

Wind tunnel gives an educational lift to Denbigh Aviation Academy

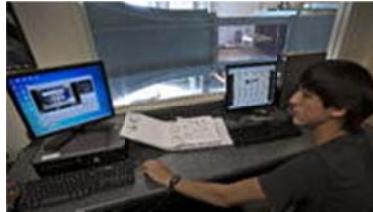
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NEWPORT NEWS — Students at **Denbigh** High School's Aviation Academy are getting a taste of what it's like to work with real aerospace engineering technology with their own wind tunnel.

"The wind tunnel is a great learning device we have here at the Aviation Academy," said Will Hawk, 17, whose class is learning how to angle airplane wings for safe flying. "It's really good at showing you an example of how our wings would actually work in flight."

Once an active part of the school's curriculum, the wind tunnel lost momentum during the past decade as the original faculty retired or moved on from the school. A \$15,000 grant from **Alcoa** Foundation returned the wind tunnel to use, and students have successfully completed their first series of upgrades, using engineering and problem-solving skills.



Upgrades to the tunnel can now measure the effectiveness of wings at different degrees of tilt, wind-speed and a smoker to see the visual reaction of the wind on a model. With the tunnel running effectively, students have begun to form lesson plans and labs for future students.

"I think it's really cool that we've gotten it working in these past couple months, because it hasn't been used much in the past couple years," said Trey Gibson, 16. "It opens up a lot of new opportunities for the lesson plans as well, because you can start testing student models and building things, and actually seeing how the aerodynamic directly effects what you've built."

The tunnel is one of the school's initiatives for combining fields of Science, Technology, Engineering and Mathematics, also known as STEM, with hands-on learning. STEM education is an interdisciplinary approach to preparing students for the work force.

As the project unfolds, work on the wind tunnel gives students the ability to experiment and trouble shoot.

"I really liked putting it together — experimenting with the fogger, trying to get the tubing and everything to work. Just experimenting with different models," Josh Lauthers, 17, said.

Upgrades to the wind tunnel are an effort between students and teachers to come up with creative problem-solving. One improvement resulted from when the team realized that smoke running through the wind tunnel was too thick to accurately measure results. Hawk and Gibson suggested using a thinner smoke, which proved successful for the team.

Students and faculty agree that the greatest benefit of the wind tunnel is the hands-on experience.

"The hands-on opportunity is just phenomenal. You know, having a wind tunnel at your facility is priceless because you're talking about technology that aerospace engineers use on a daily basis," Aviation Academy director Aaron Smith said.

"It's one of those things that I don't think will ever be done but it's something that as the technology changes, as research is shared, we're going to incorporate everything that we can into it."

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