

Around the world in a solar aircraft

Swiss-based Solar Impulse is taking on a very 21st century challenge – preparing to fly a plane around the globe powered solely by the sun. A prototype aircraft, HB-SIA, plans flight tests later this year with a larger successor, HB-SIB, due to be built in 2011



Pilots:
Bertrand Piccard
(top) and
André Borschberg



Wingspan:
61 metres, comparable to Airbus A340. Long wingspan reduces drag and power required by motors to maintain flight. Also provides large surface area for solar cells

Weight: 1,500kg
Cruising speed: 70km/h

Frame:
Carbon-fibre honeycomb structure

Cockpit: Non pressurized cockpit limits upper altitude to 8,500m

Propulsion: Four wing pods each contain 6kW motor and polymer lithium battery to power 3.5m diameter propeller

Wings: Covered with 12,000 photovoltaic cells which directly transform light into electricity

Start/Finish:
Persian Gulf

Hawaii

Spain

Florida

China

In 2012 HB-SIB will attempt to circle globe, stopping five times to allow single pilot to rest

Flight trajectory

Daytime:
Plane climbs for maximum exposure to sun.

Each of aircraft's 200 square metres of cells supplies just 28 watts – sufficient to power electric light bulb – during day

Night: Batteries must keep aircraft cruising at 3,000m

10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0