

☰ Topic Page: [glider](#)

Definition: **glider** from *Dictionary of Energy*

Transportation. a fixed-wing aircraft designed to glide and sometimes to soar, usually not having any form of onboard power plant.



Image from: [Glider, 1902 \(b/w photo\) in Bridgeman Images: Peter Newark American Pictures](#)

Summary Article: **glider**

From *The Columbia Encyclopedia*

type of aircraft resembling an airplane but having at most a small auxiliary propulsion plant and usually no means of propulsion at all. The typical modern glider has very slender wings and a streamlined body. The unpowered variety is launched by an elastic shock cord, a rope, or a cable, attached to the front of the glider and pulled by a launching crew, a winch, a tow car, or a tow plane. Gliders can be towed behind airplanes over great distances. The powered variety can take off and climb on its own.

The glider uses gravity and updrafts of air to keep it flying; slope soaring relies on wind rising off dunes or hillsides, while thermal soaring exploits convection currents in the air. In soaring the glider is repeatedly maneuvered through updrafts to reach altitudes as high as 46,000 ft (14,000 m). It can then glide down through air that is not rising. In a powered glider the engine can be turned on to keep the glider aloft when there are no updrafts. A sailplane, a glider which is built especially for soaring and sustained flight, can travel as much as 500 mi (800 km) in this manner. The usual flight controls in a glider consist of a pedal to operate the rudders and a control stick to operate the elevators and ailerons.

Otto and Gustav Lilienthal of Germany made the first successful piloted glider flight in 1891. The Lilienthals demonstrated the superiority of curved over flat surfaces in flight and encouraged others to make glider experiments, at least until Otto's death in a glider crash in 1896. At the beginning of the 20th cent. the Wright brothers constructed and flew many gliders. They introduced land skids, wing warping, and other improvements that characterize present-day gliders. In World War II troop-transport gliders were used for aerial invasions. The gliders were launched and towed by cargo aircraft to the invasion area, where they were released.

Early gliders were launched from hills or by running forward; the machine maintained stability while in flight by the pilot's shifting body weight. These techniques have been resurrected in modern hang gliding, a development based on NASA experiments with flexible-wing gliders in the 1950s. The **hang glider**, with nylon or Kevlar stretched over an aluminum frame, can reach an altitude of 20,000 ft (6,100 m) and stay aloft up to 15 hours; in 1979 five hang glider pilots flew their machines (fitted with auxiliary motors) across the United States. A **paraglider** is a parachutelike airfoil made of nylon and Mylar from which the pilot is suspended by a series of ropes. Paraglider pilots must "kite"—raise the airfoil into the air by running and using the wind—before launching themselves from a cliff or the like.

See Knauff, T. L. , *Glider Basics from First Flight to Solo* (1982);

Piggott, D. , *Gliding* (5th ed. 1987).

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glider. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/glider>



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