



The AMA History Project Presents: Biography of DR. PAUL MACCREADY

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AMA #626304



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Career:

- Set many model airplane records
- First soloed in a powered plane at age 16
- Flew in the U.S. Navy flight-training program during World War II
- 1947: Graduated with a Bachelor of Science degree in physics from Yale University
- Won second place in the National Soaring Contest at Wichita Falls, Texas, at age 21
- 1948, 1949, 1953: Won the U.S. National Soaring Championships
- Pioneered high-altitude wave soaring in the U.S.
- 1956: Became the first American to be an international sailplane champion at a meet in France; represented the U.S. in Europe four times
- Invented the MacCready speed ring used worldwide by glider pilots
- Earned his master's degree in physics in 1948 and his doctorate degree in aeronautics in 1952, both from the California Institute of Technology
- 1971: Started AeroVironment, Inc.
- Won a few Henry Kremer Prizes for his cutting-edge designs of planes, such as planes powered by human power only
- Early 1980s: Developed solar-powered planes
- Received various honors and awards and is affiliated with the National Academy of Engineering, the American Academy of Arts and Sciences, the American Institute of Aeronautics and Astronautics and the American Meteorological Society
- Served as the international president of the International Human Powered Vehicle Association
- Wrote many articles, papers and reports dealing with physics and aeronautics
- 2016 AMA Model Aviation Hall of Fame inductee

This biography, written in 1986, is stored in the AMA History Project (at the time called the AMA History Program) files.

Paul MacCready was born in New Haven, Connecticut, in 1925. During his youth he was a serious model airplane enthusiast, setting many records and, at age 16, first soloed in powered planes. In World War II, MacCready flew in the U.S. Navy flight-training program.

He received his Bachelor of Science degree in physics at Yale University in 1947 and his hobby interest turned from powered aircraft to gliders. He took second place in the National Soaring Contest at Wichita Falls, Texas, at age 21. He then won the 1948, 1949 and 1953 U.S. National Soaring Championships and pioneered high-altitude wave soaring in the U.S. He represented the United States at contests in Europe four times, becoming International Champion at a meet in France in 1956, the first American to achieve this goal.

From 1946 to 1956, MacCready worked on sailplane development, soaring techniques, meteorology and invented the MacCready Speed Ring, which is used worldwide by glider pilots.

Concurrently, he was earning his master's degree in physics at California Institute of Technology in 1948 and his Ph.D. in aeronautics from the same institution in 1952. He pioneered the use of instrumented aircraft to study storm interiors and performed many of the piloting duties. In 1971, MacCready started AeroVironment, Inc., a diversified company providing services and products in the fields of alternative energy, atmospheric environment, and aviation.

MacCready became internationally known in 1977 as the "father of human-powered flight" when his Gossamer Condor made the first sustained, controlled flight by a heavier-than-air craft powered solely by its pilot's muscles. For the feat he received the \$95,000 Henry Kremer Prize. The Condor currently (1986) is on exhibit at the Smithsonian's National Air and Space Museum in Washington, D.C.

Two years later, he created the Gossamer Albatross, a 70-pound craft with a 96-foot wingspan that achieved the first and only human-powered flight across the English Channel. This flight, made by Bryan Allen, took almost three hours and earned MacCready the new Kremer prize of \$213,000, the largest cash prize in aviation history. The Gossamer Albatross is now owned by the National Air and Space Museum.

MacCready then developed two more aircraft that do not use fuel for power – the solar-powered Gossamer Penguin and the Solar Challenger. In 1980, the Gossamer Penguin made the first climbing flight powered solely by sunbeams and was suspended in the U.S. Pavilion of the 1982 World's Fair in Knoxville, Tennessee. In 1981, the Solar Challenger was flown 163 miles from Paris to England at an altitude of 11,000 feet. The solar-powered aircraft were built and flown to draw world attention to photovoltaic cells as a developing energy source for home and industry. The Solar Challenger is on loan to the Virginia Science Center in Richmond, Virginia, from the National Air and Space Museum.

In 1983, MacCready's AeroVironment team created the human-powered Bionic Bat to vie for a new \$30,000 Kremer prize. This prize is for a speed exceeding 20 mph around a one-mile course, using 10 minutes of the pilot's stored energy to supplement the pilot's muscles in flight. The 84-pound, 48-foot span aircraft is sturdy and constitutes a steppingstone toward specialized ultralight recreation vehicles and long duration drones.

MacCready is the recipient of numerous honors and awards and is affiliated with the National Academy of Engineering, the American Academy of Arts and Sciences, the American Institute of Aeronautics and Astronautics and the American Meteorological Society. He has been the international president of the International Human Powered Vehicle Association. He is the author of numerous popular articles, formal papers and reports in the fields of aeronautics, soaring and ultralight aircraft, drag reductions, wind energy, weather modification, cloud physics, turbulence, diffusion and wakes, and equipment and techniques.

Dr. MacCready lives in Pasadena, California, with his wife Judy and his sons Parker, Tyler and Marshall who are all involved with technological programs.

*February 11, 1986
(Updated March 19, 2003)*

Some articles about Paul MacCready

Article Title	Magazine Title	Date	Author
Gossamer Condor (Paul MacCready's winner of the Kremer Man Powered Figure of eight prize)	<i>Aeromodeller</i>	1978/03	Lambie
The Gossamer Albatross (Man Powered Flight, Channel crossing)	<i>Aeromodeller</i>	1979/09	Moulton
Solar Challenger (Report of Paul MacCready's solar powered aircraft project Scale plan)	<i>Aeromodeller</i>	1981/06	Cowley
Celebration of Flight with Dr. Paul MacCready - mixing model airplanes, flying, church, and faith may at first seem strange, but is it really? Our author, who was pastor of the Altadena United Methodist Church and himself an RC Sailplane flier, thinks not - and shares with us this interesting and thought-provocative report.	<i>Model Aviation</i>	1982/12	Woodbridge
Junior Flight!-Dr. Paul MacCready Promotes "Aerial Toys"	<i>Model Aviation</i>	1984/06	Whitten
Interview with Dr. Paul MacCready	<i>Model Aviation</i>	2003/07	Schimmel

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