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Wright Flyer Project

John William Love
Utah State University

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by

John William Love

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Approved:

_____	_____
Thesis/Project Advisor	Department Honors Advisor

_____
Director of Honors Program

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Overview

The time is December of 1903. The place is Kitty Hawk, North Carolina; an inhospitable, barren, and windy wasteland. Yet, in this forsaken desert, something magical and historic was about to take place. Many people believed that the Wright Brothers were insane to even fantasize about flight. Man kind was not suppose to fly. The brothers were likened to the myth of Icarus[i], and warned that those who try to fly to close to the sun will meet an untimely demise. Luckily, the jeers were not enough to sway the Wright Brothers from believing. The home-built aircraft started down the monorail as onlookers; some of them dreamers, but most skeptics of powered flight; gazed from all sides. The wooden and cloth contraption began to pick up speed, and at that moment the course of history was changed forever as the flyer lifted heavenward.

Although the first sustained flight in a heavier-than-air craft only lasted for 12 seconds and traveled 120 ft., it meant much more than that to the world of science. In order to honor the Wright Brother's accomplishments of almost a century ago, Utah State University built a replica of the 1905 Wright Flyer using modern materials that would be available to the brothers today.

Project

My main project while working on the Wright Flyer was wing construction and preparation. To be exact, I had to stitch the fabric to the wing spars. Yet, before this could be completed, many components needed to be constructed. When I first started

working on the project, the wing spares had already been constructed, but the wings still lacked leading edges. Construction of the leading edges was not too technical of a task, so I was able to assist. The leading edges were constructed out of a Kevlar-coated foam material that came in huge rolls. Basically, the Kevlar foam was measured out to the desired lengths and cut. The lengths had to be exactly right because the flight characteristics of the Flyer would be change if there was a shortage or overlap of leading edge. Next, the Kevlar material was placed in a pre-constructed form and taped and clamped into place. The form was then placed into a heater where it was then heated to a certain temperature and then allowed to cool down. Finally, the leading edges were taken from the form and fastened to the wing. I was involved in this process for approximately a week.

Next, the fabric was fitted to the wings and was marked were it needed to be stitched. Before we began stitching, the wings were covered with a lacquer that caused the fabric to shrink and sealed holes. The stitching was an interesting procedure, because there was nothing modern about the process. We basically used a big needle with thick thread like Grandma used to use. One person would lay on the ground and pass the needle through the wing while the person on top guided the needle through the markings and then vice versa. This was a long, and usually uneventful process which took over about a week to complete each wing. Then, small portions of fabric were ironed on over the stitching and covered with lacquer once again to ensure that they would not come undone. A process that lasted a few days.

Finally, I consumed the rest of my time with all of the miscellaneous projects I was involved in. The biggest was the dismantling and labeling of the prototype flyer.

For a little over five days each pulley, strut, and screw was carefully taken apart and labeled. This was necessary so that when the actual Flyer was being built, the exact location of every part was known. Other small projects included engine mounting, final assembly, and transportation of the Flyer out of the hanger. When it was all said and done, I spent 54 hours on the project. It wasn't as much as I expected, (or as much as Chuck made it sound like) but we got a lot of help from students wanting to be a part of the project.

Conclusion

In conclusion, I am quite honored to have been a part of the Wright Flyer Project. I was even more excited to see that the Flyer actually was capable of flight and to see that it performed better then expected. There was no better way to celebrate a century of flight and honor those men that made it possible. I must have only experienced a small portion of what the Wright Brothers went through, but in the end it was worth every minute. As a senior graduating in Aviation technology-professional pilot, I hope that the Wright Brother's legacy will continue to live through projects like this and inspire younger generations to continue flying in the future.

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[i] In short, the Greek Mythology story of Daedalus and Icarus begins when Daedalus wants to escape from the island of Crete with his son Icarus. Daedalus constructs wings of feathers and wax, and before they set off, he warned his son not to fly to close to the sun. Yet, Icarus overwhelmed with the joy of flying, flies to close to the sun and the wax melts. Icarus falls to his death.