



Solar Impulse Completes Journey Across U.S.

A journey across the U.S. without fuel ends in New York City.

By Danny Martin

Pilots Bertrand Piccard and André Borschberg made history this past weekend. They completed their long journey from California to New York. On their journey they covered 3,511 miles in 105 hours and 41 minutes. They used not fuel to power their plane, but solar energy. The pilots' two-month long journey across the country was a big leap for air travel and the use of renewable energy.

The Journey

Their journey started on May 3, 2013 in San Francisco, CA. Throughout the flight the pilots took turns flying their plane, the **Solar Impulse**. They stopped in places like Phoenix, AZ and Washington D.C., before finally landing in New York City on July 6, 2013. From the beginning of their journey, the pilots and the plane had to fight off bad weather conditions. This included high temperatures, thunderstorms, and even tornadoes. Then, when the crew was nearing the end of their journey another problem came up. A small tear in one of the plane's wings forced the Solar Impulse to land early. Unfortunately, because they had to land early, they were not able to celebrate their accomplishment by flying past the Statue of Liberty. However, they still made it across the country!

The Design

The Solar Impulse is the first plane to fly so far without using any fuel at all. Instead, the Solar Impulse uses almost 12,000 solar cells. These cells power the four electric motors. The motors then power the plane's propellers using electricity-storing batteries. The batteries are very heavy. They weigh around 880 pounds. That's more than 25 percent of the plane's total weight! All of the solar cells get enough energy to power the plane by using **thermal energy transfer**. This means the cells take heat radiation from the sun and then change it into usable electric energy. Without the sun, the plane would not function. Solar Impulse can fly up to 28,000 feet in the air and can reach a top speed of 50 miles an hour. However, strong winds can boost the plane's speed to 100 miles an hour. Building the Solar Impulse was not easy. It took the pilots and their crew ten years and over 115 million dollars to build it. Scientists hope, though, that this will lead to more development of solar planes.

What's Next?

In 2015, the pilots want to fly the Solar Impulse around the world! The flight would require both pilots to be crowded into the cockpit of the plane for four to five days at a time. However, many things need to be worked out before they can take off in 2015.

“What we eat, when we sleep, and how we will stay alert will all need to be worked out,” said Piccard. As for right now, the two pilots are thinking about what they have learned in the past two months. They are hopeful that by 2015, the Solar Impulse will have advanced enough to succeed in their around-the world-flight.