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[The Longest Unmanned Flight](#)

54 hours

It has a wingspan of 60 feet (18 meters), it weighs only 66 pounds (30 kilograms) and is launched by hand; but this aircraft has delivered a new world record for ultralight unmanned flight. "The Zephyr High Altitude Long Endurance Unmanned Aerial Vehicle (UAV) stayed aloft for 54 hours during a recent test flight at New Mexico's White Sands Missile Range," said London-based defense firm QinetiQ. During the trials, Zephyr flew twice while carrying a surveillance payload, first for 54 hours to a maximum altitude of 58,355 feet (19,400 m), and then for 33 hours 43 minutes to a maximum altitude of 52,247 feet (17,400 m). Because no observers from the Fédération Aéronautique Internationale (FAI), which keeps and certifies records, witnessed the event, the record may not stand as official. The previous record was of 30 hours, 24 minutes, 1 second, established by Northrop Grumman's RQ-4A "Global Hawk" on March 21, 2001. Still, FAI is currently reviewing the second test flight of the Zephyr that took 33 hours, 43 minutes. The Zephyr is made of carbon fiber and solar-powered. The trapezoid shaped aircraft can be launched, by hand, by a team of three. In the daytime, the plane accumulates and uses at the same time energy captured by its paper-thin amorphous silicon solar panels covering its wings. Daytime stored energy in its lithium-sulphur charging batteries is employed for night operations. Future improvements could lead to a continuous indefinite flight, working as a permanent surveillance system or temporary communications relay for emergency situations. "Both flights were achieved in the face of thunderstorms and debilitating heat in the hostile environment of the New Mexico high desert in the summertime. They have proved that an autonomous UAV can be operated on solar-electric power for the duration required to support persistent military operations.", said Paul Davey, Zephyr business development director at QinetiQ. The trials confirmed recent modifications that have improved Zephyr's power system, such as new solar arrays supplied by United Solar Ovonic, a full flight-set of Sion Power batteries as well as a novel solar-charger and bespoke autopilot developed by QinetiQ.