

**US Senate Committee on Commerce, Science and Transportation  
Senate Aviation Subcommittee Field Hearing  
October 24, 2011**

**“The Aviation Workforce: Industry and Labor Perspectives on  
Training Needs and Challenges”**

Testimony presented by Michael Greenwood  
Senior Manager for Boeing Commercial Aircraft Manufacturing & Quality  
The Boeing Company

Good morning Sen. Cantwell, and members of the Subcommittee. My name is Michael Greenwood, Senior Manager for Boeing Commercial Aircraft Manufacturing and Quality supporting Training Integration and Workforce Development. Thank you very much for the opportunity today to share my thoughts about the training needs of the aviation workforce.

We are all acutely aware of the state of the economy and unemployment in the United States and here in Washington state. Today I would like to highlight opportunities for workforce growth and sustainable job creation across the aviation industry and improvements that we at the Boeing Company are making in the education and training sectors to ensure that we have skilled people to fill future aviation jobs. Through collaborative partnerships with federal, state and local governments; academia; labor and industry, The Boeing Company is focusing its efforts in developing a qualified and skilled workforce to ensure we remain the world leader in the aviation market – a market that is growing and becoming increasingly more competitive. I want to make special note here of the unprecedented support we have received from the U.S. Department of Labor through the grant it recently awarded to the Air Washington consortium in support of Aerospace workforce development in Washington state. Thank you, madam chair, for your assistance in securing this critical investment in our collective future. Our collaboration across sectors will ensure that these valuable resources are focused on the most efficient and sustainable programs supporting workforce development for the industry.

I would like to focus on a few main actions that are vital to the continued success of the aviation workforce in the coming years. Collectively, we must:

- Continue to invest in education and training programs to support the technical skill set required for the aerospace industry.
- Connect academia with industry to define skills needed for the jobs of tomorrow and develop short-term training programs to ensure job seekers get into the workforce quickly.
- Encourage and invest in experiential learning through shop classes, vocational education, internships and apprenticeships.
- Engage all demographics including students in our K-12 system, unemployed workers and veterans.

These actions are imperative to our joint success in supporting a vibrant and well-prepared workforce for the aerospace and manufacturing industries in the United States.

## BOEING IS GROWING AND CREATING JOBS

As a company, Boeing is growing and hiring skilled talent. We will require knowledgeable workers from many trades to fill our workforce in the years to come. In Washington, Boeing jobs equate to jobs throughout the region; for every job that Boeing creates, it supports 3 additional jobs in the community.

This year has marked many tremendous milestones for Boeing: in February we won the intense competition to build the KC-46 – the U.S. Air Force’s next tanker, in September we delivered the first 787 to Al Nippon Airways, and this month marked the first delivery of the new 747-8 to Cargolux. These milestones alone do not ensure our success. If we cannot provide airplanes in the timeframes required by our customers it is likely they will look to other manufacturers to satisfy their fleet needs. So as the business grows, we must also increase our capacity by growing our workforce to create the products our customers demand.

To keep up with market demand for single-aisle airplanes, the 737 program will increase production to 42 airplanes per month by mid-2014. A 33% increase from the current rate

of 31.5 airplanes per month. Over the next 2 years, Boeing will increase the production rate for each of its other commercial aircraft including the 747, 767, 777 and 787.

Boeing's highly skilled workforce is a key asset to developing and delivering the world's greatest aerospace products. Boeing employment levels continue to increase, fueled largely by the earlier mentioned strong demand for commercial airplanes. Boeing added more than 7,000 people to its workforce in Washington state since the beginning of year. This brings our total workforce in Washington to over 80,000 workers! It is clear that our people are our strategic advantage.

## THE WORKFORCE OF TOMORROW

To attract and retain the most talented and diverse workforce of tomorrow, we need to inspire the next generation of youth today. Just as the race to the moon inspired the youth of generations past, our mission is to excite today's youth about careers in aerospace and manufacturing well before they are ready to enter the workforce. By engaging with students, teachers, guidance counselors, administrators, parents and mentors we are working to improve the perception of aerospace and manufacturing jobs in the United States.

We need to change the perception that these are "dirty jobs" into one that reflects reality: that these are high-tech, challenging, fulfilling jobs that pay a family wage. We want to demonstrate that the aerospace industry is a place where students can apply their math and science skills in new ways that are fun and innovative, where veterans can apply the skills they learned in the field, and where people can make a meaningful career for themselves.

In Washington state, we are engaging with Career Technical Educators responsible for vocational education in K-12 to build manufacturing career path programs which will provide students a defined course of study to prepare them for careers in Aerospace and Manufacturing. This year, we partnered with Yakima Valley Technical Skills Center to deploy a new aviation and manufacturing curriculum for 11<sup>th</sup> and 12<sup>th</sup> grade students.

The purpose of the YV Tech curriculum pilot is to develop the foundation for a long-term, sustainable aerospace and manufacturing curriculum and associated career pathways that meet the needs of students, industry, labor, and Washington State. This pilot will serve as the model for future skill center initiatives in Washington state. We plan to launch a similar program with the Sno-Isle Tech Skills Center in Everett, Washington early next year.

Partnering with the IAM and the Washington State Office of the Superintendent for Public Instruction, we are scheduling visits to K-12 classrooms, shop classes, skill centers and career guidance counselors. We want to get our passionate and knowledgeable workers into the classroom to show young people the benefits of an aerospace and manufacturing career. With hands-on projects, videos and guest speakers we hope to ignite the excitement and unleash the passion in Washington state's youth to pursue exciting careers that will provide them with living wage jobs for years to come and become the aerospace and manufacturing workforce for our future as a nation.

## COLLABORATIVE PARTNERSHIPS

Partnerships with K-12 education, higher education institutions, labor unions, government and industry have been, and will continue to be, an integral piece in our strategy for developing a strong pipeline of workers for aerospace and manufacturing jobs.

Workforce development, in support of a growing aerospace workforce, is one area where Boeing and our labor partners are clearly aligned. Boeing and the International Association of Machinists and Aerospace Workers (IAM) District Lodge 751 are working jointly on workforce development in Washington state. Together we are partnering in the public sector, concentrating on outreach activities geared towards the K-12 classroom. By sharing our passion for our industry with the youth of the region, our goal is to ignite excitement about manufacturing and aerospace, and to encourage our young people to consider careers in these fields.

We have a strong alliance with the Washington State Board for Community and Technical Colleges, both collectively and with individual colleges. Two examples of industry collaboration are worth mentioning.

First, the Washington Aerospace Training and Research Center, or WATR Center. At the WATR Center, industry and academia are collaborating to provide students with the skills our industry demands. Just completing its first year of operation, this industry-driven training program has developed an impressive track record. To date the WATR Center has graduated 442 students with certificates in aerospace related disciplines. Of those graduates, 414 have applied to Boeing, 371 have received interviews and 258 have offers or have already started. This is a hugely successful program that demonstrates a direct benefit to the students as well as to Boeing.

Second, the Center of Excellence (CoE) for Aerospace and Advanced Materials Manufacturing. The CoE serves as a focal point, bringing together community and technical colleges, local business and industry partners in the fields of aerospace and advanced materials manufacturing. This effort ensures the efficient use of state resources for workforce development, bringing all of the stakeholders together at one table to identify curricula aligned to manufacturing job skills. This industry-driven approach to skills definition and training is imperative to our continued success.

In partnership with CoE, Boeing has conducted workshops targeting critical hourly job codes for Composites, Electrical, Machining and Assembly Mechanic. These workshops included Boeing subject matter experts that represented the skill needs for Boeing along with the participation of many local Community and Technical College. As a result, curriculum has been identified and developed to support the critical skill needs above with local Washington State Community and Technical Colleges.

AIR WASHINGTON

Thank you Senator Cantwell for your help in supporting the generous \$20 million dollar Department of Labor grant that will benefit aerospace training in the State of

Washington. We support the grant proposal from Air Washington, a consortium of community and technical colleges and aerospace training organizations across the state that will benefit from this grant. This funding is a catalyst for the creation of short-term training programs to support the training of 2,600 workers over a three year period. The training capacity that this grant will create will be a benefit for Boeing as well as for our suppliers and other industry partners in the region.

Boeing has partnered with Air Washington and our state's community colleges to define critical skills that will be required in the next 5-10 years. The consortium will be focusing its efforts in five skill areas critical to aerospace and manufacturing in Washington state: Advanced Manufacturing, Aircraft Assembly, Airframe and Powerplant (A&P), Composites and Electronics. Each of these focus areas will receive support from Boeing subject-matter experts who will advise on the required skills necessary for entry-level workers in those jobs. Leaders for each program will translate those skills into a common curriculum that will be deployed across the colleges for all aerospace and advanced manufacturing courses. In addition, Boeing, as an industry advisor, will continue to play a role to the consortium schools. We will continue to work internally with our employment teams to elevate awareness of these programs.

## CLOSING

As a company and as an industry we have a lot of work ahead of us to develop the workforce that will sustain our growth into the future. Boeing will continue to work collaboratively across institutional boundaries to encourage people of all backgrounds, ages and demographics to join us in an exciting career in aerospace and manufacturing. I see a bright future for the aviation industry in the United States, and with your continued support we will work together to narrow the skills gap and put people to work.

Thank you for your interest in securing the future of the aerospace workforce. I look forward to hearing the testimony from the rest of the panel and I am happy to answer any questions that the Committee may have.