The Aviation Work Force: Industry and Labor Perspectives on Training Needs and Challenges

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Challenges

A significant shortfall of trained aerospace workers is projected over the next decade, both in Washington State and nationally. This shortfall has already begun. As an example, the recent hiring of 6,000 workers at Boeing creates a domino effect on the industry. These workers, in many instances, are hired from other aerospace companies in the area, who must then backfill those positions. This is in addition to those workers needed by the supporting aerospace companies to accommodate the increased production rates. Being able to fill these positions with trained workers is not only important to Washington State, but is also in our national interests.

Although the shortage of engineers is well documented, my personal experience at Absolute Aviation Services and also input from other Washington based companies indicates that the workforce requirements ratio for technicians/mechanics/machinists (2 year degrees) to engineers (4 year degrees) is roughly 7 to 1 (respectively) or higher depending on the industry.

More than 60% of High School students currently do not go on to college directly from High School. We need to focus our recruiting efforts on this group. Although these students may not be immediate candidates for a 4 year engineering degree, they are prime candidates for two year Associate Degrees or certificate programs. We cannot afford to marginalize or discount the innate talents and potential of this group of students.

Student Outreach

Motivate and inspire students in Junior High and High School to pursue a career in Aerospace.

Show relevancy of Science, Technology, Engineering, and Math (STEM) education with practical real world examples of its application

Examples in Washington State:

Teach the Teachers

High School Job Fairs

High School Skills Centers focusing on aerospace manufacturing technologies, e.g. machining, welding, plating, non-destructive testing (NDT), computer programming, electronics, etc.

Aviation High School – Des Moines, WA

Technical Training Facilities

Industry driven state of the art Technical Training facilities are required to prepare students for Aerospace employment.

Examples in Washington State:

Washington Aerospace Training and Research Center - Everett, WA

Inland Northwest Aerospace Technology Center (in work)-Spokane, WA

Aerospace Program Equipment Grants to Community Colleges

Community College Centers of Excellence for Aerospace, Technology, and Manufacturing - Edmonds and Everett Community Colleges

Industry /Government Partnerships

Industry must be actively engaged in the design of aerospace training facilities, equipment purchases, and curriculum development and implementation:

Community College Advisory Boards

Aerospace Technology Centers and their curriculum

Apprenticeship Programs – Mobile Training Center

Government/Educational System partnerships for Research and Development – University of Washington (Washington Technology Center) and Washington State University (Applied Sciences Lab)

FAA Centers of Excellence - Joint Center for Advanced Material Research at the University of Washington (UW)

Department of Agriculture grants to the University of Washington and Washington State University for aviation bio-fuel research.

Need to develop new programs in which modern/state of the art equipment currently being used by industry is made accessible for hands-on training to Community Colleges and Technical Centers

Conclusions

Future aerospace workforce shortfalls are well documented. In order to meet those needs, we must not miss an opportunity to connect with the majority of High School students who will not continue their education after High School unless we intercede to raise the visibility of and actively promote aerospace careers. By connecting with these students early, we can motivate them to continue their education, whether it is a 2 year technical degree or a 4 year engineering degree. Although it would be wonderful if all of our High School students were bound to attend a 4 year college and become engineers and scientists, that is not reality. We must convince students, teachers, and parents that a 2 year degree is respectable and can lead to a family wage job and a fulfilling career.

Through Industry and Government partnerships, we need to recruit and train our next generation of aerospace workers. To do that we must increase support for aerospace and aviation related education programs and institutions. By providing coordination at the local, state, and federal level, funding current programs, and finding and implementing best practices, we can develop statewide and national synergies to meet our current and future aerospace workforce needs.