Figure 1-3. *Otto Lilienthal in flight.*

of Kitty Hawk, North Carolina. *[Figure 1-4]* The Wrights developed a series of gliders while experimenting with aerodynamics, which was crucial to developing a workable control system. Many historians, and most importantly the Wrights themselves, pointed out that their game plan was to learn flight control and become pilots specifically by soaring, whereas all the other experimenters rushed to add power without refining flight control. By 1903, Orville and Wilbur Wright had achieved powered flight of just over a minute by putting an engine on their best glider design.

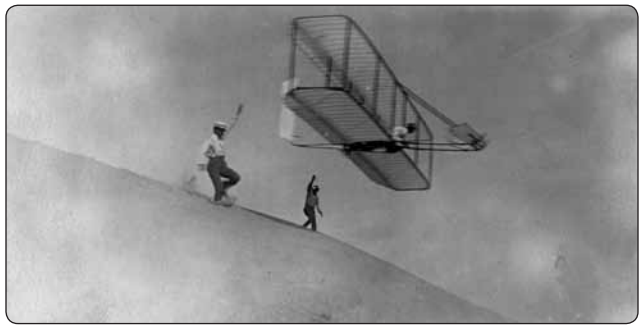

Figure 1-4. *Orville Wright (left) and Dan Tate (right) launching the Wright 1902 glider off the east slope of the Big Hill, Kill Devil Hills, North Carolina on October 17, 1902. Wilbur Wright is flying the glider.*

By 1906, the sport of gliding was progressing rapidly. An American glider meet was sponsored by the Aero Club of America on Long Island, New York. By 1911, Orville Wright had set a world duration record of flying his motorless craft for 9 minutes and 45 seconds.

By 1920, the sport of soaring was coming into its own. Glider design was spurred on by developments in Germany where the World War I Treaty of Versailles banned flying power aircraft. New forms of lift were discovered that made it possible to gain altitude and travel distances using these previously unknown atmospheric resources. In 1921, Dr. Wolfgang Klemperer broke the Wright Brothers 1911 soaring duration record with a flight of 13 minutes using ridge lift. In 1928, Austrian Robert Kronfeld proved that thermal lift could be used by a sailplane to gain altitude by making a short out and return flight. In 1929, the National Glider Association was founded in Detroit, Michigan; by 1930, the first USA National Glider Contest was held in Elmira, New York. In 1937, the first World Championships were held at the Wasserkuppe in Germany.

By the 1950s, soaring was developing rapidly with the first American, Dr. Paul MacCready, Jr., taking part in a World Soaring Championships held in Sweden. Subsequently, Dr. MacCready went on to become the first American to win a World Soaring Championship in 1956 in France.

The period of the 1960s and 1980s found soaring growing rapidly. During this period, there was also a revival of hang gliders and ultralight aircraft as new materials and a better understanding of low-speed aerodynamics made new designs possible.

By the late 1990s, aviation had become commonplace with jet travel becoming critical to the world economy. Soaring had grown into a diverse and interesting sport. Modern high performance gliders are made from composite materials and take advantage of highly refined aerodynamics and control systems. Today, soaring pilots use sophisticated instrumentation, including global positioning system (GPS) and altitude information (variometer) integrated into electronic glide computers to go farther, faster, and higher than ever before.

Glider or Sailplane?

The Federal Aviation Administration (FAA) defines a glider as a heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its lifting surfaces, and whose free flight does not depend principally on an engine. *[Figure 1-5]* The term “glider” is used to designate the rating

Figure 1-5. *A Schleicher ASK 21 glider.*