

\$80,000 of Titanium  
The new award from Rolls Royce  
Alex Cox

DES MOINES - Dec. 2, 2009 Rolls Royce has awarded Griffin Nicoll with a jet engine fan blade, which will become an annual award, for his accomplishments and has donated \$5,000 to the school scholarship fund.

When describing why Rolls Royce has decided to donate this prestigious gift, "Primarily it represents Rolls Royce to us. It is really about our key technology, where we invest, and this is where we see synergy in terms of the high school. It's about the investment in technology, the realization of the importance of technology to the high school, and innovative ideas. That's what we have really noticed, and is very evident, in this school." said a representative from Rolls Royce, the Director of Customer Business, Boeing Division, Mark Thompson.

The donation to the scholarship was a complete surprise to everyone present at the ceremony, even to Mrs. Gillman herself. "Seeing the passion of the students and the work that is going on here, we are extremely encouraged, we want to support it and the commercial contribution is our effort to allow further students to participate in it." said Mr. Thompson.

One of the big factors influencing Rolls Royce's decision to help AHS, other than our well-connected school, hard working staff, and excellent curriculum, is the students. "One of the things that really stood out to me were the students, differentiated here from other schools, well a number of things, one is purely the passion to want to be here, and the passion in the work you do... and the bridge that you take between here and industry." said Mr. Thompson.

The award itself is an \$80,000 dollar, gloriously sheen, titanium blade that resembles more of a piece of art, with its perfectly slanting curves, than a piece of machinery. The blade weighs about 35lb. and is mounted on a black marble base equipped with a plaque to recognize the recipients of the award, bringing the total weight to around 100lb.

As Mr. Thompson explained, the blade was manufactured through a very complex process involving layering three sheets of titanium with sheets of carbon in between. Then the carbon is then diffuse bonded out, creating channels in between the titanium. After that compressed air is passed through, expanding the metal creating a multitude of identical supporting struts inside the base of the blade.

The tip of the blade though is solid titanium. This process has greatly improved on the honeycomb structure that was previously used. The level of accuracy required in this process, and the level of tolerance, is into the thousandths.

"Basically, when it rotates, the tip of this will be at the speed of sound," said Mark Thompson, "and in terms of the stresses that you'd have on the root of this blade, it would be equivalent to hanging a locomotive train off of the end of this blade."

The benefits of this new, advanced design is improved fuel efficiency and thrust, while decreasing noise because the increased strength of the blade allows for a larger fan glance, explained Mr. Thompson. Hopefully, this will be first to power Boeing's new 787.