Gliders as a Vehicle of Research

When in 1889 Otto Lilienthal of Germany, two years before his first gliding flight, published a book on gliding, which represented twenty years of preparation for that first flight, a pattern was established that has been too long neglected at least in recent years. A second pioneer utilizing the glider for research was Octave Chanute, who supplemented his formal engineering training by extensive reading and research in flight without engines.

For years newspapers and magazines have contained articles urging that soaring flight be pressed into service for the advancement of knowledge of vertical currents in the air. Certainly the gliding flights by, and under the supervision of Professor John James Montgomery were not just feats of exhibitionism. Rather, the earnings from such flights made possible the designing and building of gliders which Montgomery used to further his studies in aerodynamics. The many patents issued in Montgomery's name stand as evidence of the results obtained from his gliding flights. Perhaps the fact that Glenn L. Martin, designer and builder of some of the world's largest airplanes, started around 1907 to design, build, fly and teach other persons to fly gliders may be coincidental but it certainly provides "food for thought."

There are other contemporary designers and builders of airplanes whose gliders eventually became power-planes; e.g., the Klemm monoplane; also a fighter plane used abroad and later to become the prototype of one of our best combat planes. Also there is the Funk Brothers high-wing monoplane two-passenger airplane. These two brothers competed in many national soaring contests with the Akron, Ohio, two-passenger glider, the "Sky Ghost;" designed by Dr. Frank Gross also of Akron.

In 1930, Ralph S. Barnaby, a former President of the Soaring Society of America, established a "first" gliding flight when a glider flown by him was released from the dirigible "Los Angeles" at Lakehurst Naval Air Station, New Jersey. As then Commander Barnaby wrote in "*This Week Magazine*" of the New York Herald-Tribune, under dateline of December 28, 1941, "And only eleven years after that pioneer launching from the Navy airship Los Angeles, hordes . . . of troops were landing in Crete from gliders which had been towed in "trains" by bombing planes."

Again in 1930, during the month of April, Frank M. Hawks, flying a Franklin "Eaglet" utility glider (now in the National Air Museum at Washington, D. C.) was airplane-towed from San Diego, California, to New York City, a distance of 2,860 miles in 36 hours 47 minutes flying time; thereby proving conclusively the airworthiness of the Franklin glider! In the years to follow, the firm foundation built by Hawks' "research" flight, in the Franklin, was borne out, as on this make of glider much early gliding and soaring history was established.

In 1933 the Navy Department Bureau of Aeronautics again utilizing the services of Ralph S. Barnaby, purchased two Franklin gliders. The purpose of a planned program was to determine the feasibility of using gliders to increase the efficiency of student naval pilots, thereby reducing the "costs" of flight training. The first purchase of gliders was followed by a second at which time four more Franklins were procured. The outcome of the foregoing resulted in a terse statement to the effect: "indicated that glider training affords a quite accurate means of predicting the flying ability of a student naval aviator."

However, The Soaring Society of America Scientific Committee, Dr. August Raspet, Chairman, Engineering Research Station, State College, Mississippi; and twenty-six assistants located in thirteen different states of the U.S.A. have been assigned the duty as follows: "The Scientific Committee shall study sources of energy for soaring, methods and instruments for extracting this energy by means of the sailplane, and shall collect and disseminate the knowledge of flight characteristics and performance of sailplane." The activity and accomplishments along the lines of the directive above are too numerous and involved to treat of in the limited space available. However, a perusal through back numbers of "*Soaring,*" the Journal of The Soaring Society of America, will reveal ample evidence that research is a dynamic force that is making the peoples of the world glider-conscious; e.g., the "Thunderstorm Project" in Florida by Paul Tuntland who, "was the first pilot to enter a thunderstorm with the express aim of collecting scientific information!" Other recent research projects included:

The Sierra Wave Patent carried on by the Navy at Bishop 1951 and 1952.

The study of air flow influenced by hills made by the Navy on Long Island, N. Y. about 1949.

The design and development of the RJ-5 by Harlan Ross. This outstanding sailplane employes the latest aerodynamic principles. It has established the world's distance record of 535 miles and has been utilized for extensive flight research under the guidance of Dr. August Raspet of Mississippi State College.

The design and production of a famous line of sailplanes and gliders, many of which are in use throughout the world today can be illustrated by the most outstanding of these Schweizer models, the 1-23 sailplane which holds the world's altitude record of 42,100 ft.