

AEROSPACE INDUSTRY IN IDAHO



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Aerospace Industry in Idaho



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EXECUTIVE SUMMARY

The aerospace industry only contributes a fraction of jobs to Idaho's statewide total, but it increased nearly 40 percent over the last two decades even after a 6 percent decline during the recession.

Many states with larger airplane manufacturers provide the nation with larger concentrations of aerospace employment through aerospace products and parts manufacturing.

While small, Idaho has a broad range of industry activities that include aircraft manufacturing, aircraft component manufacturing, advanced aerospace research, flight training, military aircraft development, space exploration and airport operations. The aerospace industry directly employed about 2,200 Idaho workers at 200 establishments in 2012. These employees are typically well paid, averaging \$58,900 a year – more than \$20,000 higher than the average wage for all jobs in Idaho.

The industry encompasses the design, development, production and operation of aircraft. Its top tier includes companies directly involved in the production and operation of aircraft. The second tier involves primary suppliers to those companies, and the rest of the industry supplies those suppliers.

There are few states that share the highest proportions of industry employment. The industry supply chain has bled into many states, providing smaller, profitable manufacturing facilities. The standards enforced by the Federal Aviation Administration make supplying larger companies difficult but eventually profitable.

Idaho's close proximity to the nation's third largest employer in the industry — Boeing — gives it a competitive edge over other states and has created a tertiary supply market.

A regional and national comparison involves only certain industry-specific North American Industrial Classification System codes (Appendix A). This underestimates the impact the aerospace industry on Idaho and the nation as a whole because while NAICS codes are limited to one function of a business, many smaller businesses serve multiple industries, and that is the case in Idaho even though it cannot be quantified.

KEY FINDINGS

NATIONAL SHARE

As the most populous state, California tends to lead the country in the share of employment in most industries as it does in aerospace. California accounts for 12.7 percent of industry employment nationwide even without any of the largest aircraft manufacturers. California employment is concentrated on guided missile and space vehicle manufacturing and search, detection, navigation, guidance, aeronautical and nautical system and instrument manufacturing. Aerospace in Texas, accounting for the second largest percentage of jobs nationally, is largely concentrated at airports. It includes significant shares of employment in passenger and freight air travel and flight training programs.

At the other end of the spectrum, states with the smallest share of employment nationwide are Vermont, Montana, North Dakota, South Dakota and Wyoming – all with 0.1 percent of national aerospace employment. Idaho is just ahead of them at 0.2 percent of national industry employment.

However, a state's share of national industry employment does not tell the entire story. In fact, some states with only a fraction of national industry employment have strategies for developing an aerospace industry. North Dakota, for example, has earned a spot on the federal list of unmanned aircraft systems and has a prolific aerospace program incorporated in its higher education institutions poising itself for future economic development opportunities and a trained and available workforce.

In addition, not all aerospace-related businesses fall into the identified industrial classifications. Many of Idaho's large aerospace companies are classified in other areas, skewing the perception of the industry overall. That is likely the case in many other states – an issue that will be addressed later.

The recession took a toll on the industry nationwide. The only states to show significant growth from 2007 to 2012 were Mississippi, where aerospace expanded 20 percent, and South Carolina, where growth was 88 percent. Mississippi experienced growth in air transportation and flight training services while South Carolina's strength was in aircraft parts and auxiliary equipment manufacturing – most likely a result of its expanding passenger air services and the future site of Boeing's most recent expansion.

For the five years prior to the recession, Idaho ranked 10th in industry employment growth nationwide at 15 percent from 1,890 jobs in 2002 to 2,180 in 2007, and there was essentially no job loss during the recession. Many of the jobs spared were in aircraft and aircraft parts manufacturing, flight training and air transportation while air traffic control operations continued to contract.

Aerospace Industry Labor Force Metrics for Idaho and Surrounding States - 2012

SIZE			RELATIVE SIZE			RELATIVE GROWTH					
Aerospace Employment to Nation			Aerospace Employment to State			Growth in Aerospace Employment					
Area	Percent	Rank	Area	Percent	Rank	Area	2002-2007	Rank	Area	2007-2012	Rank
National	100.0%	-	National	100.0%	-	Montana	37.9%	2	Washington	12.2%	3
Washington	8.2%	3	Washington	3.8%	1	Utah	18.0%	5	Nevada	6.3%	5
Utah	1.4%	22	Utah	1.6%	8	Idaho	15.2%	6	Oregon	0.0%	13
Nevada	0.9%	26	Nevada	1.1%	15	Nevada	10.8%	10	Idaho	-0.7%	14
Oregon	0.8%	28	Oregon	0.7%	28	Oregon	6.7%	16	Wyoming	-3.0%	24
Idaho	0.2%	44	Montana	0.4%	43	Wyoming	2.7%	23	National	-3.9%	-
Montana	0.1%	47	Idaho	0.4%	46	Washington	2.6%	25	Montana	-9.0%	33
Wyoming	0.1%	50	Wyoming	0.3%	48	National	-1.1%	-	Utah	-20.1%	44

PROJECTED GROWTH			EARNINGS			AEROSPACE: EARNINGS TO STATE			RELATIVE ESTABLISHMENTS		
Projected Growth of Aerospace Employment			Aerospace Earnings per Worker			EPW Ratio - State Aerospace to State Total			2012 Aerospace Establishments to Total Establishments		
Area	2012-2022	Rank	Area	EPW	Rank	Area	Percent	Rank	Area	Percent	Rank
Oregon	35.4%	4	National	\$92,487	-	Utah	160.8%	2	Nevada	0.58%	3
Idaho	21.5%	6	Utah	\$81,975	9	National	154.1%	-	Idaho	0.37%	7
Wyoming	19.1%	7	Nevada	\$70,402	16	Nevada	133.0%	12	Montana	0.36%	8
Nevada	18.9%	8	Washington	\$68,849	22	Idaho	114.0%	26	Utah	0.30%	13
Montana	17.1%	9	Oregon	\$54,349	37	Washington	108.2%	35	Wyoming	0.29%	15
Washington	15.0%	12	Idaho	\$51,151	40	Oregon	100.0%	40	Washington	0.25%	18
National	6.4%	-	Wyoming	\$45,195	46	Montana	84.5%	46	National	0.24%	-
Utah	-1.1%	38	Montana	\$39,257	49	Wyoming	82.6%	47	Oregon	0.21%	32

Source: QCEW Employees—EMSI 2013.2 Class of Worker

EMPLOYERS

There are 200 aerospace-related companies in Idaho with 2,200 employees. These small suppliers – some in Tier 1 but mostly in Tier 2 and Tier 3 – feed the aerospace industry both regionally and nationally. Their expertise ranges from charter services to rocketry and telemetry, and they keep popping up across the state as the industry evolves.

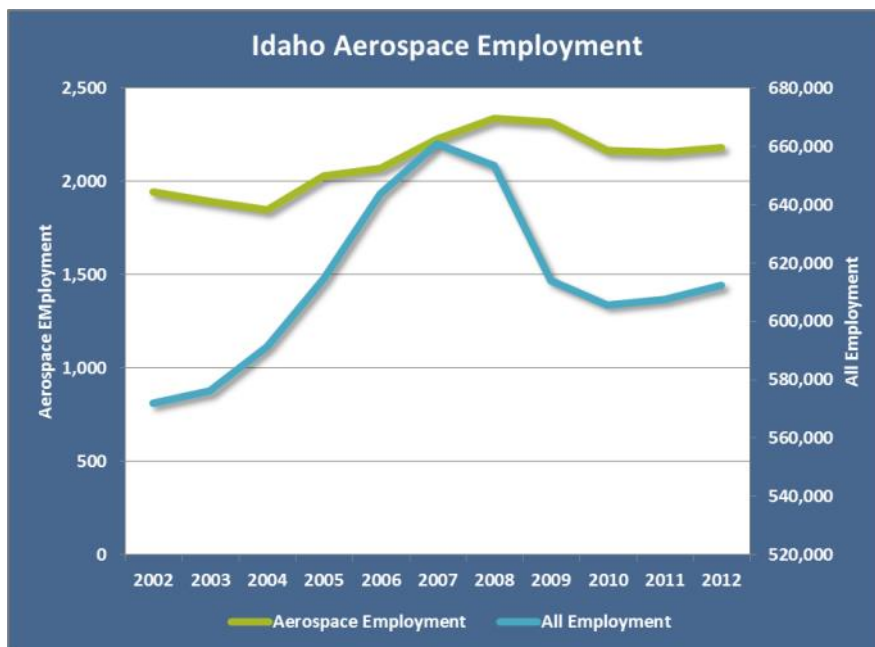
One-quarter of the employers in the specified subsectors fall under other support activities for air transportation. These employers have one-quarter of the employees. This subsector includes aircraft maintenance, installation, supplying ground support equipment, flight training and a variety of services. Nonscheduled chartered passenger air transportation comprises 30 different businesses across Idaho, employing 230 people.

Aircraft manufacturing is the single largest employer in Idaho's aerospace industry with only nine businesses employing nearly 200 people. These operations are concentrated in southwestern and northern Idaho. The second largest subsector with 13 employers and 256 employees is all other travel arrangement and reservation services. These businesses include airlines.

Even the smallest of companies bring a powerful impact to the state as a whole.

EMPLOYMENT

Over the past decade, employment in Idaho's aerospace industry fared better than the overall economy through the recession and is recovering at about the same rate since. Through the expansion of 2003 to 2007, employment in the aerospace industries grew 17.6 percent, or 4.4 percent a year, and overall employment grew 14.7 percent in Idaho, or 3.7 percent a year. When the recession hit in 2008, overall employment and aerospace payrolls both contracted through 2010 by about the same percentage – 7.3 percent for the overall economy and 7.4 percent for aerospace. Most of the losses were a result of a drop in passenger air travel. However, as aircraft in many major fleets throughout the country started to reach their lifespan, aircraft maintenance and the workers performing it grew.



Source: QCEW Employees—EMSI 2013.2 Class of Worker

From 2002 to 2007, the overall aerospace industry in Idaho grew 15 percent, adding 285 jobs during the five-year period. Through the recession, employment dropped a mere 2 percent when overall employment dropped 7 percent.

NAICS Code	Description	Employment				2002-2007		2007-2012	
		2002	2007	2012	% of Total (2012)	Numeric Change	% Change	Numeric Change	% Change
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	119	20	<10	0.2%	---	-83%	---	---
336411	Aircraft Manufacturing	87	162	197	9.0%	75	86%	35	22%
336412	Aircraft Engine and Engine Parts Manufacturing	21	39	39	1.8%	18	86%	0	0%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	17	56	71	3.3%	39	229%	15	27%
481111	Scheduled Passenger Air Transportation	499	523	420	19.3%	24	5%	-103	-20%
481112	Scheduled Freight Air Transportation	55	74	49	2.2%	19	35%	(25)	-34%
481211	Nonscheduled Chartered Passenger Air Transportation	260	242	209	9.6%	-18	-7%	-33	-14%
481212	Nonscheduled Chartered Freight Air Transportation	32	63	64	2.9%	31	97%	1	2%
481219	Other Nonscheduled Air Transportation	<10	24	73	3.3%	---	---	49	204%
488111	Air Traffic Control	37	62	15	0.7%	25	68%	(47)	-76%
488119	Other Airport Operations	180	154	124	5.7%	-26	-14%	-30	-19%
488190	Other Support Activities for Air Transportation	401	428	560	25.7%	27	7%	132	31%
561599	All Other Travel Arrangement and Reservation Services	216	321	256	11.7%	105	49%	-65	-20%
611512	Flight Training (Private)	<10	56	98	4.5%	---	---	42	75%
Total		1,941	2,226	2180		285	15%	-46	-2%

Source: QCEW Employees - EMSI 2013.2 Class of Worker

Aircraft maintenance has the most employment in Idaho's aerospace industry at 420, or 19.2 percent of all aerospace employment. This industry is a subsector of other support activities for air transportation, which is comprised of 51 small businesses across the state employing 560 to make it the largest aerospace sector in Idaho.

Scheduled passenger air transportation is second with 420 employees at 23 businesses, or 19.3 percent of total industry employment. Nonscheduled chartered passenger air transportation has 30 different small businesses employing 229 people across every region of the state.

NAICS Code	Share of Employment by Largest Employing Sector	Share of Total (%)		
		2002	2007	2012
488190	Other Support Activities for Air Transportation	21%	19%	26%
481111	Scheduled Passenger Air Transportation	26%	23%	19%
561599	All Other Travel Arrangement and Reservation Services	11%	14%	12%
481211	Nonscheduled Chartered Passenger Air Transportation	13%	11%	10%
336411	Aircraft Manufacturing	4%	7%	9%
488119	Other Airport Operations	9%	7%	6%
611512	Flight Training (Private)	0%	3%	4%
481219	Other Nonscheduled Air Transportation	0%	1%	3%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	1%	3%	3%
481212	Nonscheduled Chartered Freight Air Transportation	2%	3%	3%
481112	Scheduled Freight Air Transportation	3%	3%	2%
336412	Aircraft Engine and Engine Parts Manufacturing	1%	2%	2%
488111	Air Traffic Control	2%	3%	1%
334511	Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing	6%	1%	0%

Source: QCEW Employees - EMSI 2013.2 Class of Worker

*sorted by largest share in 2012

Idaho's Aerospace Industry

According to Economic Modeling Specialists International, total jobs are projected to increase 17.9 percent from 612,106 in 2012 to 721,404 in 2022 while jobs in the defined aerospace industries will increase 21.5 percent from 2,180 in 2012 to 2,648 in 2022. The aerospace sectors growing the most will be support activities for transportation followed by transportation equipment manufacturing.

There will be more job openings due to replacements for retirement than in new growth. Approximately 48 percent of Idaho's aerospace industry workers were between 45 and 64 years old in 2012. EMSI estimates 51 percent of the pilots currently working in Idaho were between 45 and 64 in 2012. Many pilots will reach the required retirement age of 65.

3-digit NAICS	Aerospace Subsector	2012	2022	Numeric Change	% Change
336	Transportation Equipment Manufacturing	307	393	86	28.0%
481	Air Transportation	815	789	-26	-3.2%
488	Support Activities for Transportation	699	873	174	24.9%
Total Aerospace		2,180	2,648	468	21.5%

Source: QCEW Employees - EMSI 2013.2

NAICS Code	Industry	Employment		Change (2012-2022)	
		2012	2022	Numeric	Percent
334511	Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing	<10	<10	---	---
336411	Aircraft Manufacturing	197	209	12	6.1%
336412	Aircraft Engine and Engine Parts Manufacturing	39	75	36	92.3%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	71	109	38	53.5%
481111	Scheduled Passenger Air Transportation	420	350	(70)	-16.7%
481112	Scheduled Freight Air Transportation	49	36	(13)	-26.5%
481211	Nonscheduled Chartered Passenger Air Transportation	209	198	(11)	-5.3%
481212	Nonscheduled Chartered Freight Air Transportation	64	58	(6)	-9.4%
481219	Other Nonscheduled Air Transportation	73	147	74	101.4%
488111	Air Traffic Control	15	<10	---	---
488119	Other Airport Operations	124	120	(4)	-3.2%
488190	Other Support Activities for Air Transportation	560	753	193	34.5%
561599	All Other Travel Arrangement and Reservation Services	256	407	151	59.0%
611512	Flight Training (Private)	98	183	85	86.7%
Total		2,180	2,648	468	21.5%

Source: QCEW Employees - EMSI 2013.2 Class of Worker

LOCATION QUOTIENT

The location quotient for aerospace industries is extremely low in Idaho except for nonscheduled air service, air transportation support and flight training.

The location quotient is the ratio of employment in the region to employment in the nation, quantifying the level of industry concentration. This can reveal what makes a particular region “unique” for a sector.

A location quotient over one means the industry’s share of employment in the region is greater than its share of employment in the nation, making that industry relatively more important locally than those with lower quotients. However, the location quotient by itself does not determine whether an industry should be targeted or not.

Nonscheduled air transportation – or general purpose aircraft – other than chartered passenger or freight service is the most prominent of subsectors in the state’s economy with a location quotient of 5.08, and over time has the potential to contribute more to the state’s economic base.

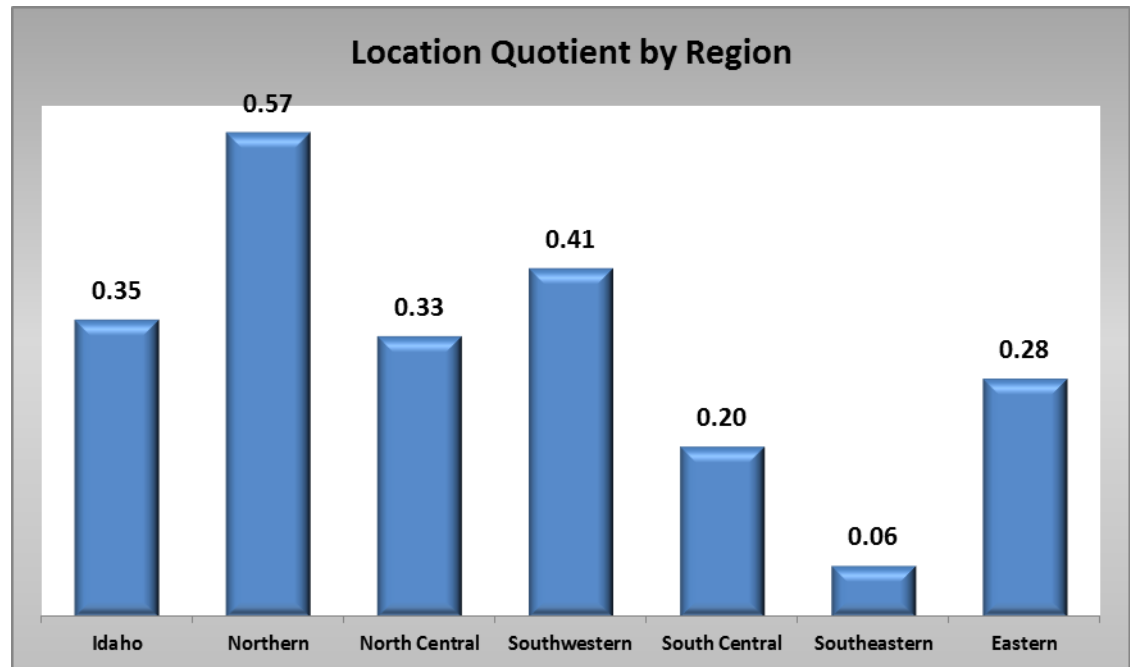
NAICS Code	Industry	Location Quotient	
		2012	2022
334511	Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing	--	--
336411	Aircraft Manufacturing	0.18	0.17
336412	Aircraft Engine and Engine Parts Manufacturing	0.10	0.20
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	0.15	0.18
481111	Scheduled Passenger Air Transportation	0.22	0.18
481112	Scheduled Freight Air Transportation	0.86	0.54
481211	Nonscheduled Chartered Passenger Air Transportation	1.51	1.22
481212	Nonscheduled Chartered Freight Air Transportation	1.74	1.15
481219	Other Nonscheduled Air Transportation	5.08	6.49
488111	Air Traffic Control	--	--
488119	Other Airport Operations	0.43	0.34
488190	Other Support Activities for Air Transportation	1.25	1.34
561599	All Other Travel Arrangement and Reservation Services	0.72	0.83
611512	Flight Training (Private)	1.29	2.40

Source: QCEW Employees - EMSI 2013.2 Class of Worker

Statewide, aerospace has a location quotient of 0.35 and regionally, north central, south central, southeastern and eastern Idaho are all below that. The concentration is likely to increase by 2022 not only statewide but also in northern, north central, southeastern and eastern Idaho. The identified aerospace industries are recognized as “pre-emergent” industries in these regions, having a potential to contribute more to the region’s economic base. Currently, the largest concentration of an industry of economic importance is in north central Idaho where nonscheduled chartered passenger air transportation has a location quotient of 4.72. Air traffic control in eastern Idaho has the second highest location quotient at 4.24, and other support activities for air transportation in northern Idaho is 3.10.

Idaho's Aerospace Industry

According to EMSI data, southwestern and south central Idaho need to attract more businesses in those industries to maintain an economy that is sufficiently balanced and diversified in comparison to the national economy and to support existing aerospace companies.



Source: QCEW Employees—EMSI 2013.2 Class of Worker

Location Quotient Breakdown - 2012 National LQ								
Description	United States	Idaho	Northern	North Central	Southwestern	South Central	Southeastern	Eastern
Other Nonscheduled Air Transportation	1.00	5.08	12.91	9.76	1.25	0.00	0.00	17.39
Nonscheduled Chartered Freight Air Transportation	1.00	1.74	1.66	1.15	1.75	3.75	0.00	1.17
Nonscheduled Chartered Passenger Air Transportation	1.00	1.51	0.59	4.72	2.17	0.62	0.05	0.43
Flight Training (Private)	1.00	1.29	0.04	0.00	1.61	0.00	1.57	3.01
Other Support Activities for Air Transportation	1.00	1.25	3.10	0.79	1.43	0.50	0.00	0.67
Air Traffic Control	1.00	1.16	0.00	3.59	0.00	1.54	1.84	4.24
Scheduled Freight Air Transportation	1.00	0.86	0.52	0.00	1.36	0.78	0.62	0.17
All Other Travel Arrangement and Reservation Services	1.00	0.72	0.12	0.54	1.28	0.36	0.13	0.23
Other Airport Operations	1.00	0.43	0.00	0.89	0.38	0.94	0.05	0.53
Scheduled Passenger Air Transportation	1.00	0.22	0.02	0.11	0.34	0.16	0.05	0.26
Aircraft Manufacturing	1.00	0.18	1.26	0.00	0.02	0.06	0.01	0.05
Other Aircraft Parts and Auxiliary Equipment Manufacturing	1.00	0.15	0.70	0.00	0.13	0.00	0.00	0.00
Aircraft Engine and Engine Parts Manufacturing	1.00	0.10	0.00	0.48	0.16	0.00	0.01	0.00
Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing	1.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Guided Missile and Space Vehicle Manufacturing	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.00	0.35	0.57	0.33	0.41	0.20	0.06	0.28

Source: QCEW Employees - EMSI 2013.2 Class of Worker

Idaho's Aerospace Industry

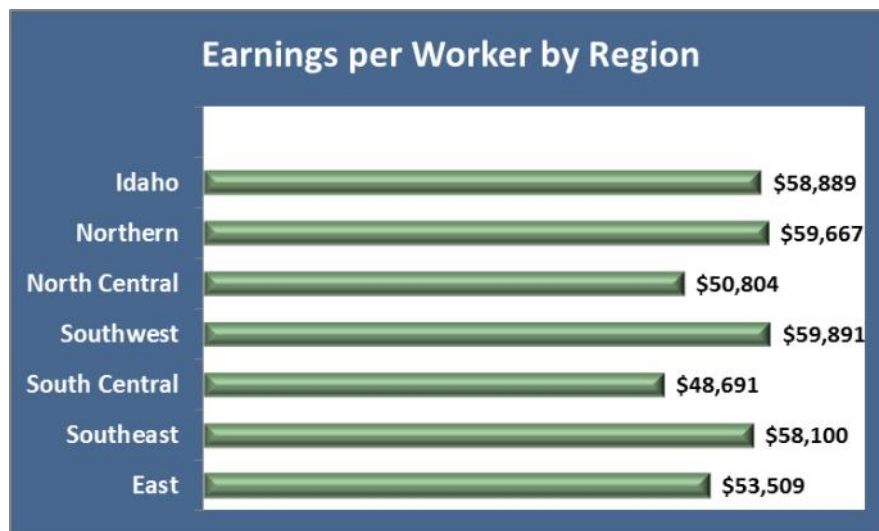
WAGES

The average worker in the defined aerospace industry earns \$58,900 annually, approximately 31 percent higher than all industries in Idaho. Earnings per worker differ with each subsector within the aerospace cluster. The subsector with the highest earnings per worker is nonscheduled air transportation other than chartered passenger or freight service.

NAICS Code	Description	Employment		Growth (2012-2022)		Earnings per Worker
		2012	2022	Numeric	Percent	
481219	Other Nonscheduled Air Transportation	73	147	74	101.4%	\$99,290
481212	Nonscheduled Chartered Freight Air Transportation	64	58	-6	-9.4%	\$88,894
488111	Air Traffic Control	15	<10	---	---	\$83,195
481211	Nonscheduled Chartered Passenger Air Transportation	209	198	-11	-5.3%	\$78,717
336411	Aircraft Manufacturing	197	209	12	6.1%	\$62,204
488190	Other Support Activities for Air Transportation	560	753	193	34.5%	\$60,490
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	71	109	38	53.5%	\$59,621
561599	All Other Travel Arrangement and Reservation Services	256	407	151	59.0%	\$52,742
336412	Aircraft Engine and Engine Parts Manufacturing	39	75	36	92.3%	\$51,196
611512	Flight Training (Private)	98	183	85	86.7%	\$50,922
481112	Scheduled Freight Air Transportation	49	36	-13	-26.5%	\$46,764
481111	Scheduled Passenger Air Transportation	420	350	-70	-16.7%	\$45,564
488119	Other Airport Operations	124	120	-4	-3.2%	\$44,447
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	<10	<10	---	---	--
Total		2180	2648	468	21.5%	\$58,899

Source: QCEW Employees - EMSI 2013.2 ; *sorted by highest earnings per worker

Earnings per worker broke down along employment lines with southwestern Idaho having the highest earnings of the six regions. Northern Idaho followed close behind at nearly \$60,000 per year. Both were slightly higher than the state average.



Source: QCEW Employees - EMSI 2013.2

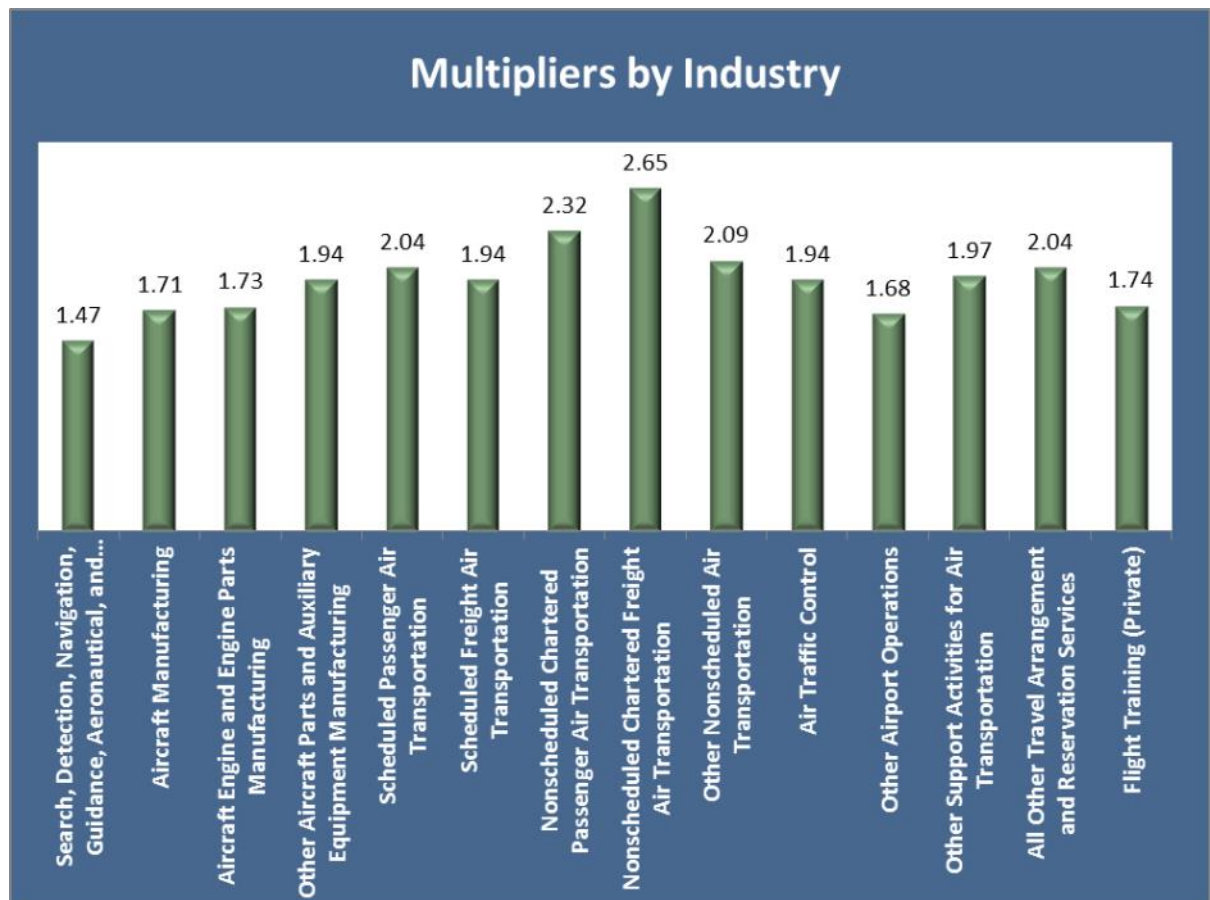
MULTIPLIER

EMSI estimates aerospace jobs have a multiplier of 2.09, meaning that for every 10 jobs created in the industry, just over 10 more are created in other sectors of the economy. The multiplier effect is a result of spending by new employees and their expanding employers' additional spending with local suppliers. The more an industry relies on local suppliers and is an industry exporter, the greater its multiplier. The higher the multiplier, the greater an industry's economic impact. And the higher the wages of an industry and its suppliers, the higher the multiplier effect.

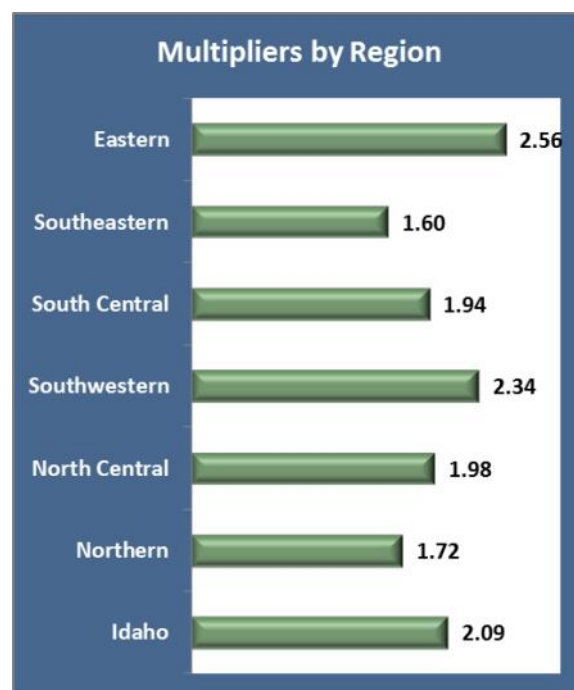
The aerospace industry has a moderate multiplier in Idaho. It relies on its exports and offers higher than average wages for its employees, but it lacks local suppliers.

On an industry basis, export-dependent nonscheduled chartered freight air transportation has the largest multiplier at 2.65. Geographically, eastern Idaho has the highest multiplier at 2.56. Due to the high multiplier, aerospace generates a strong positive impact on its regional economy.

Idaho's
Aerospace
Industry



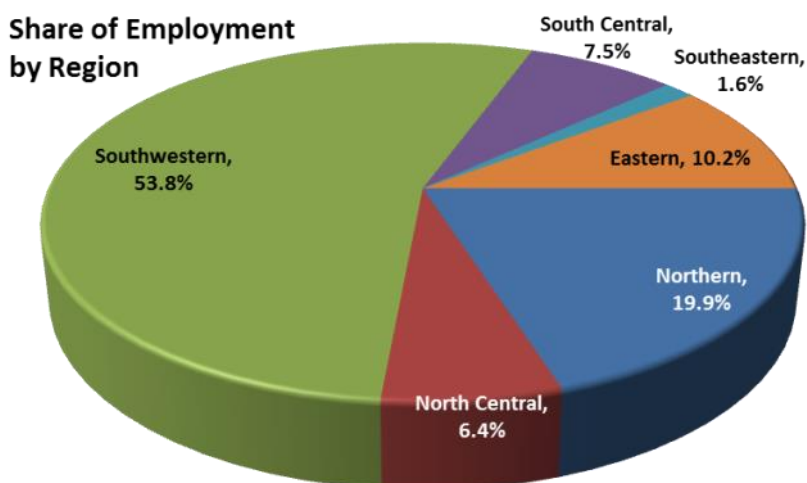
Source: QCEW Employees - EMSI 2013.2



Source: QCEW Employees - EMSI 2013.2

EMPLOYMENT BY REGION

Given its population dominance, southwestern Idaho accounts for over half the jobs in the defined aerospace industries. Northern Idaho has the highest employment to employer ratio – meaning the region may not have as many aerospace companies but those companies have more employees on average.



Source: QCEW Employees - EMSI 2013.2

The reasons aerospace exists in Idaho vary by region.

The close proximity to the Salt Lake City International Airport offers opportunity in southeastern Idaho, which currently has only 3 percent of total aerospace employment. The 15 airlines serving Salt Lake now provide nonstop service to 106 destinations, making that international airport the largest airline hub in the western United States. It is Delta Airlines' second largest hub behind Atlanta, and Delta relies on the surrounding higher educational institutions and flight schools to train its workforce. The AvCenter school is in Pocatello for this reason as is an aircraft maintenance program at Idaho State University.

There are nine employers classified as aircraft maintenance operations in southeastern Idaho, accounting for 65 percent of the region's aerospace employment, and one employer with a large aircraft maintenance facility that is not in that NAICS category. Commercial airlines and charter services account for the rest.

The aerospace sector in north central Idaho accounts for nearly 7 percent of the state's aerospace employment. How the industry formed in this region is unique. The two largest aerospace employers are there because of the nearby forests. One of the largest industry employers, Hillcrest Aircraft Co, is federally approved for helicopter repair. It provides helicopter services for forest management, power line construction, building construction, aerial photography, aerial ignition, firefighting and surveys. With nearly 60 years of providing specialty aviation services, Hillcrest is one of the nation's leaders in this field.

Idaho's Aerospace Industry

North central Idaho's other large aerospace business migrated to the area from California and specializes in radial engine overhaul and repair. Its customers fly in from all over North America. The region's large ammunition manufacturing sector offers possibilities to aerospace companies looking for similar types of metal manufacturers.

Northern Idaho has 20 percent of the state's aerospace employment, second to the state's airport hub in the southwestern region. From 1999 to 2009, regional aerospace employment grew at a faster rate than anywhere else in the state, giving aerospace a higher concentration of jobs there than in any of the other five regions.

Aerospace Employment				
	2012	2022	% Change	% of Total Employment in 2012
U.S.	1,340,058	1,425,389	6.4%	1.0%
Idaho	2,180	2,648	21.5%	0.4%
Northern	434	588	35.5%	0.6%
North Central	139	244	75.5%	0.4%
Southwestern	1172	1240	5.8%	0.1%
South Central	164	150	-8.5%	0.2%
Southeastern	34	47	38.2%	0.1%
Eastern	222	359	61.7%	0.3%

Source: QCEW Employees—EMSI 2013.2

A number of the region's aerospace companies began with engineers coming up with new products that were spun off into new companies. Aerocet Inc. in Priest River and Tamarack Aerospace Group in Sandpoint are prime examples of this kind of innovation.

Tom Hamilton's aviation design expertise and innovation is responsible for Aerocet's 25 years of success in composite aircraft float manufacturing. Aerocet successfully launched a composite kit aircraft, producing more than 3,700 kits that are sold today under the Glasair and Glastar brand. Key Aerocet personnel designed and launched a short takeoff and landing aircraft that was spun off into Quest Aircraft Co.'s Kodiak. The Sandpoint-based company delivered its 100th Kodiak aircraft in 2013 and continues to penetrate the backcountry market with its new AirClaw™ model. With 160 employees, Quest is Idaho's largest aerospace employer next to commercial airlines.

Tamarack Aerospace Group specializes in researching, developing and producing efficiency modifications and product upgrades for the aerospace industry. The company debuted its patented active winglet technology that dramatically increases the fuel efficiency and range of a winged aircraft. It also recently solidified a partnership with Cessna Aircraft, and in a few years expects to expand to 140 employees.

As air travel continues to grow and military aircraft age, large aircraft manufacturers are looking for innovative ways to increase fuel efficiency, maximize loads and still capitalize on aircraft life. This creates small, niche markets across the country, and many companies supplying those markets emerge near the industry's manufacturing giants like Boeing, BEECH and GE (General Electric). With Boeing's presence in Washington, more work has eventually trickled down to smaller, niche companies in Spokane and northern Idaho. Many provide products to a number of industries and are not classified as aerospace companies specifically but rather as metal fabricators, foundries, computer and peripheral equipment manufacturing.

Fairchild Air Force Base near Spokane also bolsters the region's aerospace businesses with its wide variety of units and missions – air refueling, the Air Force Survival, Evasion, Resistance and Escape school, medical detachments, a weapons squadron and the Joint Personnel Recovery Agency. The 92nd Maintenance Group supports the base's air tankers, UH-1N helicopters and other aircraft. Military personnel assigned to this squadron have made an easier transition to civilian employment, becoming an asset to the region's aerospace employers. In an effort to help military members prepare for the civilian world, employers have successfully used the Transition Assistance Program at the base to recruit these already federally certified airframe and power plant mechanics. Over the past five years, more than 50 veterans have been placed with northern Idaho aerospace employers through the program. The Boise market is even larger with Mountain Home Air Force Base. About 150 veterans pass through the program there each year.

With a shrinking Department of Defense budget, the Air Force will also be taking some cuts. As a result, there will be more military personnel going through the program, generating an influx of skilled, certified aerospace workers.

Southwestern Idaho accounts for over half the employment in Idaho's aerospace sector. The airlines at the Boise Airport alone account for 26 percent, or 300, of the region's aerospace employment and 13.6 percent of statewide industry employment.

And the size of the aerospace workforce is vastly understated. Not all the services at the airport are in this report's defined aerospace taxonomy. There were more than 40 aviation-related tenants at the airport, and according to the Idaho Transportation Department's Airport Master Plan, there were 3,914 people working at the airport in 2008.

Aircraft maintenance and airport operations support Idaho's largest airport. Western Aircraft, at adjacent Gowen Field, is not only the state's largest aircraft maintenance and operations support business but has become the Pacific Northwest's largest aircraft services company concentrating on aircraft interiors and avionics sales and installation. It has an extensive inventory of aircraft and parts and provides ground support equipment, fueling operations and line service. The company also operates a fleet of charter aircraft.

Much like Fairchild in Spokane, Mountain Home Air Force Base supports the regional aerospace industry in the southwestern part of the state and supplies a federally certified work-ready labor pool.

Idaho's charter service businesses are bolstered by the state's natural beauty. There are 30 nonscheduled chartered passenger air transportation services employing 229 people. These businesses primarily provide passenger charter and sightseeing services with no regular routes or schedules.

Southwestern Idaho has 13 charter services – more than any other region – and they feed tourism. Eastern Idaho has one of the largest regionally based charter services, taking advantage of the Jackson Hole, Snow King and Grand Targhee ski areas, Yellowstone and Grand Teton national parks and the Teton Mountain range.

Teton Aviation, one of the largest aerospace employers in the region, not only provides charter services but also serves as the regional airport's fixed-base operator. Services include hangar space, flight training, aircraft maintenance and AvJet Avionics.

Of Idaho's 283 airports, seven are commercial, 119 are for public use and the rest are general aviation. The 2008 Transportation Department analysis reports 75 of the 119 public airports it owns and operates estimated their economic value at \$2.1 billion. This includes expenditures by hundreds of on-airport businesses and millions of visitors as well as the multiplier effect associated with that spending. About 23,000 direct and indirect jobs with annual payrolls of \$718.5 million were attributed to those airports. Direct employment was estimated at 13,124. The analysis also found:

- Aviation's total economic output from the airports and visitors arriving by air was 4 percent of the state's gross product.
- Employment represented 2.9 percent of all jobs in the state.
- General aviation airports reported 439,443 visitors not including residents in 2008 who spent \$64.7 million in the local economy – an average of \$147 per visitor per trip.
- Commercial service visitors totaled 965,479 with expenditures at \$412 million.

Direct Impacts of On-airport Operations at 75 Public-use Airports, 2008				
	Employment	Payroll	Economic Output	Tax Revenue
Boise Air Terminal/Gowen Field - Boise	3,914	\$173,435,300	\$480,630,400	\$45,089,800
Friedman Memorial - Hailey	156	\$5,625,500	\$16,782,200	\$10,437,900
Idaho Falls Regional - Idaho Falls	108	\$3,922,500	\$15,033,500	\$4,608,000
Joslin Field-Magic Valley Regional - Twin Falls	206	\$8,506,800	\$31,541,600	\$2,868,900
Lewiston-Nez Perce County - Lewiston	107	\$4,527,700	\$21,414,500	\$2,039,300
Pocatello Regional - Pocatello	165	\$6,681,400	\$17,673,600	\$1,386,800
Pullman-Moscow Regional - Pullman	61	\$3,086,200	\$8,131,300	\$1,088,500
Total Commercial Service Airports	4,717	\$205,785,400	\$591,207,100	\$67,519,200
Total General Aviation Airports	1,427	\$60,337,600	\$234,027,800	\$15,821,800
All Airports Total	6,144	\$266,123,000	\$825,234,900	\$83,341,000

Source: Idaho Transportation Department, 2008 Idaho Airport Master Plan

Idaho's airports serve as vital business links and support critical services such as medical care, agricultural support, search and rescue, forest fire fighting, law enforcement, recreation and environmental services.

OCCUPATIONS

Aircraft mechanics and service technicians comprise the largest number of employed workers within Idaho's aerospace industry at 13.3 percent of the industry total. Again, because of its large population base, southwestern Idaho employs the most aircraft mechanics and service technicians.

Due to the many charter services and the Boise Airport, reservation and ticket agents comprise the second largest occupation group in the industry at 168, or 7.5 percent of the total.

SOC	Occupation	Employed in Industry Group		% of the Total Jobs in Industry Group in 2012	Change (2012 - 2022)		Median Hourly Earnings	Education Level
		2012	2022		Numeric	Percent		
49-3011	Aircraft Mechanics and Service Technicians	297	329	13.3%	32	11%	\$22.76	Postsecondary non-degree award
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	168	179	7.5%	11	7%	\$12.51	Short-term on-the-job training
53-2012	Commercial Pilots	122	137	5.4%	15	12%	\$27.96	Postsecondary non-degree award
53-2031	Flight Attendants	121	106	5.4%	(15)	(12%)	\$22.38	Moderate-term on-the-job training
43-4051	Customer Service Representatives	95	116	4.2%	21	22%	\$11.62	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	74	93	3.3%	19	26%	\$11.32	Short-term on-the-job training
53-2011	Airline Pilots, Copilots, and Flight Engineers	58	61	2.6%	3	5%	\$43.13	Bachelor's degree
49-2091	Avionics Technicians	55	62	2.4%	7	13%	\$17.76	Postsecondary non-degree award
11-1021	General and Operations Managers	53	59	2.4%	6	11%	\$32.60	Bachelor's or higher degree, plus work experience

Source: QCEW Employees—EMSI 2013.2

Aircraft Mechanics and Service Technicians

Aircraft mechanics and service technicians, who repair and perform scheduled maintenance on aircraft, totaled 300 in Idaho. The occupation is projected to grow 11 percent. Idaho Department of Labor estimates 19 openings annually from 2010 to 2020, but 15 to 16 of those will be to fill existing jobs.

Nationally, 86 percent of aircraft mechanics and service technicians work in the private sector. The rest work for governments. While the breakdown in Idaho is imprecise, the state's vast public lands and the need to maintain them put public sector employment of mechanics and technicians, primarily by the federal government at 21 percent. Private employment is concentrated in the Idaho Falls and Boise areas. Public sector employment is heaviest in north central and southeastern Idaho. However, most of the growth in this occupation is expected in northern Idaho, where EMSI projects a 52 percent increase in jobs – most of the growth in the private sector – from 63 in 2012 to 96 in 2022.

Most aircraft mechanics hold an Airframe & Powerplant certificate and know about the most cutting edge technologies and composite materials. Most receive their certificates and learn their trade at a federally approved aviation maintenance technician school. Idaho State University offers an aircraft maintenance program, and North Idaho College is getting its program started. Technicians are schooled in airframe-related welding, aircraft structural design, hardware, electrical, hydraulic and heating and air conditioning systems – knowledge that can transfer directly across industries.

Others with a high school education or equivalent are trained on the job. Some workers enter the occupation after receiving training in the military. Aircraft mechanics and avionics technicians are typically certified by the Federal Aviation Administration.

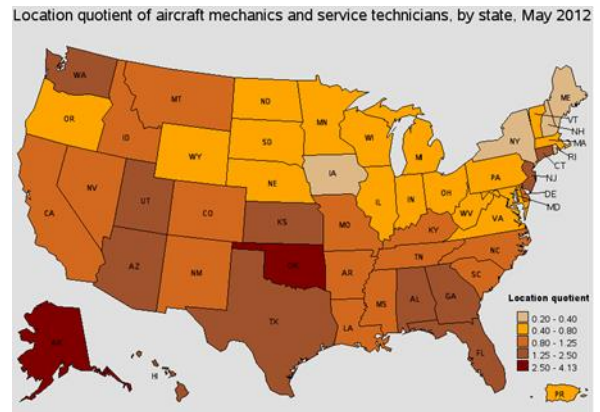
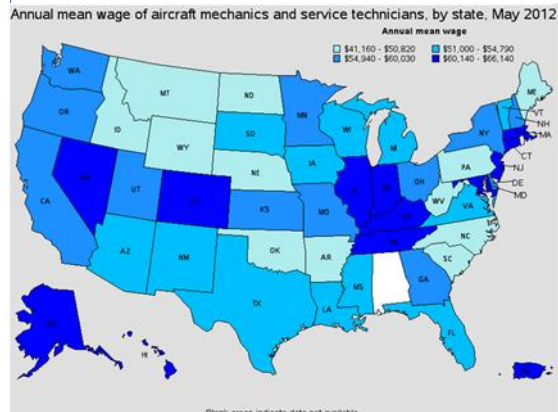
In May 2012, the median annual wage for aircraft mechanics and service technicians in Idaho was \$47,550, or \$22.76 an hour, nearly 57 percent higher than the median annual wage for all occupations. Nationwide, the median wage was \$55,210, 16 percent higher than Idaho. Idaho ranked fifth from bottom among the states in median wages paid to aircraft mechanics and service technicians in 2012 – just above Maine at \$47,860, South Carolina at \$46,520, Nebraska at \$45,320 and Arkansas at \$43,150.

Aircraft Mechanics and Service Technicians Wage Breakdown, Idaho	
Mean Wage:	
Annual:	\$48,130
Hourly:	\$23.14
Percentile Wages:	
10th:	\$31,920
25th:	\$36,270
50th:	\$47,550 (rank 46)
75th:	\$57,120
90th:	\$66,200

Source: Bureau of Labor Statistics, Occupational Employment Statistics

Idaho's Aerospace Industry

Aircraft mechanics and service technicians have a location quotient of 0.80 in Idaho, which means they account for a smaller share of all jobs in Idaho than mechanics and technicians account for all jobs nationally. Northern Idaho has the highest location quotient in Idaho at 1.29 – meaning aircraft mechanics and technicians are more prevalent in that regional economy than they are statewide. Southwestern Idaho was second at 1.17.



Sources: Bureau of Labor Statistics, Occupational Employment Statistics Program

Locations with the highest share of mechanic and technician jobs nationally are Tulsa, Okla.; Anchorage and Fairbanks, Alaska; Warner Robins and Savannah, Ga.; Seattle, Wash.; and Hawaii. The top paying states were Maryland, Connecticut, Tennessee, Alaska and Hawaii.

Idaho's Aerospace Industry

According to the Bureau of Labor Statistics' Occupational Outlook Handbook, the following occupations have similar job duties with transferable skills to those of aircraft mechanics and service technicians:

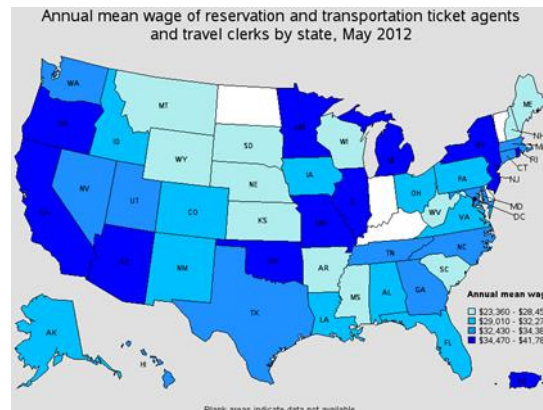
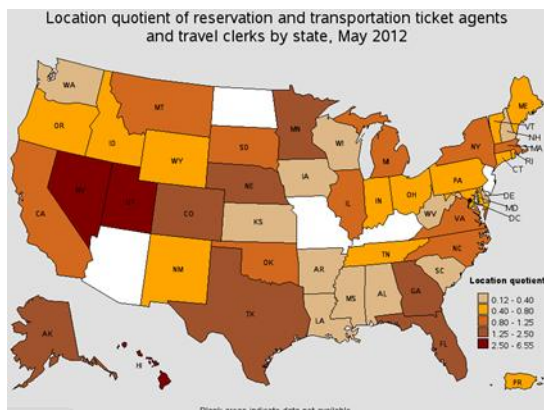
OCCUPATION	2012 Median Pay		Entry-Level Education
	U.S.	Idaho	
Aerospace Engineering and Operations Technicians	\$61,530	N/A	Associate's degree
Automotive Body and Glass Repairers	\$37,680	\$36,500	High school diploma or equivalent
Automotive Service Technicians and Mechanics	\$36,610	\$36,300	High school diploma or equivalent
Avionics Technicians	\$55,350	\$38,000	Postsecondary non-degree award
Computer, ATM and Office Machine Repairers	\$36,620	\$31,500	Some college, no degree
Electrical and Electronics Engineering Technicians	\$57,850	\$54,600	Associate's degree
Electrical and Electronics Installers and Repairers	\$51,220	N/A	Postsecondary non-degree award
Electricians	\$49,840	\$45,900	High school diploma or equivalent
Electro-mechanical Technicians	\$51,820	\$64,100	Associate's degree
Heavy Vehicle and Mobile Equipment Service Technicians	\$43,820	N/A	High school diploma or equivalent
Industrial Machinery Mechanics	\$46,920	\$44,900	High school diploma or equivalent
Mechanical Engineering Technicians	\$51,980	\$57,600	Associate's degree
Network and Computer Systems Administrators	\$72,56	\$53,700	Bachelor's degree

Source: Bureau of Labor Statistics, Occupational Outlook Handbook

Reservation and Transportation Ticket Agents and Travel Clerks

Reservation and transportation ticket agents and travel clerks make and confirm reservations for transportation or lodging or sell transportation tickets. There are 168 people in this occupation statewide, representing 7.5 percent of total aerospace industry employment. Only minimal growth is expected, about 7 percent from 2012 to 2022, according to EMSI. Idaho Department of Labor estimates eight annual openings from 2010 to 2020 but only two to fill new jobs.

The median hourly wage for this occupation was \$12.51, or \$26,020 annually in 2012, 16.5 percent lower than all occupations. Nationwide, the median wage was \$32,400, nearly 25 percent higher than in Idaho.



Sources: Bureau of Labor Statistics, Occupational Employment Statistics Program; Bureau of Labor Statistics, Occupational Outlook Handbook.

Commercial Pilots

Commercial pilots are different than airline pilots, who fly regularly scheduled passenger flights. Commercial pilots fly for other reasons, and in Idaho that is likely charters as well as rescue operations, firefighting, aerial photography and crop dusting. Most airline pilots begin their careers as commercial pilots.

Nearly a quarter of commercial pilots are employed with nonscheduled chartered passenger air transportation businesses across Idaho – predominantly in southwestern and northern Idaho. Another 18 percent work for scenic and sightseeing transportation outfits.

There are approximately 120 commercial pilots employed in Idaho. EMSI projects a 12 percent increase in this occupation from 122 in 2012 to 137 by 2022, primarily to replace pilots reaching the mandatory retirement at age 65. EMSI estimates 51 percent of the current workforce is between 45 and 64.

Idaho's Aerospace Industry

Although only 5.4 percent of Idaho's aerospace workers are commercial pilots, Idaho's location quotient is 1.36 – showing a large concentration comparatively. Alaska has the highest location quotient at 10.06. Maryland has the lowest at 0.17.

Commercial pilots earn, on average, nearly double that of all occupations in Idaho. But with a median annual salary of \$58,157, Idaho is third to last among the states in median pay – just ahead of North Dakota at \$51,830 and Maine at \$43,880. The top paying states are Georgia at \$107,210 and Minnesota at \$96,680.

Commercial Pilots Wage Breakdown, Idaho

Mean Wage:

Annual: \$60,580

Hourly: N/A

Percentile Wages:

10th: \$21,710

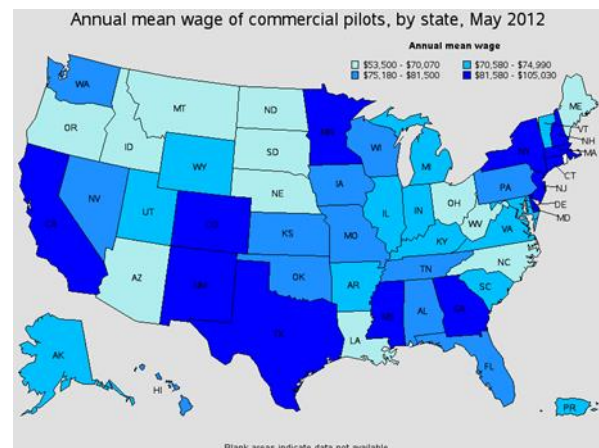
25th: \$44,050

50th: \$55,690 (rank 48)

75th: \$81,680

90th: \$100,280

Source: Bureau of Labor Statistics, Occupational Employment Statistics Program



Source: Bureau of Labor Statistics, Occupational Employment Statistics Program

Commercial pilots are licensed and typically need a high school diploma or the equivalent. Some employers will have additional requirements. For example, agricultural pilots need to have an understanding of common agricultural practices, fertilizers, fungicides, herbicides and pesticides. Flight instructors must have special federally issued ratings such as the Certified Flight Instructor and certified in instrument flight, multi-engine planes and other specialties ranging from glider and banner towing to helicopter and airship qualifications.

Commercial pilots typically begin their flight training with independent Federal Aviation Administration-certified flight instructors or at schools that offer flight training. The FAA certifies hundreds of civilian flight schools, which range from small fixed-base operators to large state universities. Some colleges and universities offer pilot training as part of a two- or four-year aviation degree. Regardless of whether pilots attend flight schools or learn from independent instructors, all pilots need the FAA's commercial pilot license before they can be paid to fly. Most also need an instrument rating, which are typically needed to fly through clouds or other conditions that limit visibility. An instrument rating is required to carry paying passengers over 50 miles from the point of origin or at night.

According to the Bureau of Labor Statistics' Occupational Outlook Handbook, the following occupations have similar job duties with transferable skills to those of commercial pilots:

OCCUPATION	Median Pay		Entry-Level Education
	U.S.	Idaho	
Air Traffic Controllers	\$122,500	\$73,800	Associate degree
Aircraft Mechanics and Technicians	\$55,230	\$47,500	Part 147 FAA-approved program
Avionics Technicians	\$55,300	\$38,000	Part 147 FAA-approved program
Construction Equipment Operators	\$41,900	\$40,800	High school diploma or equivalent
Railroad Occupations / Engineer	\$52,400	\$45,600	High school diploma or equivalent
Flight Attendants	\$37,240	N/A	High school diploma or equivalent
Heavy and Tractor-trailer Truck Drivers	\$38,200	\$35,800	Postsecondary non-degree award

Source: Bureau of Labor Statistics, Occupational Employment Statistics Program

Avionics Technicians

Although avionics technicians only make up 2 percent of Idaho's aerospace workers, their skillset is similar to what many manufacturing operations seek. Related occupations include electronics engineering technicians, electrical engineering technicians, mechanical engineering technicians and manufacturing production technicians as well as aircraft mechanics and service technicians.

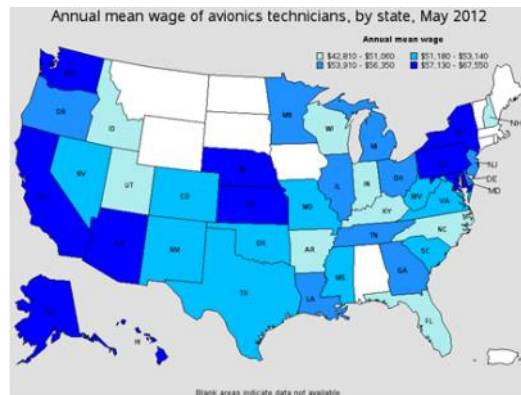
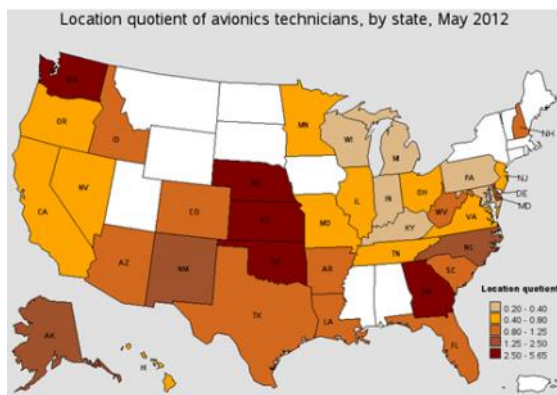
The majority of avionics technicians are employed in support activities for transportation in southwestern Idaho. The occupation is projected to increase 13 percent from 55 in 2012 to 62 in 2022. Integration of avionics technology, use of advanced radar systems and sensors and advanced communications technology will be instrumental in the advancement of military aircraft and agricultural purposes over the next decade.

Idaho avionics technicians are the lowest paid in the country with a median wage of \$37,970. Kentucky is next to last at \$38,800, and Hawaii is the highest at \$71,390. Avionics technicians typically earn an associate degree before entering the occupation.

The location quotient is higher than most states around the country—1.06. Employment is concentrated around the Boise MSA (LQ=2.20).

Avionics Wage Breakdown, Idaho	
Mean Wage:	
Annual:	\$42,810
Hourly:	\$20.58
Percentile Wages:	
10th:	\$32,460
25th:	\$34,530
50th:	\$37,970 (rank 50)
75th:	\$53,750
90th:	\$57,840

Source: Bureau of Labor Statistics, Occupational Employment Statistics Program



Air Traffic Controllers

Air traffic controllers coordinate the movement of air traffic to ensure that aircraft stay safe distances apart. Air traffic controllers' primary concern is safety, but they also must direct aircraft efficiently to minimize delays. They manage the flow of aircraft into and out of the airport airspace, guide pilots during takeoff and landing, and monitor aircraft as they travel through the skies. Their roles will become increasingly important as more airspace will be allowed for unmanned aircraft system activity.

The FAA has not reduced, and does not expect to reduce the overall number of controllers although total air traffic has fallen since 2000. Even though air traffic is expected to increase, employment growth will not keep pace because the FAA already has enough personnel. Federal budget constraints should also limit hiring new controllers. In the long term, the Next Generation Air Transportation System that will rely on satellites is expected to allow individual controllers to handle more air traffic.

The FAA sets guidelines for schools to offer specific programs called the Air Traffic Collegiate Training Initiative, or AT-CTI. These schools offer two- or four-year degrees preparing students for careers in air traffic control. The curriculum is not standardized, but courses focus on aviation fundamentals like aviation weather, airspace, clearances, reading maps and federal regulations.

Air Traffic Controllers Wage Breakdown, Idaho

Mean Wage:

Annual: \$78,380

Hourly: \$37.69

Percentile Wages:

10th: \$51,970

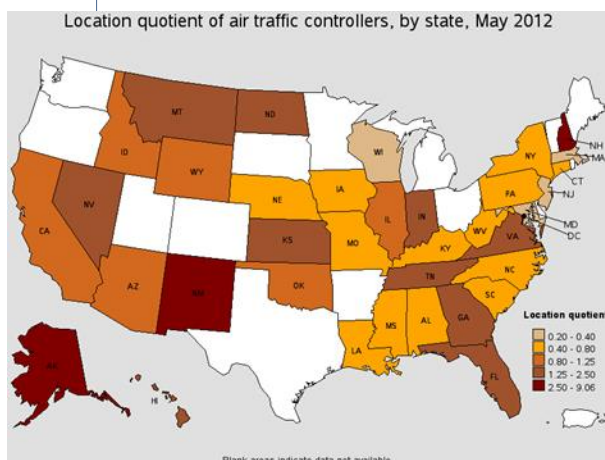
25th: \$59,310

50th: \$73,780 (rank 48)

75th: \$93,070

90th: \$114,610

Source: Bureau of Labor Statistics, Occupational Employment Statistics Program



SUPPLY AND DEMAND

Supply Chain

According to the Inland Northwest Aerospace Industry Workforce Development Survey conducted by University of Idaho in 2010, on average companies reported 64 percent of their suppliers were in Idaho or Washington while the rest were farther away.

Machining suppliers were most needed by respondents of the survey. Seventy-two percent reported those suppliers were located locally. Other commonly cited suppliers included welders, sheet-metal manufacturers, plating facilities, heat treating facilities and engineering suppliers.

Promotion of the aerospace industry in Idaho has been under way for some time. An initiative was started in northern Idaho to establish the Idaho Aerospace Alliance to discover how wide and varied the industry is, to bring companies together to share information and to find ways to work together fostering growth for Idaho businesses. The alliance would also promote the industry and try to attract new businesses to the state.

To help connect employers who directly and indirectly manufacture or provide services to the aerospace industry with alliance members, the Idaho Department of Labor conducted a phone survey in early 2013.

The Labor survey and additional research found another 111 companies involved in aerospace that were not included in the taxonomy used for this report. Those businesses employ 1,725 across the state.

An additional 20 companies employing 906 could be involved in the aerospace industry, but that involvement could not be confirmed

Most suppliers and aerospace companies were in southwestern, northern and eastern Idaho. Most were small machine shops looking to capture a larger share of the market and supported Idaho's promotional campaign to expand the aerospace industry.

Boeing, the largest aerospace company in the Pacific Northwest, has 51 suppliers and vendors in Idaho in 2012 and purchased over \$13 million in their products.

Pulling together the various aerospace companies statewide will take time. The departments of Labor and Commerce, educational institutions and local businesses are collaborating through periodic meetings, conferences and industry gatherings designed to discover ways to more effectively promote Idaho as a Center of Excellence for the aerospace industry.

Education and Training

Pending retirements represent a devastating loss of skill, experience and intellectual capital for the industry, but the loss of skill can be made up by regional education programs that offer Idaho employers the training needed in their workers to build their aerospace businesses. For example, Empire Airlines in Hayden recruits mainly at Kansas State University and Western Aircraft in Boise recruits at Idaho State University, Utah State University and Redstone College, according to company officials.

Schools have either accommodated or have plans to accommodate the training needs of Idaho employers.

North Idaho College recently received \$3 million through a U.S. Department of Labor Trade Adjustment Act Community College and Career Training Grant to fund an Aerospace Manufacturing program. Over three years, 495 participants will take a series of courses that stack portable, industry-recognized credentials. North Idaho College has created an Aerospace Center of Excellence with the grant. Aerospace Composite Technology is the center's first program, launched in fall 2013. Planned are aerospace manufacturing, which features accelerated learning and certification within 12 weeks, and aviation maintenance-airframe, a 10-month FAA certification program.

Idaho State University through its Aircraft Maintenance Technology Program offers:

- Technical Certificate Airframe
- Advanced Technical Certificate Powerplant, which includes airframe
- Associate of Applied Science Degree Airframe and Powerplant

Each year, the school receives more requests for graduate placement for aircraft maintenance technicians than it can fill.

Boise State University College of Engineering is preparing its students for careers in aeronautics by creating aerospace as a minor in the engineering program.

Idaho State University Department of Geosciences Boise Center Aerospace Laboratory was established in 2004 with a grant from the National Oceanic and Atmospheric Administration. Although the center does not currently train aerospace workers, it could. The center's mission is to provide the Intermountain West with expertise, leadership and coordination of remote sensing research and applications and to provide education and training programs that promote remote sensing and spatial technologies.

Spokane Community College in collaboration with the Inland Northwest Aerospace Consortium has developed an aerospace industry driven quality assurance-quality control course for businesses and workers in the region. This AS9100 course is the first of five free

courses being developed. The school is also expanding the Spokane Aerospace Technology Training Program to include Airframe Part 147 courses, aviation, airframe and powerplant and air traffic control. During the 1980s, a mandatory retirement age was imposed on air traffic controllers, and now a national shortage of up to 12,000 controllers is expected within the next five years. Over the next year, two of the four Spokane Community College programs will be completed.

Demand

The commercial and defense markets are the two major segments of aerospace manufacturing. Defense is the smaller of the two, and this segment depends on the U.S. government for a significant share of its sales. Defense contracts are important because they can offset downturns in commercial demand.

Air Travel Demand

According to Airbus' latest Global Market Forecast and Boeing's Current Market Outlook – both covering 2013 through 2032, 29,000 to 36,000 new airplanes will be required to meet new passenger and freight aircraft demand. That is nearly double the current worldwide fleet. Both conglomerates project air traffic will grow 4 percent to 5 percent annually. According to Boeing, every 15 years, the industry doubles in size.

Today, the United States leads in passenger travel, capturing 15 percent of the world market. By 2032, the U.S. is projected to fall to third with 22 percent of the market while the Asia-Pacific market is projected to grow to 27 percent.

Increasing passenger freight and demand is also occurring at Idaho airports. As more major businesses locate to Idaho, business traffic will expand.

Airplanes in service 2012 and 2032			Demand by size 2013 to 2032		
Size	2012	2032	Size	New airplanes	Value (\$B)
Large widebody	760	910	Large widebody	760	260
Medium widebody	1,520	3,610	Medium widebody	3,300	1,090
Small widebody	2,310	5,410	Small widebody	4,530	1,100
Single aisle	13,040	29,130	Single aisle	24,670	2,290
Regional jets	2,660	2,180	Regional jets	2,020	80
Total	20,310	41,240	Total	35,280	4,840
			* \$ values throughout the CMO are catalog prices.		

Current Market Outlook
2013-2032

Source: Boeing Current Market Outlook, 2013-2032

Oil Prices

Like all modes of transportation, the price of oil is a major consideration. New technologies and innovations are always evolving, making aircrafts more fuel efficient. The U.S. aerospace sector has been living off the research investments made primarily for defense during the Cold War. Today, research areas that provide potential for breakthroughs in aerospace capabilities include:

- Information technology
- Propulsion and power
- Noise and emissions
- Energy sources
- Nanotechnology

The most recent has been the introduction of Tamarack Aerospace Group's revolutionary "active winglet." The world's first active winglet dramatically increases the fuel efficiency and range of a winged aircraft.

Fuel expenses cut into profits for any business, and when fuel costs constitute roughly 12 percent of operating expenses in good times, it becomes critical. In 2013, fuel costs accounted for 31 percent of operating expenses globally for airlines, according to the International Air Transport Association.

The Department of Defense is also adversely impacted by oil prices. In FY2000, fuel costs represented 1.2 percent of total defense spending. By FY2008, fuel costs had risen to 3 percent.

USAF new Tanker Program awarded to Boeing

Everett, Wash., is heading up the new KC46A Tanker Program and estimates an additional 1,000 people will be employed. First delivery is expected in 2015 or 2016. Eighteen tankers will be delivered by 2017 with production ramping up to 15 tankers a year. Production will end in 2027 with a total of 2,000 tankers manufactured. This project will impact 50,000 U.S. jobs and more than 800 suppliers in over 40 states.

APPENDIX A – TAXONOMY

Idaho's Aerospace Industry

Aerospace Industry Classification
334511
336411
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