

Greater Seattle

Create. Connect. Come Join Us.



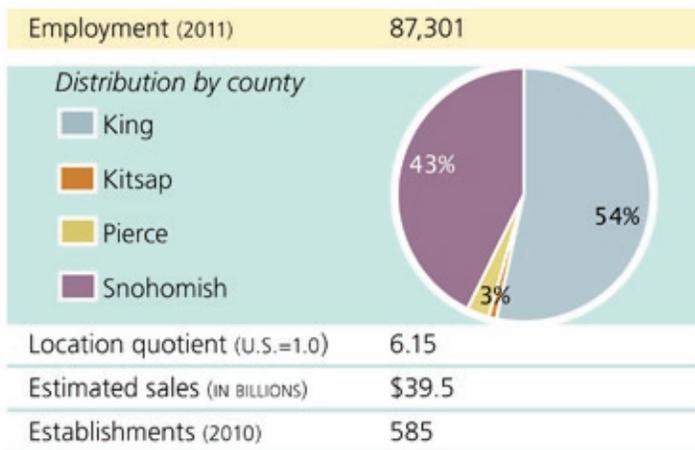
A Global Center for Aerospace

Greater Seattle and Washington state are the center of the world's aerospace industry. We are home to Boeing Commercial Airplanes and final production for the 737, 747, 767, 777, 787 Dreamliner, the 737 MAX, and 1,250 aerospace-related companies. Our expertise and synergies with other high-tech industries have positioned Greater Seattle and Washington as the global hub for the aerospace industry of today – and tomorrow.

UNMATCHED EXPERTISE AND EFFICIENCY

No other industry base in the world can design and assemble aerospace components and materials as efficiently and capably as Washington state. Our aerospace industry is renowned for its integrated supplier network, training and education, research, and sub-sector specialization in Unmanned Aviation Vehicles (UAVs), advanced composites, and aviation biofuels. These advantages combined with no state income tax and multiple incentives for aerospace companies, position Washington state as the destination of choice for the world's top aerospace firms.

Snapshot of cluster dynamics in the Puget Sound Region



SOURCE: EMSI — Complete Employment.

Industry snapshot for Washington state

Aerospace-related firms: 1,250
Aerospace workforce: 131,000
Aerospace exports: >\$27 billion
Source: Governor's Office of Aerospace and Aerospace Competitiveness Study (2011)

Incentives

No state income tax
Reduced B&O tax
B&O tax credits – preproduction, property taxes, R&D, and training

Some of our principle aerospace employers

Aerojet
Aviation Technical Services
Blue Origin
Boeing Commercial Airplanes
Crane Aerospace & Electronics
Esterline Technologies
Heath Tecna
Insitu
Janicki Industries
Orion
Teague

Some of our international aerospace firms

Achilles USA / Japan
AIM Aerospace / England
Cascade Aerospace / Canada
Dassault Systemes / France
Fokker Elmo / Netherlands
IDD Aerospace / France
Safran / France
Toray Composites America Inc / Japan
Umbra Cuscinetti / Italy

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WASHINGTON STATE'S AEROSPACE SUPPLY CHAIN

Some 400 suppliers are located in the Greater Seattle area. These firms produce products, parts, and components for the global aerospace market, from the interiors of private jets to GPS receivers.

Washington State's Integrated Supply Chain

Composite manufacturing
Airframe manufacturing
Avionics/avionics systems
Engineering
Interior design
Machining
Tooling

INDUSTRY PROFILE: BOEING

As the Alaskan Gold Rush unfolded, Greater Seattle became a vital area for prospectors in Alaska and Canada. The challenge of accessing these remote settlements inspired local entrepreneur William Boeing to develop a flying mail service airplane and found The Boeing Company in 1916.

Early innovations

During World War II Boeing became a top producer of military and commercial aircraft. The company was also developing some of the world's first satellites, transmitting communications from space. A big breakthrough came in 1969 when Boeing provided technical integration for the Apollo space program that put man on the moon. Boeing went on to develop the world's first pressurized cabin system, the first twin aisle cabin (the "jumbo jet"), and more.

New discoveries and the future

Boeing continues to pioneer innovations that are transforming global air travel. The new 787 Dreamliner uses 20% less fuel than a comparable jet. A Boeing jetplane was the first to fly on aviation biofuels. Boeing continues to invent lighter weight, more fuel efficient jetplanes, serving more and more of the world's air travelers.

Around 70 percent of Boeing's commercial airplane revenue comes from customers from outside the US. With international demand for air travel increasing, this number is only expected to go up.

OUR WORLD-CLASS WORKFORCE

Occupation	U.S. Ranking By Concentration
Aerospace Engineers	#1
Aerospace Engineering and operations technicians	#1
Software developers (Applications)	#1
Materials scientists	#3
Avionics technicians	#4
Physicists	#4

Source: U.S. Department of Labor, Bureau of Labor Statistics

A world-class workforce isn't born overnight. It is shaped and supported by the coordinated efforts of industry, education, government, and research. A constellation of 22 community colleges and technical institutes, together with colleges and major research universities around the state offers education and training in all areas of the aerospace industry.



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Aerospace education and training

22 Community and technical colleges with aerospace programs

\$40 million/year in funding

Statewide aerospace apprenticeship program

Specializations: advanced composites and manufacturing, tooling, machining, computer aided design, avionics, electronics, aviation maintenance

Washington State University	http://www.wsu.edu
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Benaroya Research Center	http://www.benaroyaresearch.org
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AEROSPACE RESEARCH

Innovations in aerospace are powered by research. Washington state is home to the largest public recipient of federal research dollars in the US, multiple public and private research institutes, and a coordinated aerospace research institute between the University of Washington and Washington State University, our largest educational institutions.

Total R&D Investment, Dollars per Capita (2003-2007)

#5 Washington \$2000

Source: State of Washington's Economic Climate Study, Washington State Economic and Revenue Forecast Council, 2011

Major research institutions

University of Washington	https://www.washington.edu
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Joint Center for Aerospace Technology Innovation	
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Pacific Northwest National Labs	http://www.pnl.gov
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Battelle	http://www.battelle.org
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AEROSPACE SUBSECTORS

In addition to commercial aerospace, Washington state companies are global leaders in space exploration, advanced composites, unmanned aerial vehicles, and aviation biofuels.

Space exploration and telemetry

Spacelabs Healthcare developed the wireless monitoring system used to track vital signs for NASA astronauts in the 1950s. Today Spacelabs develops and manufactures medical technology products for the world.

<http://www.spacelabshealthcare.com/en>

Blue Origin was established by Amazon.com founder Jeff Bezos to develop technologies for commercial space transportation.

<http://www.blueorigin.com>

Planetary Resources is developing robotic spacecraft that can explore and assess the mineral resources of asteroids.

<http://www.planetaryresources.com>

Unmanned Aerial Vehicles (UAVs)

Insitu designs and manufactures UAVs for multiple uses, including weather and environmental reconnaissance, search and rescue, and defense.

<http://www.insitu.com>



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Advanced materials and composites

Heath Tecna became the first in the aircraft industry to use Kevlar, a lightweight composite material. Today, the company is a leader in cabin furnishing and retrofitting.

<http://www.heath.com/Home.aspx>

Janicki Industries introduced composites to the marine manufacturing industry and has expanded to include aerospace, transportation, and clean energy applications.

<http://www.janicki.com>

Toray Composites (America), Inc., founded to ensure “just in time” delivery for Boeing 777 projects, makes composite materials for aerospace, sports, and industry applications around the world.

<http://www.toraycompam.com>

Aviation Biofuels

Northwest Advanced Renewables Alliance and Advanced Hardwood Biofuels Northwest are building a biofuels supply chain for the Pacific Northwest.

<http://nararenewables.org> and <http://ahb-nw.com>

Imperium Renewables operates the largest biodiesel refinery in the US, developing fuels for the automotive, aviation, and shipping industries.

<http://www.imperiumrenewables.com>

Photo credit Johnson Space Center



Trade Development Alliance of Greater Seattle

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Resources

State

Governor's Office of Aerospace
<http://www.governor.wa.gov/priorities/economy/aerospace.asp>

Washington Aerospace Partnership (WAP) <http://www.washington-aerospace.com>

Washington Aerospace & Advanced Materials Manufacturing Workforce Pipeline Committee

Aerospace Joint Apprenticeship Committee <http://www.ajactraining.org/index.asp>

The Center for Excellence in Aerospace and Advanced Materials Manufacturing <http://www.a2m2.net>

Regional

Aerospace Tacoma-Pierce County
<http://www.aerospacetacomapierce.com>

Inland Northwest Aerospace Consortium <http://www.inwac.com>

King County Aerospace Alliance
<http://www.kingcounty.gov/exec/constantine/KCAA.aspx>

Pacific Northwest Aerospace Alliance (PNA) <http://www.pnaa.net>