

mistakes, to learn from them and adjust your actions, to apply your experience in practice, then again undergo setbacks.

Buckminster Fuller once said, that a mistake is a sin only when it isn't acknowledged.

There are people, who remember their mistakes for a long time and feel sorry. The others think that they couldn't be mistaken, and then repeat them again and again. Some people fully deny their mistakes. Their negative experience contributes to aggravation and recurrence of errors as a result. It can be argued that if a person makes a mistake, and he's lying, denying and blaming others, but doesn't learn any lessons from this situation, he is not moving forward, not developing, and even doesn't remain on the same stage, where he was, he simply moves back.

There should be a courage to stand corrected and wisdom to conclude. Einstein said that only the Universe and human stupidity are endless. Human necessity to study during their whole life could be added in this list. Everyone can be mistaken, but the only question is how you cope with it and which lessons you learn.

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NEW GENERATION SOLAR-POWERED AIRCRAFT

Aviation has always been one of the most technologically – advanced and innovative sectors in the world. Today, aircraft designers and engineers are working on significant technological improvements to manufacture new generation aircraft with optimized efficiency, reduced environmental impact and economic feasibility.

One of the most important environmental concerns of modern aviation is greenhouse gas emission produced by large aircraft. The solution to this problem is a new generation fixed-wing solar-powered aircraft designed by Swiss engineers to show the capabilities of renewable energy in aviation.

The privately financed Solar Impulse is a long-range experimental solar-powered aircraft project developed in 2003 at the École Polytechnique Fédérale de Lausanne, Switzerland. Solar Impulse is considered to be the name of two interrelated aircraft projects: Solar Impulse 1, launched in 2009 and Solar Impulse 2, which performed its first successful flight in 2014. These single-seat monoplanes are powered by photovoltaic cells and can take off on their own best solar power.

The first Solar Impulse aircraft was primarily designed as a single-seat plane with a non-pressurized cockpit, four nacelles under a wing provided with a set of lithium polymer batteries, a 10 hp (7.5 kW) electric motor and one twin-bladed propeller. A carbon fiber honeycomb sandwich structure was used to reduce the weight of the single wing, whose wingspan was similar to that of the Airbus A340 airliner. Theoretically the aircraft was able to stay in the air indefinitely due to its 11,628 photovoltaic cells on the upper wing surface and the horizontal stabilizer which could generate electricity during the day to power the electric motors and to charge the batteries at night. In addition to the charge stored in its batteries, the aircraft could operate on the potential energy of height accumulated during the day to power its night flights.

Solar Impulse 2 differs from its prototype Solar Impulse 1 in carrying more solar cells and more powerful motors among other improvements. The plane has a wingspan of 71.9 m or 234 ft, which is wider than Boeing 747's and carries more than 17,000 solar cells on its wings. It weighs only about 2.3 tons (5,100 lb) due to the carbon-fiber and features a non-pressurized 3.8 cubic meter cockpit equipped with innovative avionics technologies. These include an autopilot, used in long transcontinental flights. Cruising up to an altitude of 12,000 meters (39,000 ft) is possible owing to additional oxygen feeding and different environmental support systems installed onboard.

In 2015-2016 the aircraft made its more than 23-day trans-oceanic flight operating solely on solar power.

Today, the Solar Impulse engineers are working on developing an unmanned solar-powered aircraft capable of non-stop flying at high altitudes to assist satellites in carrying out work related to infrastructure planning, communication, weather and climate observations, measurements and other extra applications which are currently impossible or difficult to perform.

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UKRAINIAN COMAT ROBOT "PHANTOM"

This creation of a Ukrainian military-industrial complex deserves the world's attention. This is not surprising, since most of the "new" development of Ukrainian engineers – just upgraded versions of Soviet technology, used by many decades. However, the robot "Phantom" is from "another story". On the development of the six-wheel machine it has long been known, and now a new