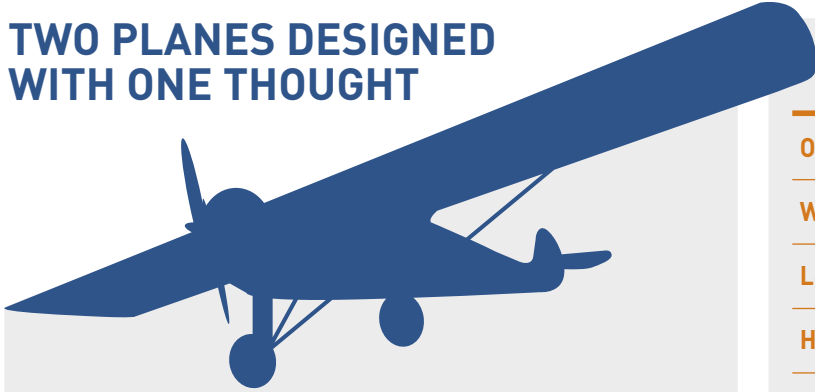




# LUNCH AT 8,500 METRES: NUTRITION INNOVATION OVER A CENTURY

Solar Impulse is the world's first attempt to circumnavigate the globe in a solar powered aircraft. As part of its global journey, it will re-enact Charles Lindbergh's legendary flight in 1927 across the Atlantic. A lot has changed since this epic feat nearly 90 years ago – not only in how our planes are fuelled, but also how pilots stay healthy during long, uninterrupted flights.

## TWO PLANES DESIGNED WITH ONE THOUGHT



### Spirit of St. Louis

<b>Objective:</b>	To fly from New York to Paris
<b>Wingspan:</b>	13.1 m (46 ft)
<b>Length:</b>	8.5 m (27.8 ft)
<b>Height:</b>	2.8 m (9.1 ft)
<b>Loaded weight:</b>	2,381 kg (5,250 lbs)
<b>Maximum speed:</b>	108 kn (200 km/h) 124 mph
<b>Maximum altitude:</b>	5,486 m (18,000 ft)
<b>Engine/Horsepower:</b>	Wright J-5C/220
<b>Crew:</b>	1
<b>Maximum distance:</b>	6,500 km (4,040 miles)

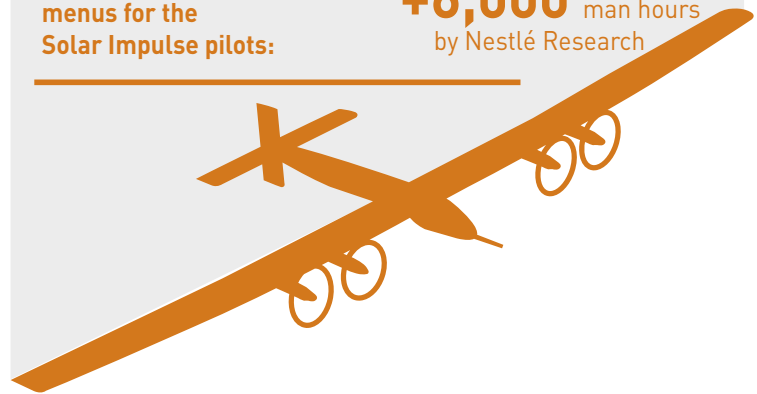
The construction and engineering of the Spirit of St. Louis airplane:

**4,700**  
man hours

## Solar Impulse

<b>Objective:</b>	To fly around the globe without a drop of fuel
<b>Wingspan:</b>	71.9 m (236 ft)
<b>Length:</b>	22.4 m (73.5 ft)
<b>Height:</b>	6.37 m (20.9 ft)
<b>Loaded weight:</b>	2,300 kg (5,100 lbs)
<b>Maximum speed:</b>	77 kn (140 km/h) 87 mph
<b>Maximum altitude:</b>	8,500 m (27,900 ft)
<b>Engine/Horsepower:</b>	4 x electric motors powered from solar cells and 4 x 41 kWh lithium-ion batteries (633 kg), providing 13 kW, electric motors (17.4 HP) each
<b>Crew:</b>	1
<b>Maximum distance:</b>	technically unlimited

**Developing tailor-made menus for the Solar Impulse pilots:** **+6,000** man hours by Nestlé Research



## CROSSING THE ATLANTIC: BOUNDARIES-PUSHING PERFORMANCE

### 1927 Spirit of St. Louis

33 hrs of uninterrupted flying

1,700 litres of gasoline

Food consumed: 1 sandwich

Water consumed: 1 L

### 2016 Solar Impulse

5 days and nights of uninterrupted flying

0 litres of gasoline

Food consumed: 11 meals **in one day**

Water consumed:  
2,5L + 1L sports drink **in one day**

## A SCIENCE-FIRST APPROACH

Prior to the Round The World flight mission, Nestlé Research experts assessed the pilots' individual needs from a nutritional perspective and estimated how these would change during the course of a 35,000 kilometer journey comprised of 12 flights and 500 hours in the air.



## GETTING THE MOST NUTRITIONAL VALUE OUT OF FOOD

By filling the specially selected food pouches with freshly chopped ingredients (vegetables, meat), and then sterilizing the pouches after sealing, the nutritional benefits of the various fresh ingredients remain optimally preserved in the food pack.



# THE IMPORTANCE OF FOOD 1927 vs 2016

### 1927 – Spirit of St. Louis

Food is optional, just a means to still hunger and survive

A few sandwiches hastily packed in a paper bag

The sandwiches have a flat taste

Each mouthful of food needs to be washed down with water

### 2016 – Solar Impulse

The specially designed menus provide the right nutrition, accounting for the stresses on the pilots' bodies and their nutritional needs at different altitudes

Selected packaging holding a range of healthy and tasty food that can withstand the extreme variations in temperature and pressure

The food is delicious and healthy, without preservatives or taste enhancers

The food is easily consumable and consists of a balanced meal with a starter, a main course and a desert

## Food supplies on board Spirit of Saint Louis



**1L**  
of water for in-flight consumption



**3,7L**  
of water for an emergency



**5**  
sandwiches



**5 cans**  
of army-issue emergency rations

## Food supplies on board Solar Impulse

### Breakfast



Fitness and Nido



Fitness and Gerber



Coffee

### Cold meals



Parfait spread



Whole grain bread



### Soups



**1x**



**1x**



**1x**

### Nutritious snacks



**1x**  
Cailler chocolate



### Drinks



**2.5L**  
of water



**1L**  
of sports drink

### Hot meals



**1x**  
Chicken rice with summer vegetables



**1x**  
Mushroom risotto



**1x**  
Potato gratin

### Nutritional supplements



**1x**



**1x**

Resource HP/HC protein drink