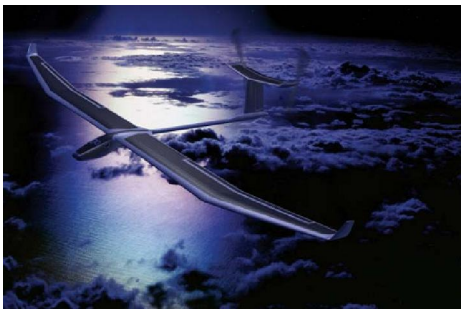
SOLARIMPULSE AROUND THE WORLD IN A SOLAR AIRPLANE

DATASHEET 3 - 2006/2007

FROM DRAWING BOARD TO REALITY



First Model

Second model

Third model

First and second model

The first feasibility study was based on the design of a twin-propeller aircraft. The first model the designers came up with was aerodynamically very efficient. But numberless details had still to be examined. Three years later, in 2006, a second model began to take shape on the computer screens, this time with four engines spread out under the wings. This configuration allows a better balance between the forces, the aerodynamic force or 'lift' which keeps the plane in the air and the thrust that propels it forward. The cockpit too had evolved: of an oval shape, it was suspended under the wing. Even this second model remained at the virtual stage.

Third and final model

In a third model, first shown in 2007, the cockpit is integrated into the fuselage. The wings are now dihedral (i.e. slightly bent upward at the extremities) to gain stability. At the time, the aircraft was still only a 3D drawing when the modeling systems showed that this version of the aircraft could perform reliably. The calculations also confirmed the main objective: its batteries, recharged by solar energy during the day, would enable it to fly at night. The third computer model was the one!

Final design: HB-SIA

In November 2007, after four years of research and modeling, the Solar Impulse team presented the final design: with a 63.40 meter wingspan and weighing 1,600 kg the aircraft would be the size of an Airbus A340 and the weight of a family car! Manufacturing of the first parts began. The prototype aircraft would carry the registration number HB-SIA.

HB-SIA