

AEROSPACE



Photo credit: Boeing Dreamscape

greater seattle

A GLOBAL CENTER FOR AEROSPACE

Greater Seattle and Washington State are the center of the world's aerospace industry. We are home to over 1,350 aerospace related companies, and are responsible for 95% of all commercial airplane production in the United States. Almost every airplane manufactured in the United States took its maiden flight in the Puget Sound region. The 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.

THE AEROSPACE CAPITAL OF THE WORLD

BEST OF THE BEST

Over the last century, Greater Seattle has been at the forefront of designing, engineering, and manufacturing some of the most advanced and successful commercial and military aircraft, unmanned aerial systems, and space exploration vehicles in the world.

Washington State aerospace companies produce approximately 1,400 aircraft annually, including nearly 700 commercial and military jets and 700 unmanned aerial vehicles. The aerospace sector is as diverse as it is extensive. Companies in the region supply a wide range of products and services, from aircraft interiors and composite structures to the giant machines that craft wing panels.

The world has taken note of the expertise and resources that Washington State offers and many global giants are establishing operations in the Greater Seattle region.

TOP-FIVE AEROSPACE COMPANIES IN WASHINGTON BY NUMBER OF EMPLOYEES

Rank	Company	City	Number of Employees
1	Boeing	Seattle	80,199
2	Aviation Technical Services	Everett	1,500
3	Esterline Technologies Corp.	Bellevue	1,215
4	Crane Aerospace & Electronics	Lynnwood	1,000
5	Honeywell Aerospace	Redmond	800

Source: Puget Sound Business Journal

PROMINENT INTERNATIONAL AEROSPACE COMPANIES IN WASHINGTON STATE

- Mitsubishi Aircraft Corp.
- Delta Airlines
- Umbra Cuscinetti Inc.
- Safran
- Toray Composites Inc.
- Hainan Airlines
- Zodiac Aerospace
- Alaska Airlines
- AIM Aerospace
- Aerjet
- Dassault Systemes
- UTC Aerospace Systems
- Fokker Elmo Inc.



Photo credit: Jetstar Airways

Education & Research

Stellar educational programs are instrumental to continued growth within the aerospace industry. Washington State is home to many acclaimed educational programs and institutions that focus on everything from engineering to manufacturing.

The **Washington Aerospace Training & Research Center**, which opened in 2010, is managed by Edmonds Community College. It is an educational resource for career pathways in the aerospace and manufacturing industry. The Center offers a 12 week program that teaches students the skills required for the high-skilled jobs in the industry.

At the **University of Washington**, the **William E. Boeing Department of Aeronautics and Astronautics** offers a world class education in the field of aerospace engineering. The department is closely affiliated to numerous regional industry leaders and boasts an impressive track record of past graduates, projects, and innovative research.

INDUSTRY PROFILE

THE BOEING COMPANY

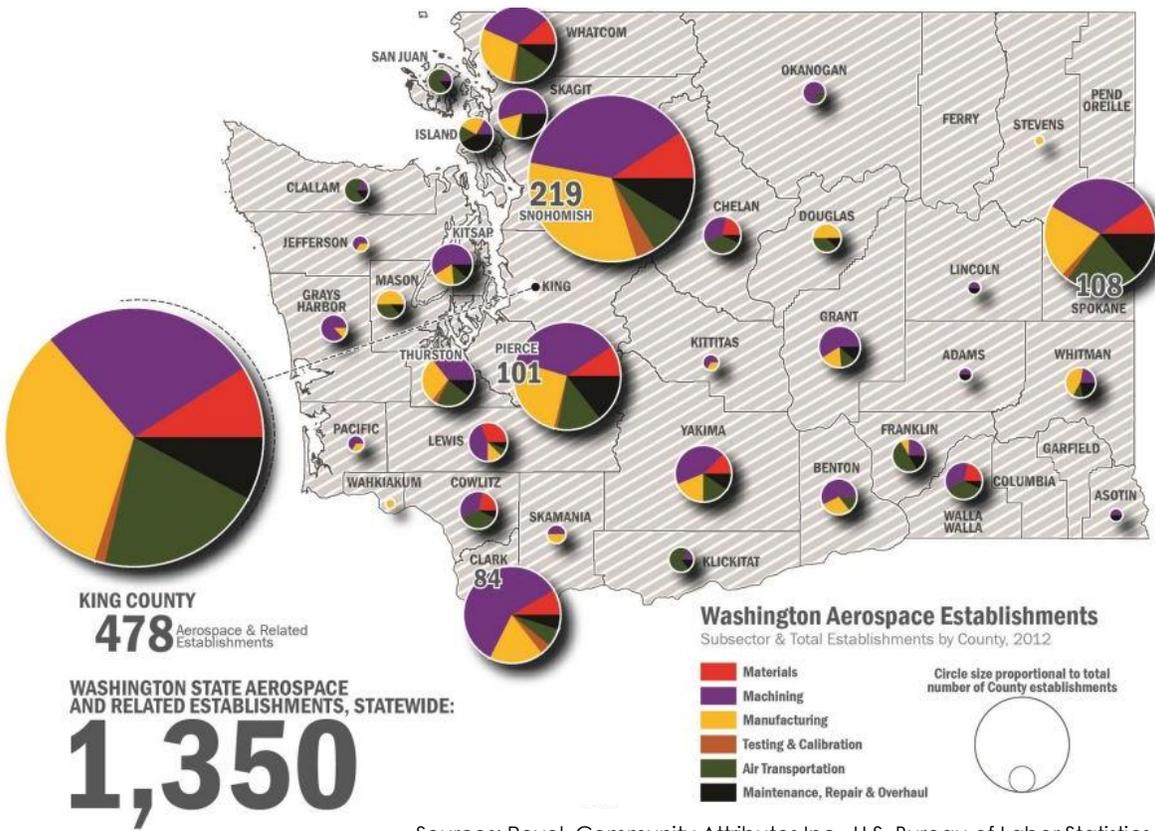
It is no secret that the aerospace industry in Washington revolves primarily around one company: The Boeing Company, or more specifically, the business unit of the company called: Boeing Commercial Airplanes which is headquartered in Seattle. Boeing has offices and production plants throughout the Puget Sound region, and became a world leader shortly after it was founded in 1916.

More than 10,000 Boeing-built commercial jetliners are in service worldwide, which is roughly 48 percent of the world fleet. A record-setting almost 5,800 further airplanes, worth \$440 billion, are on order. The company also offers the most complete family of freighters, and about 90 percent of the world's cargo is carried onboard Boeing planes.

Boeing Commercial Airplanes posted \$60 billion in revenues in 2014, and their presence in the region has facilitated the emergence of over 1350 aerospace related companies. It is the epitome of a global company with over 70% of sales going to customers outside of the United States.



Boeing's Global Presence & Partnerships
Source: Boeing.com



Sources: Revel, Community Attributes Inc., U.S. Bureau of Labor Statistics

FUN FACTS AND ACHIEVEMENTS:

- The Boeing Everett Factory (pictured above) is the world's largest building by volume.
- Seattle-Tacoma International Airport is the fastest growing major airport in the United States. Passenger rates rose 7.5% in 2014
- There is at least one aerospace-related company in 35 of Washington's 39 counties.

AEROSPACE SUPPLY CHAIN

The deeply rooted aerospace industry in Washington has spurred the development of an integrated supply chain. Providers of all manners of goods and services directly linked to the aerospace industry have thrived in due to the high regional demand from airplane manufacturers. Notable subcategories within the supply chain include:

- Composite Manufacturing
- Airframe Manufacturing
- Avionics/Avionics Systems
- Interior Design
- Tooling
- Machining
- Engineering

ECONOMIC IMPACT

- In 2014, the aerospace industry in Washington supported \$85.7 billion in business revenues.
- In 2014, gross revenues tied to aerospace, industry-wide, totaled nearly \$59.5 billion (estimated), up from \$52.7 billion in 2012.
- The largest sources of revenues for Boeing in 2014 came from sales of the 737 (an estimated \$24.4 billion in sales) and the 777 (\$16.9 billion).
- Boeing Commercial Airplanes purchased an estimated \$1.1 billion in goods from other aerospace businesses in Washington in 2014.

Source: 2015 Economic Impact Study, Community Attributes Inc.

SEA-TAC AIRPORT

Sea-Tac Airport ranks 19th in air cargo volume in North America and is the third largest airport for international cargo on the West Coast. The airport offers daily, non-stop service to 77 domestic and 19 international destinations. In 2014, 327,240 metric tons of cargo were transported through Sea-Tac, constituting an 11.8% increase from the previous year.

Sea-Tac is also a major passenger hub. Air passengers in 2014 totaled 37,497,941 making it the 22nd busiest U.S. commercial service airport.



Non-stop air cargo routes from Sea-Tac airport.

Source: Port of Seattle

RESOURCES:

Department of Commerce

<http://www.commerce.wa.gov/Economic-Development/Industry-Sectors/Pages/Office-of-Aerospace.aspx>

Washington Aerospace Partnership

<http://www.washington-aerospace.com>

Washington Governor's Office of Aerospace

<http://www.governor.wa.gov/issues/issues/economy/aerospace>

Washington Aerospace Training & Research Center

<http://washingtonaerospace.com>

The Joint Center for Aerospace Technology Innovation

<http://www.jcati.org>

Choose Washington

<http://choosewashingtonstate.com/wy-washington/our-key-sectors/aerospace/>

Boeing Commercial Airplanes

<http://www.boeing.com/commercial/>

University of Washington's Department of Aeronautics and Astronautics

<https://www.aero.washington.edu>

INDUSTRY SUBSECTORS

Space Exploration & Telemetry

Headquartered in Kent, Washington, **Blue Origin** was established in 2000 by Amazon.com founder Jeff Bezos to develop technologies for commercial space transportation. It is working to develop technologies to enable private human access to space with the goal of dramatically lowering costs.

<https://www.blueorigin.com/>

Unmanned Aerial Vehicles (UAVs)

Insitu, from Bingen, Washington, is a pioneer leader in the design, development, production and operation of high-performance, cost-effective unmanned aircraft systems. It designs and manufactures UAVs for multiple uses, including weather and environmental reconnaissance, search and rescue, and defense.

<http://www.insitu.com/>

Advanced Materials & Composites

Zodiac Airline Cabin Interiors Washington was the first in the aircraft industry to use Kevlar, a lightweight composite material. Today, the company is a leader in innovating cabin furnishing and retrofitting.

<http://www.zodiacair.com/>

Aviation Biofuels

Seattle-based Imperium Renewables operates the largest biodiesel refinery in the US, developing fuels for the automotive, aviation, and shipping industries. Their refinery in Hoquiam, Washington, is capable of producing up to 100 million gallons per year.

<http://www.imperiumrenewables.com/>



TRADE DEVELOPMENT ALLIANCE of greater seattle

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