

Missouri advantages for the aerospace manufacturing industry

The collective imagination and power of Missouri's aerospace industry is as limitless as the sky itself. The state's long history of leadership in military aircraft has helped to shape the industry through advances in materials, manufacturing, software and public safety. Research at Missouri universities, along with the resources at major aerospace players like Boeing and GKN, promise to take us higher, further, faster.

Boeing's F-15 Strike Eagle, manufactured in St. Louis, MO



The Missouri Partnership is a public-private economic development partnership recognized as a top economic development organization in the U.S. We work in partnership with the Hawthorn Foundation, the Missouri Department of Economic Development, the State of Missouri, and economic development agencies across the state. Learn more at www.missouripartnership.com.

Five reasons Missouri is right for aerospace manufacturing

1. Thriving industry: Missouri has a robust aerospace manufacturing sector. Missouri is a top 5 state for aerospace manufacturing attractiveness according to a 2016 report by PwC, and it is home to major companies such as Boeing, GKN Aerospace, LMI Aerospace and PAS Technologies. [Go to page 3.](#)

2. Quality workforce: Missouri's talented workers are ready for aerospace manufacturing.

In addition to having over 79,000 Missourians currently employed in aerospace and defense manufacturing jobs, Missouri grants 4,000 degrees in engineering related fields annually at nearly 140 degree-granting institutions and has numerous knowledge centers for the aerospace manufacturing industry around the state. [Go to page 9.](#)

3. Favorable environment: Missouri's business environment is suited for companies looking to lead the industry.

With some of the lowest taxes, energy rates and jet fuel prices in the country, Missouri is positioned to shape the future of the aerospace industry. [Go to page 15.](#)

4. Central location: Missouri's proximity to markets ensures quick access to customers and suppliers.

Missouri's central location provides efficient access to both coasts, as well as markets in Canada and Mexico. [Go to page 16.](#)

5. Solid infrastructure: Missouri's top-ranked transportation network is a dependable delivery system for goods and services.

Missouri lies at the heart of a vast transportation network with direct connections to domestic and foreign markets. [Go to page 17.](#)



Missouri has a robust aerospace manufacturing sector with the resources to support all kinds of businesses.

Missouri is a top 5 state for aerospace manufacturing attractiveness according to a 2016 report by PwC.

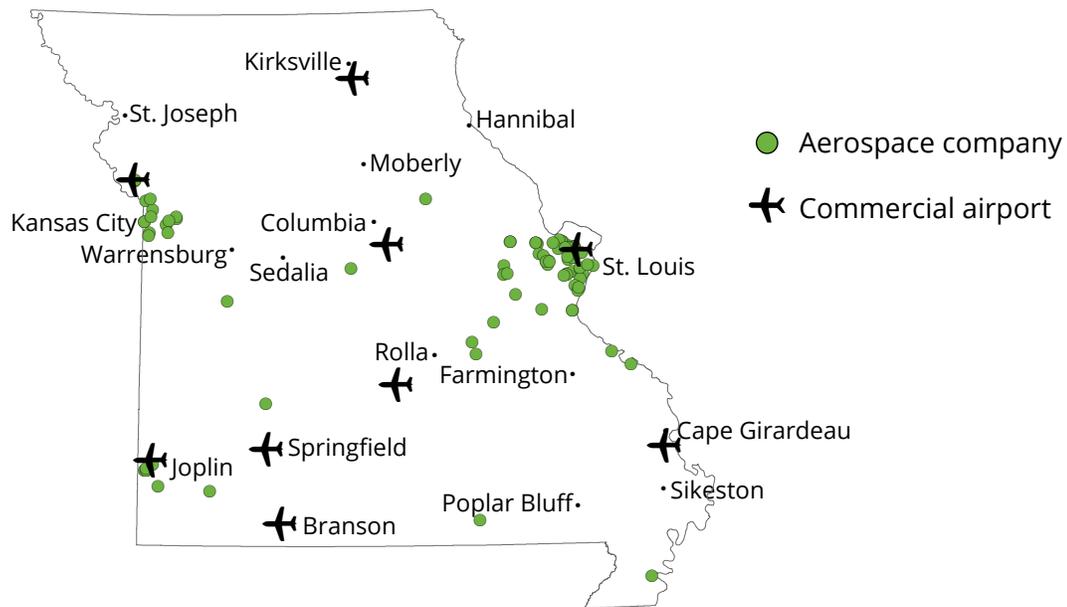
Major Missouri aerospace companies include Boeing, GKN Aerospace, LMI Aerospace, and PAS Technologies.

Boeing announced plans to bring up to 2,000 new jobs to Missouri over the next decade and part of a new 777x production line, representing the first time in company history that any commercial aerospace manufacturing will occur in Missouri.

Fortune 1000 manufacturers headquartered in Missouri in 2016 include: Emerson, Monsanto, Edgewell Personal Care, Leggett & Platt, Olin, and Belden.

Missouri's top international export products in 2015—which exceeded \$13.6 billion—were: transportation equipment, chemicals, machinery, food products, and electrical equipment (Source: *International Trade Administration*).

Manufacturing contributes nearly \$36 billion (12.8 percent) toward Missouri's gross state product of over \$279 billion (Source: *BEA, 2014*).



Missouri aerospace companies



Alcoa Titanium & Engineered Products (*Washington*) (formerly RTI Advanced Forming) provides super plastic formed (SPF) and hot-formed titanium components to the world's leading aerospace and military OEMs for a wide range of aircraft.



NEW Aviation Technical Services, (*Kansas City*) one of North America's largest third-party aircraft maintenance providers, recently announced plans to expand to Missouri, creating over 500 jobs in the next three to five years.



EXPANSION Boeing (*St. Louis*) announced plans to bring up to 2,000 new jobs to Missouri in 2013 and 2014. In 2014, Boeing revealed that a new production line for the 777x would be added in St. Louis and announced plans to bring an additional 500 jobs to St. Louis for service and support of the F-22 Raptor aircraft. In 2013, Boeing announced the creation of an information technology center in St. Louis, resulting in at least 400 new IT jobs, and also announced plans to add an additional 400 research and technology jobs. The company's Defense, Space & Security unit's approximately 15,000 area employees make military aircraft, missiles, airborne lasers, and Unmanned Combat Air Vehicles (UCAVs). F/A-18 Super Hornets and F-15 E Strike Eagles, mainstays of the Navy and Air Force, are designed and built in St. Louis. The unit is also NASA's prime contractor for the International Space Station and makes information and communications satellite systems. Boeing recently opened a new research laboratory in St. Charles to test hardware and software for drones and unmanned vehicles.



F/A-18 Hornet & Super Hornet



F-15E Strike Eagle



EA-18G Growler



Harpoon



Ducommun, (*Joplin and St. Louis*) previously known as Labarge, is a broad-based supplier of electronics to many industrial markets, including aerospace and defense. The company produces high temperature cable assemblies for use in jet engines that are installed in both military and commercial aircraft.



Essex Industries Inc. (*HQ St. Louis*) designs, develops and manufactures products for the defense and aerospace; commercial, private and sport aircraft industries. The company's products include aerospace and automotive valves, precision controls, and pilot flight/armament control grips.





GKN Aerospace (*St. Louis*) is a first-tier supplier of structures, components, assemblies and engineering services to aircraft and aero engine manufacturers, including Boeing.



Heizer Aerospace (*HQ Pevely*) specializes in large and complex airframe components for the aircraft/aerospace industry.



EXPANSION High Tech Solutions, LLC (*HQ Lee's Summit*) announced a \$14.4 million headquarters relocation and expansion project in 2016. The company plans to add a new 22,000 square foot building and equipment as well as 46 new employees.



EXPANSION LMI Aerospace (*HQ St. Charles*) recently announced plans to expand its machining operation in Washington, creating 60 new jobs over the next three years and making a \$17.5 million capital investment. LMI makes key airplane structures including door and cockpit window frames, wing leading-edge skins, fuselage skins, and interior components.



EXPANSION May Technology (*HQ Kansas City*) manufactures parts for the B-2 bomber and Boeing 777X airliner. In 2014, the company announced plans to nearly double its Kansas City operation, investing \$7 million in new equipment.



PAS Technologies (*HQ Kansas City*) provides maintenance, repair, and overhaul solutions for commercial and military OEMs in the oil and gas/ petrochemical, and industrial gas turbine markets.



Patriot Machine Inc. (*HQ St. Charles*) manufactures and supplies commercial and defense aerospace products including prototypes and production parts in aluminum and hard metal. The company's capabilities include deep pocket milling, complex closed-angled contoured features, precision holes of all orientations, sub-assembly and many more.



EXPANSION R&S Machining (*St. Louis*) recently broke ground on a new 40,000 square foot manufacturing facility, making a \$6 million investment that the company expects will include the creation of 10 to 15 new jobs. R & S manufactures aerospace components and does machining work for other industries.



Sabreliner Aviation (*HQ Perryville*) provides maintenance and repair services and parts for business jets and other older corporate and military aircraft.



Seyer Industries (*HQ St. Peters*) specializes in the development, manufacture, and aftermarket support of aerospace, maritime, and training products. The company's capabilities include CNC machining, mechanical and electrical assembly, painting, kitting and welding.



Triumph Structures (*Kansas City*) is a manufacturer of precision and extrusion machine parts and mechanical assemblies. The company serves clients in the aviation, aerospace, commercial and defense industries, including Boeing, Raytheon, Northrup Grumman.



Missouri aerospace manufacturing companies

Company Name	City	Employees	Sales
3323: Architectural and Structural Metals Manufacturing			
Mid-America Precision Products	Joplin	98	\$16,063,000
W-B Industries	O'Fallon	44	\$11,811,000
3327: Machine Shops			
Best Technologies	Kansas City	68	\$10,330,000
Computech Manufacturing Co	Washington	40	\$7,641,000
Austin Machine	O'Fallon	50	\$7,781,000
Brogdon Machine	Blue Springs	49	\$10,450,000
CNC Machine Products Inc	Joplin	80	\$11,561,000
Davlan Engineering Inc	St. Louis	50	\$7,437,000
High Tech Solutions LLC	Lee's Summit	25	\$5,720,000
Machine Laboratory	Chesterfield	70	\$10,411,000
Mastercraft Tool Co	Earth City	23	\$4,393,000
Planet Tool & Engineering	O'Fallon	50	\$7,781,000
Precision Prototyping & Mfg	St. Louis	20	\$3,463,000
R & S Machining	St. Louis	20	\$2,975,000
Steelville Manufacturing Co	Steelville	65	\$10,855,000
United Engineering Co	Pevely	99	\$18,913,000
3328: Coating, Engraving, Heat Treating, and Allied Activities			
Jet Midwest Technik	Kansas City	71	\$10,391,000
3329: Other Fabricated Metal Product Manufacturing			
Arnold Defense & Electronics	Arnold	28	\$5,171,000
Essex Industries Inc	St. Louis	30	\$7,500,000
3332: Industrial Machinery Manufacturing			
STROCO Mfg. Inc.	Hazelwood	25	\$8,500,000
3335: Metalworking Machinery Manufacturing			
Carr Lane Mfg Co	St. Louis	120	\$25,397,000
Homeyer Precision Mfg.	Marthasville	43	\$8,300,000
May Technology & Mfg. Inc.	Kansas City	65	\$15,300,000
Patterson Mold and Tool	St. Charles	70	N/A
Titanova, Inc.	St. Charles	7	\$1,300,000
U.S. Integrity Machine	Union	5	\$167,850
3341: Computer and Peripheral Equipment Manufacturing			
Westar Display Technologies	St. Charles	35	N/A

Company Name	City	Employees	Sales
3345: Navigational, Measuring, Electromedical, and Control Instruments Manufacturing			
DIT-MCO International Corp	Kansas City	110	\$21,253,000
Ducommun Labarge Technologies	Joplin	350	\$80,772,000
Ducommun Labarge Technologies	St. Louis	30	N/A
Dynic Labs Inc	St. Louis	5	N/A
Ewr Radar Systems	St. Louis	14	\$4,766,000
GKN Aerospace	Hazelwood	975	\$8,257,000
Heizer Aerospace	Pevely	125	\$41,125,000
Lockheed Martin Corp	St. Louis	41	\$13,959,000
Precision Aero Svc Inc	Nevada	17	\$5,787,000
3359: Other Electrical Equipment and Component Manufacturing			
Eagle Picher Technologies LLC	Joplin	1,250	N/A
3364: Aerospace Products and Parts Manufacturing			
Advanced Aircraft Extinguishers	Blue Springs	8	\$2,544,000
Aerospace Filtration Systems	Chesterfield	40	N/A
Airpath Instrument Co	Bridgeton	19	\$6,042,000
Alcoa Titanium & Engineered Products	Washington	180	\$20,179,000
ALM Tech Group	Sullivan	35	\$11,130,000
Aviation Fabricators	Clinton	16	\$5,088,000
Avion Manufacturing	Wright City	20	\$4,218,000
Boeing Defense Space & Scrty	Hazelwood	15,600	\$1,214,900,000
Central Ozark Machine Inc	Alton	28	\$8,904,000
DRS Sustainment Systems Inc	St. Louis	50	\$17,400,000
Essex Manufacturing Div	St. Louis	125	\$31,800,000
Georgian Aerospace Group Inc	Chesterfield	11	\$3,498,000
Gerding Enterprises	Dittmer	20	\$6,360,000
Growth Industries Inc	Grandview	75	\$31,800,000
Herndon Products Inc	O'Fallon	70	N/A
HM Dunn Aero Systems	St. Louis	72	\$42,232,000
Honeywell	St. Louis	80	\$18,149,000
Kemco Aerospace Mfg	St. Louis	60	\$19,080,000
LMI Aerospace Inc	Washington	60	\$13,400,000
LMI Aerospace Inc	Cuba	2	\$500,000
LMI Aerospace Inc	St. Charles	126	\$42,899,000
LMI Aerospace Inc	St. Charles	400	N/A
McCay Tool & Engineering Co	St. Louis	24	\$7,632,000
Mid-Continent Aircraft	Hayti	40	\$11,300,000
Midway Machining Co Inc	Neosho	26	\$1,512,000
Missouri Metals	St. Louis	49	\$1,039,000
O & F Machine Products	Joplin	60	\$19,080,000
Patriot Machine Inc	St. Charles	120	\$18,840,000
Phoenix Aerospace Inc	Kansas City	25	\$7,950,000



Company Name	City	Employees	Sales
(Continued) 3364: Aerospace Products and Parts Manufacturing			
Roderick Arms	Monett	23	\$2,100,000
Sabreliner Aviation	Perryville	100	\$218,950,000
Sabreliner Aviation	Ste. Genevieve	40	\$31,800,000
Seyer Industries Inc	St. Peters	150	\$35,465,000
Tana Wire Marker	California	6	\$784,000
Tech Manufacturing Co	Wright City	33	\$10,494,000
Triumph Structures-Kansas City	Grandview	125	N/A
Ultrax Aerospace Inc	Lee's Summit	45	\$24,772,000
Valley Technologies Inc	Valley Park	30	\$9,540,000
Zenith Aircraft Co.	Mexico	18	\$1,700,000
4881: Support Activities for Air Transportation			
Aviation Technical Svc	Kansas City	200	\$655,000
Avmats Corpair	O'Fallon	25	\$2,520,000
AVMATS Engine Support	O'Fallon	100	\$12,010,000
AVMATS Engine Support	Chesterfield	50	\$6,525,000
Dallas Air Motive Regional	Chesterfield	5	\$742,000
Jetcorp Technical Services Inc.	Chesterfield	100	\$11,666,000
KCAC Aviation	Chesterfield	N/A	\$2,200,000
PAS Technologies Inc	Kansas City	230	N/A
R & D American Aviation	Lee's Summit	4	\$487,000

Source: Reference USA and Hoovers

"We're very excited to be expanding to Kansas City. Joining this established and well-known aerospace community will allow us to launch operations quickly in order to support the growing needs of our customers."

Matt Yerbic, President and CEO, Aviation Technical Services



Missouri has the right workforce to support aerospace manufacturing companies.

Access to skilled labor means higher productivity, higher quality of product, and higher profits for Missouri companies. With a workforce of more than three million, Missouri has a tremendous resource for growing businesses.

Education and training enhances Missouri's workforce profile with nearly 140 academic institutions statewide granting 4,000 degrees annually in engineering related fields (*Source: National Center for Education Statistics, 2014*) and aerospace knowledge centers around the state supporting collaboration with industry leaders such as Boeing.

Missouri's labor force exceeds the entire populations of 20 states, including neighboring Kansas, Arkansas, and Nebraska.

Manufacturing employs over 260,000 Missourians in nearly 6,600 establishments, making up 9.4 percent of the state's total non-farm employment (*Source: BLS, 2015*).

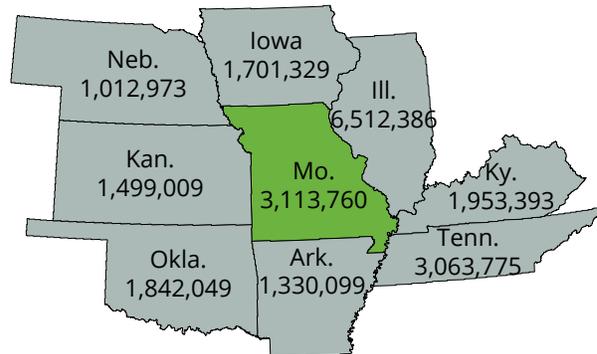
Missouri ranked 6th in 2015 for number of completed apprenticeships, with over 8,600 total apprentices enrolled (*Source: U.S. Dept. of Labor*).

In 2012, Missouri was selected as one of the first four states to participate in the [Certified Work Ready Communities](#) initiative by American College Testing (ACT), and ranks among the top states in the nation for the number of fully certified counties. The initiative aligns workforce training programs with the economic development needs of communities; matches appropriate applicants to jobs based on skill level; and strengthens businesses by strengthening the workforce.

Military bases in and around the state of Missouri—including Fort Leonard Wood, Whiteman AFB, Scott AFB, Fort Leavenworth, and Rosecrans ANGB—are home to over 20,000 active duty military personnel (*Source: MilitaryINSTALLATIONS*).

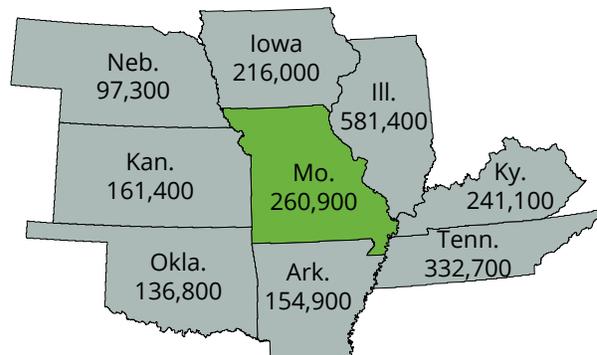
Missouri labor force vs. surrounding states

Source: Bureau of Labor Statistics, 2015



Manufacturing employment

Source: Bureau of Labor Statistics, Current Employment Statistics, 2015



Advanced manufacturing employment

Advanced manufacturing wages in Missouri are nearly 17 percent lower than the U.S. average.

114,113 Missourians are employed in advanced manufacturing positions, accounting for 43.5 percent of the state's total manufacturing jobs.

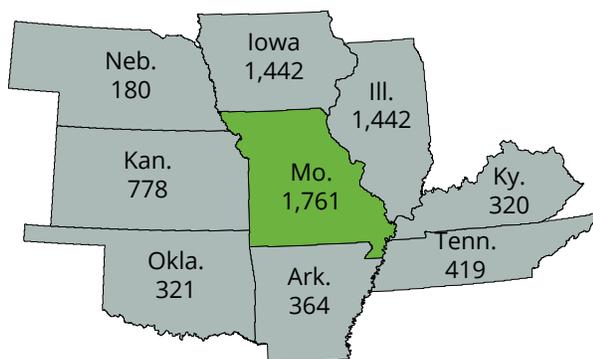
92,415 Missourians are employed in aerospace & defense manufacturing positions, accounting for 35.2 percent of the state's total manufacturing employment.

Top 10 advanced manufacturing industries by employment in Missouri	
Aerospace product and parts manufacturing	16,778
Plastic Product Manufacturing	12,479
Motor vehicle parts manufacturing	9,062
HVAC and commercial refrigeration equipment manufacturing	8,508
Architectural and structural metals manufacturing	7,879
Other fabricated metal product manufacturing	7,331
Semiconductor and other electronic component manufacturing	5,782
Other electrical equipment and component manufacturing	5,337
Metalworking machinery manufacturing	5,247
Electrical equipment manufacturing	4,284

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2015

Completed apprenticeships in FY2015

Source: U.S. Department of Labor



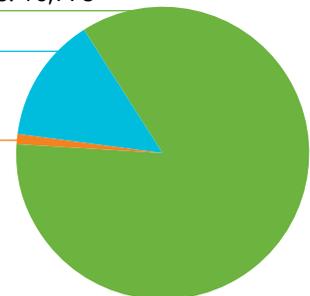
Aerospace industry employment in Missouri

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2015 preliminary

Aerospace product and parts: 16,778

Other aircraft parts and equipment: 2,690

Aircraft engine and engine part manufacturing: 257



Aerospace manufacturing occupations

Occupation code	Occupation title	Missouri employment	Missouri median hourly wage	US median hourly wage
00-0000	All Occupations	2,712,240	\$16.05	\$17.40
17-2141	Mechanical Engineers	3,730	\$37.12	\$40.19
17-2199	Engineers, All Other	1,320	\$35.49	\$46.11
17-3023	Electrical and Electronics Engineering Technicians	1,850	\$30.97	\$29.39
17-3027	Mechanical Engineering Technicians	870	\$23.12	\$25.92
49-3011	Aircraft Mechanics and Service Technicians	1,830	\$28.11	\$28.06
51-0000	Production Occupations	194,370	\$15.26	\$15.51
51-1011	First-Line Supervisors of Production and Operating Workers	12,540	\$24.53	\$27.09
51-2031	Engine and Other Machine Assemblers	810	\$17.68	\$19.04
51-2041	Structural Metal Fabricators and Fitters	2,000	\$21.12	\$17.81
51-2092	Team Assemblers	25,810	\$15.24	\$13.98
51-2099	Assemblers and Fabricators, All Other	5,210	\$11.49	\$13.28
51-4041	Machinists	6,610	\$19.16	\$19.49
51-4121	Welders, Cutters, Solderers, and Brazers	7,660	\$17.65	\$18.34
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	720	\$15.35	\$17.38

Source: BLS, May 2015

“Missouri is a great place for us to be—the proximity to local talent and research partners gives us access to some of the best minds in the industry. We’re building a deeply talented workforce here that will make important contributions to future products.”

Nancy Pendleton, Boeing



Educational and training assets for aerospace manufacturing

Missouri University of Science and Technology (Missouri S&T)

In 2014, the Missouri University of Science and Technology reached a master research agreement with Boeing that allows the two organizations to work more closely on research projects for the aerospace company. Boeing has also established an office at Missouri S&T. The collaborative research between Boeing and S&T over the past several years has resulted in advances in many areas, from non-chrome paint primers, to advanced machined product technologies, to machine metrology. Boeing and Missouri S&T's long-standing relationship extends back to the 1960s, when former aerospace company McDonnell Douglas, which merged with Boeing in 1997, helped the university establish an engineering graduate program in St. Louis in 1964. Boeing also worked with Missouri S&T to create the Center for Aerospace Manufacturing Technologies on campus in 2004.

[Center for Aerospace Manufacturing Technologies](#) serves as a center of excellence in the U.S. for the development and transition of advanced technologies supporting the aerospace manufacturing supply chain.

[The Center for Intelligent Maintenance Systems](#) provides opportunities for cooperative research between Missouri S&T researchers and industrial partners for the purpose of developing technologies in monitoring/diagnostic/prognostic tools for industrial applications. The center has partnered with such companies as Caterpillar, Chevron, Honeywell, and Boeing.

[Intelligent Systems Center](#) performs basic and applied research to address technology needs and technical issues in developing intelligent systems for manufacturing and energy applications.

Studies at the [Materials Research Center](#) range from fundamental science to applied engineering, including the development, evaluation, application, and understanding of metals, polymers, biomaterials, electronic materials, and composites.

St. Louis Community College

[The Aerospace Institute of St. Louis Community College](#) is focused on growing a ready workforce for entry-level technician jobs with regional aerospace companies.

[The Emerson Center for Engineering Manufacturing](#) is a 31,000-square-foot facility featuring state-of-the-art tooling and equipment and 14,000 square feet of laboratory space and classrooms. The Center has labs for manufacturing, materials, quality assurance, civil engineering, electrical/electronic, CAD & design, and skilled trades.

St. Louis Community College's Workforce Solutions Group and the Emerson Center for Engineering & Manufacturing formed a joint venture with Boeing, (with assistance from the State of Missouri Division of Workforce Development), to develop and provide a [Pre-employment Training Program](#) in order to create an ongoing pool of employee candidates for Boeing. The program offers training for assembly mechanics and composites mechanics. Currently there is no cost to students to attend either of these trainings. All costs are covered by a combination of resources provided by Boeing, St. Louis Community College and the Missouri Division of Workforce Development.



Saint Louis University

Parks College of Engineering, Aviation and Technology at Saint Louis University was the 1st federally certified school of aviation in the U.S.

[Center for Aviation Safety Research](#) was established by Congress to solve crucial aviation safety research questions and research Next-Generation Maintenance and Technology. The Center serves as the central resource for practitioners, researchers, and consultants to develop sustainable safety initiatives for air transportation and other high-consequence industries.

[Space Systems Research Laboratory](#) performs research in the design, fabrication and operation of space systems.

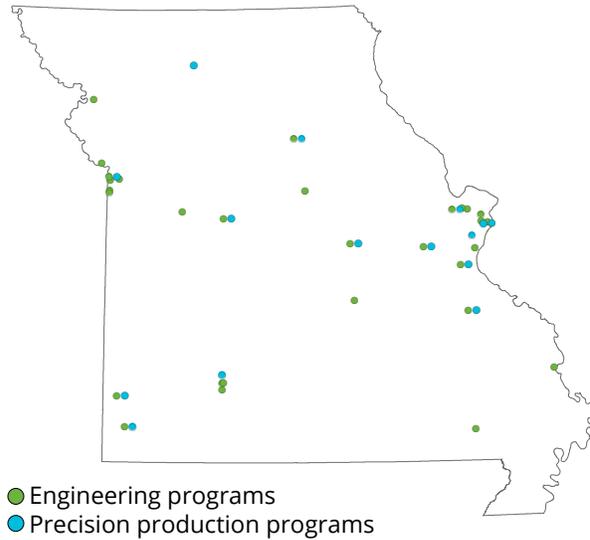
Other Knowledge Centers for Aerospace:

[The Institute of Materials Science & Engineering](#) at Washington University in St. Louis leverages the full potential of interdisciplinary materials research by bringing together over 30 researchers from engineering, physics, chemistry, and earth and planetary sciences.

Missouri State University [Center for Applied Science and Engineering](#) (Springfield) develops and supports advanced materials research in carbon based electronics and devices, materials research and characterization, various MEMS sensors, and systems fabrication.

Other resources:

[Missouri Enterprise](#) provides manufacturing, engineering and business optimization services for Missouri companies.



Missouri colleges offering Precision Production Associate's degree or certificate programs

Crowder College (*Neosho*)

East Central College (*Union*)

Jefferson College (*Hillsboro*)

Metropolitan Community College (*Kansas City*)

Mineral Area College (*Park Hills*)

Missouri Southern State University (*Joplin*)

Moberly Area Community College

North Central Missouri College (*Trenton*)

Ozarks Technical Community College (*Springfield*)

Ranken Technical College (*St. Louis*)

St. Charles Community College

St. Louis Community College

State Fair Community College (*Sedalia*)

State Technical College of Missouri (*Linn*)

Vatterott College (*St. Louis*)

Missouri colleges offering Engineering or Engineering Technology degree programs (Aerospace, Mechanical and Electrical)

Color indicates degree programs offered

Associate's: ■

Bachelor's: ■

Master's: ■

PhD: ■

- Crowder College (*Neosho*) ■
- DeVry University (*Kansas City*) ■■
- East Central College (*Union*) ■
- Evangel University (*Springfield*) ■
- ITT Technical Institute (*Arnold, Earth City, Kansas City, Springfield*) ■■
- Jefferson College (*Hillsboro*) ■
- Metropolitan Community College (*Kansas City*) ■
- Mineral Area College (*Park Hills*) ■
- Missouri Tech (*St. Charles*) ■■
- Missouri Southern State University (*Joplin*) ■■
- Missouri University of Science and Technology (*Rolla*) ■■■
- Missouri Western State University (*St. Joseph*) ■
- Moberly Area Community College ■
- Ozarks Technical Community College (*Springfield*) ■
- Park University (*Parkville*) ■
- Pinnacle Career Institute (*Kansas City*) ■
- Saint Charles Community College ■
- Saint Louis Community College ■
- Saint Louis University ■■■
- Southeast Missouri State University (*Cape Girardeau*) ■
- State Fair Community College (*Sedalia*) ■
- State Technical College of Missouri (*Linn*) ■
- Three Rivers Community College (*Poplar Bluff*) ■
- University of Central Missouri (*Warrensburg*) ■
- University of Missouri (*Columbia*) ■■■
- University of Missouri-Kansas City ■■■
- University of Missouri-St. Louis (joint program with Washington University in St. Louis) ■
- Washington University in St. Louis ■■■



A low-cost, pro-business environment helps companies prosper.

Missouri's industrial electricity costs are 10% lower than the national average (Source: EIA, 2015).

Missouri has been named a top 10 pro-business state for six years in a row (Source: Pollina Corporate Real Estate, 2015).

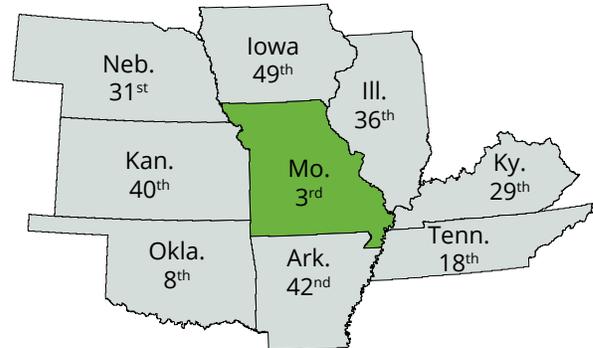
Missouri is a tax-friendly state, ranking in the top 10 for property tax index and corporate income tax index (Source: Tax Foundation, 2016).

Missouri has the third most diverse economy in the U.S. with a GDP over \$293 billion (Source: BEA, 2015) and exports totaling over \$13.6 billion (Source: International Trade Administration, 2015).

Missouri has one of the lowest effective jet fuel tax rates in the country, at .033 cents/gallon (Source: Tax Foundation, 2014).

Corporate income tax rate index ranking

Tax Foundation, 2016



Tax exemptions for manufacturers

Manufacturers locating in Missouri enjoy numerous tax advantages, including:

- Sales/use tax exemption on machinery and equipment used to establish a new or expand an existing facility
- Property tax exemption for inventories
- State sales tax & local use tax exemption on energy purchases

State and local incentives that can be utilized:

- Achievable minimum thresholds
- 100% retained withholdings
- Fully refundable state tax credits
- Flexible employee training programs
- Infrastructure assistance
- Property tax abatement
- Exemptions

Missouri puts you closer to your customers and suppliers.

- 600 mile radius
- 1,200 mile radius

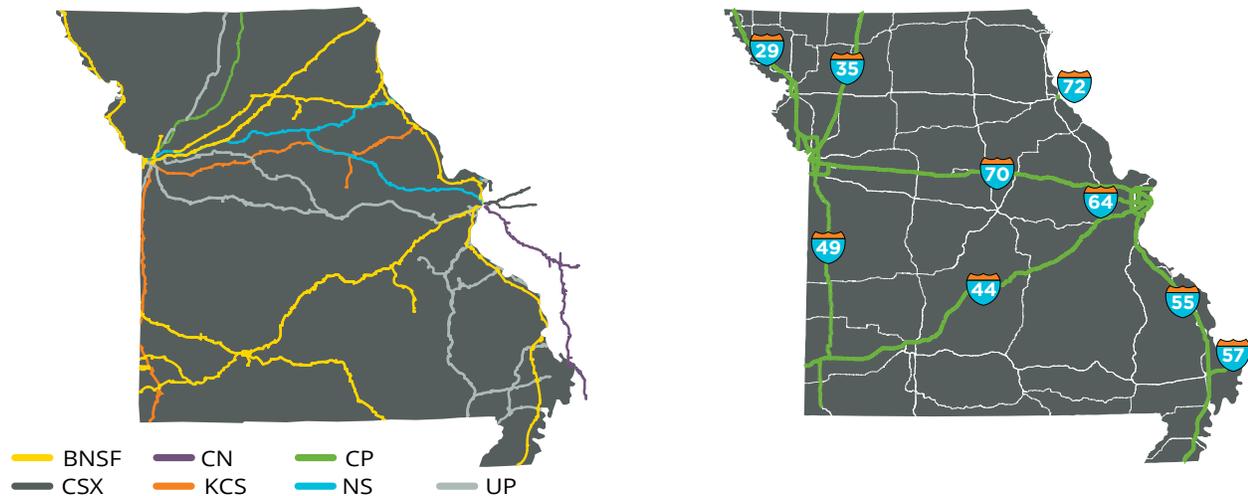


Missouri's central location provides efficient access to both coasts, as well as to markets in Canada and Mexico.

Missouri is within 600 miles of 51 percent of U.S. households and 50 percent of U.S. manufacturing establishments (Sources: American Community Survey 5 Year, 2010-2014, ESRI and Infogroup, 2015).

Missouri is within 600 miles of many of the nation's fastest growing metros, including: Atlanta, Austin, Dallas, Denver, Houston, Minneapolis, Nashville, and San Antonio (Source: Census Bureau, 2010-2015).

Missouri's top-ranked transportation network is a dependable delivery system for goods and services.



Rail

Missouri is one of the few states that can provide rail access to both east and west coasts. The state also provides efficient, low-cost shipping across the country via all Class I carriers: Burlington Northern Santa Fe (BNSF), Kansas City Southern (KCS), Norfolk Southern (NS), Union Pacific (UP), CSX, Canadian National Railway (CN) and Canadian Pacific (CP).

Missouri is ranked fourth in tons and third in rail carloads carried by state (*Source: Association of American Railroads*).

Two of the largest U.S. rail terminals are located in Kansas City and St. Louis, linking nearly 4,000 miles of track throughout the state.

Roads

Missouri has one of the least congested transportation networks in the United States and the 6th largest public road and highway system in the nation (*Source: Federal Highway Administration, 2013*).

Major interstates include I-64, I-44, I-70, I-55, I-35, I-49 and I-29. I-70, which bisects Missouri, is over 2,000 miles long and passes through 10 states. I-29 and I-35 are located within the NAFTA corridor, providing easy access to Canada and Mexico.

There are more than 110,000 commercial trailers registered in Missouri (*Source: Bureau of Transportation Statistics, 2011*).



Waterways

Missouri is ranked 10th for inland waterway mileage (1,000 miles), moving an average of \$4.1 billion in cargo annually (*Source for mileage: Bureau of Transportation Statistics, cargo: Missouri Port Authorities*).

29 industrial centers, with a combined population of 90 million, can be reached from St. Louis by barge. St. Louis is the northern-most point on the Mississippi River that normally remains ice-free and open throughout the year. The city is also below the southern-most lock and dam on the Mississippi. (*Missouri Port Authorities*).

Airports

Missouri travelers can reach most cities in the United States and Canada in less than three hours by air.

The airport system in Missouri consists of approximately 130 public airports, two of which support international traffic: Lambert-St. Louis International and Kansas City International.

Springfield, Branson, Joplin, Columbia, Cape Girardeau, Kirksville and Waynesville (Fort Leonard Wood) also have commercial service.

Missouri has three U.S. Customs Ports of Entry located in Kansas City, Springfield, and St. Louis.

Foreign Trade Zones

Missouri has three foreign trade zones in Kansas City, St. Louis, and Springfield.

The FTZ at Lambert-St. Louis International Airport was recently expanded to include all of St. Louis and St. Louis County under the Alternative Site Framework. The airport has over 600 acres of land for development on the airfield.

Kansas City ranks first in the country in FTZ space, with five manufacturing zones (123.4 acres), nine general purpose FTZ sites, over 8 million square feet of active FTZ space, and 13,000+ acres of inactive FTZ space available for storage or processing merchandise.