Single-engine turbine-powered rotorcraft
8. Twin-engine turbine-powered rotorcraft
9. Experimental aircraft,[26]
10. Special light-sport aircraft, and
11. Other aircraft.[27]

[24] A small number of the facilities of first-tier suppliers were mapped to other manufacturing industries. For example, manufacture of rubber tires for general aviation aircraft is mapped to NAICS 326211 (Tire manufacturing) and the manufacture of certain electrical systems (such as interior and exterior aircraft lighting) is mapped to NAICS 336320 (Motor vehicle electrical and electronic equipment manufacturing).
[25] Member companies were asked to provide only employment for general aviation programs. However, in some cases the facility description indicated it was production for military. Employment at these facilities was excluded from our estimates.
[26] Including amateur-built, exhibition, experimental light-sport, and other experimental aircraft.

The FAA also reports flight hours by reason for use. For general aviation, most of the flight hours (nearly 80 percent) fall into three use types: (1) personal, (2) business (with or without a paid crew), and (3) instructional. Other uses of general aviation aircraft include agricultural and forestry applications, aerial observation and sight-seeing, non-Part 135 air medical services, and other work uses. On-demand Part 135 uses include air taxis, air tours, and air medical services.

From the 2018 General Aviation and Part 135 Activity Survey we obtained data on (1) the active fleet by type of aircraft and primary reason for use, and (2) flight hours by type of aircraft and primary reason for use. These data were combined with estimates of the average operating costs by type of aircraft and use to estimate total expenditures on operation and maintenance of general aviation aircraft in 2018.

The primary source of data on aircraft operating costs was the *Conklin & de Decker Report* (formerly known as the *Aircraft Cost Evaluator*) published by Conklin & de Decker. The *Conklin & de Decker Report* is a benchmarking tool used to compare the performance and operating costs of alternative aircraft models. The database includes information on the average variable cost per flight hour and the annual fixed costs for more than 500 aircraft models (see **Table B-1**, below).

Table B-1. Variable and Fixed Costs in Conklin & de Decker

Variable Costs Per Hour	Annual Fixed Costs
Fuel	Captain's salary (if any)
Fuel additives	Co-pilot's salary (if any)
Lubricants	Flight attendant's salary (if any)
Maintenance labor	Crew benefits (if any)
Parts	Typical hangar fees
Engine restoration	Hull insurance
Thrust reverser allowance (jets only)	Single limit liability insurance
Propeller allowance (turboprop and piston)	Recurrent training
Major periodic maintenance	Aircraft modernization
Auxiliary power unit allowance	Navigational chart service
Landing and parking fees	Refurbishing
Crew expenses (if any)	Computerized maintenance program
Supplies	Weather service

Note: Not all aircraft or aircraft use types will have all of these costs.
For more information and definitions for each type of operational cost see the sample report at: https://www.conklindd.com/p-33-aircraft-cost-evaluator.aspx.

Conklin & de Decker does not provide cost data for experimental and special light-sport aircraft.

For experimental aircraft, the Experimental Aircraft Association (EAA) provided a list of piston aircraft models that would have similar cost profiles to the majority of experimental aircraft types. These models were used as a proxy to determine the operating costs for experimental and special light-sport aircraft. Because detailed cost data were not available for gliders and lighter-than-air, they were excluded from our estimates. Such aircraft accounted for just 0.51 percent of all general aviation flight hours in 2018.

Using data on the number of active aircraft of each model from the FAA registry[28] and JETNET LLC,[29] PwC developed weighted-average cost profiles for each type of aircraft. For each type of aircraft, PwC

[27] Including gliders and lighter-than-air.
[28] The FAA registry can be accessed online at: http://registry.faa.gov/aircraftinquiry/acftref_inquiry.aspx.
[29] JETNET's *Evolution Aerodex* includes, among other things, estimates of the active fleet by make and model for turboprop and jet-powered airplanes.

developed four cost profiles based on the primary use of the aircraft (as defined by the FAA reason for use categories). Broadly speaking these four cost profiles are as follows:

1. *Personal* – Operation of general aviation aircraft for personal/recreational reasons. It is assumed that personal flights do not have a paid crew and that personal use aircraft incur a tie-down fee rather than hangar charges.[30]

2. *Business without a paid professional crew* – Operation of general aviation aircraft for business transportation without a paid, professional flight crew.

3. *Business with a paid professional crew* – Operation of general aviation aircraft for business purposes with a paid, professional flight crew.

4. *Other* – Operation of general aviation aircraft for all other purposes with a paid professional pilot and no other crew.

Table B-2, below, provides a crosswalk between the FAA and Conklin & de Decker aircraft use categories.

[30] The later assumption is conservative because many personal use aircraft are stored in hangars. We have assumed that personal use jets incur hangar fees, while all other personal use aircraft incur tie-down charges. We have estimated an average national tie-down fee of $1,500 per year for single-engine aircraft and $2,000 per year for twin-engine.

Table B-2. Weighted-Average Cost Profiles by FAA Use Category

FAA Use Type	PwC Cost Profile	Definition
General Aviation:		
Personal	Personal	Conklin & de Decker business-use costs, remove pilot and crew costs, replace hangar costs with average tie-down
Business without a paid professional crew	Business without a paid crew	Conklin & de Decker business-use costs
Business with a paid professional crew	Business with a paid crew	Conklin & de Decker corporate-use costs
Instructional	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew (pilot cost used as proxy for flight instructor)
Aerial application in agriculture	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
Aerial observation	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
Other aerial application	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
External load	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
Other work use	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
Sight-seeing	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
Non-Part 135 air medical services	Business with a paid crew	Conklin & de Decker corporate-use costs
Other	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
On-Demand Part 135 Use		
Air taxi	Business with a paid crew	Conklin & de Decker corporate-use costs
Air tours	Other	Conklin & de Decker corporate-use costs with pilot but no other paid crew
Air medical services	Business with a paid crew	Conklin & de Decker corporate-use costs

For each aircraft type and use category, weighted average variable costs were multiplied by the total number of flight hours from the FAA data. Similarly, annual fixed costs were multiplied by the FAA's estimate of the active fleet. For these calculations, it was assumed that all experimental and light-sport aircraft are for personal use.

The results were aggregated to derive estimates of total operating expenditures by detailed cost type at the national level. Operating expenditures were allocated across the states based on data on take-offs and landings for general aviation flights from the FAA's Terminal Area Forecast.

II. Quantifying General Aviation's Indirect and Induced Economic Impacts

The initial round of output, income, and employment generated by general aviation leads to successive rounds of re-spending throughout its supply chain. The "multiplier" impact of general aviation activity is measured using input-output models developed by the IMPLAN Group, which are widely used by government, academics, and private-sector researchers. The IMPLAN model measures indirect impacts (attributable to an industry's upstream supply chain) and induced impacts (attributable to expenditures from payrolls of employees in the industry and its supply chain).

Using the IMPLAN model, PwC separately quantified the indirect and induced impacts attributable to general aviation aircraft and component manufacturing and general aviation flight operations.

General Aviation Aircraft and Component Manufacturing

Based on general aviation aircraft manufacturing sales and employment data from GAMA, IMPLAN can estimate its indirect and induced impacts. The indirect impact falls on aircraft engines, parts, avionics, and non-component suppliers. We then estimated the indirect and induced impacts of the first-tier component manufacturers based on general aviation component manufacturing data from GAMA. Finally, we combined the two sets of estimates. The final estimate of the total impact of general aviation aircraft and component manufacturing consists of

(1) Direct impact from general aviation aircraft manufacturing;
(2) Indirect and induced impacts from non-component suppliers to general aviation aircraft manufacturing; and
(3) Direct, indirect, and induced impacts from first-tier general aviation component manufacturing.

General Aviation Operations and Maintenance

For general aviation flight operations and maintenance, based on the cost profiles identified in **Table B-1**, we used the IMPLAN model to estimate the indirect impact attributable to flight crews and fixed-base operators or FBOs. The indirect impact estimate is calibrated to reflect the spending on first-tier suppliers (such as fuel costs and flight training). Income earned by flight crews and employees of FBOs and their supply chain was used in the IMPLAN model to estimate the induced impact attributable to general aviation flight operations and maintenance.

For this study, PwC customized IMPLAN input-output models for the national economy and each state to calculate general aviation's indirect and induced economic impact in each study area in terms of employment, labor income, output, and GDP. The industry's direct impacts on labor income and GDP are also estimated using the IMPLAN, based on the average labor income and GDP for the closest sectors in the model that encompass the general aviation industry.

The state-level IMPLAN models do not capture indirect and induced effects that spill over state borders ("cross-state spillover effects"). Using the national-level IMPLAN model, we estimated the cross-state spillover effects and allocated them proportionally to each state.

III. General Aviation-Enabled Destination Visitor Expenditures

Travelers on general aviation flights provide additional economic benefits for the locations they visit in the form of spending on local goods and services. For example, a business traveler on a business aircraft may incur expenses for a hotel room, local meals, and miscellaneous expenditures. These traveler expenditures undergo a multiplier process similar to the manufacturing and operational impacts discussed above.

To estimate the economic impact resulting from general aviation traveler expenditures, PwC collected data on the general aviation operations at airports around the country.[31] For each airport with general aviation traffic, we obtained data on the airport's location (including city and state) and local and itinerant operations (defined as the sum of take-offs and landings). Local expenditures by visitors arriving on general aviation flights were estimated using a two-step process.

First, itinerant operations were divided by two to get the number of general aviation trips arriving at each airport. A September 2017 FAA study assumed that, in 2016, 40 percent of all itinerant general aviation flights carry overnight passengers and that the average number of passengers on such flights was approximately 2.84.[32]

Second, we obtained average government per diems for 2018 in each city or county with a general aviation airport in the US from the General Services Administration (GSA).[33] Separate per diems were obtained for meals and lodging. PwC used these per diems to estimate the total expenditure on meals and lodging in each locality assuming that travelers on general aviation flights stay an average of two nights.

Based on these assumptions, we estimate that nationwide general aviation visitor expenditures totaled nearly $5.5 billion in 2018. This estimate is likely to be conservative for several reasons. First, some business travelers have expenditures in excess of the maximum per diems allowed for federal employees. Second, travelers may make expenditures in addition to meals and lodging. Third, this approach only estimates visitor spending for overnight passengers, although travelers who arrive and depart on the same day also may incur expenses for meals and other items.

Estimates of general aviation destination visitor expenditures and state-level IMPLAN models were used to calculate the indirect and induced impacts associated with these expenditures.

[31] Data on general aviation operations (defined to be the sum of take-offs and landings) was obtained from the FAA's Terminal Area Forecast.
[32] Unpublished methodology for FAA, "The Economic Impact of Civil Aviation on the U.S. Economy: The Economic Impact of Civil Aviation by State." September 2017. Assumptions provided to PwC by the FAA in December 2019.
[33] The US General Services Administration publishes per diems for federal government travelers within the continental United States. The per diems can be found at https://www.gsa.gov/travel/plan-book/per-diem-rates.