N A A CONTEST BOARD NEWS

By William R. Enyart
MOTOR GLIDERS

Of interest to members of the Soaring Society is the increasing attention that is being given in Germany to the development of motor gliders.

This trend is well evidenced by the successful drive led by Professor Georgii, Chairman of the F A I Glider Commission, for the inclusion of official records for motor gliders in the F A I record lists.

The following records are now recognized for motor gliders by the F A I:

First and Second Categories

1. Duration with return to take-off point.
2. Distance in a straight line.
3. Altitude over take-off point

The regulations pertaining to these records dramatize the current specifications as laid down by Professor Georgii for a motor glider.

First Category—Single Place Motor Gliders

There shall be admitted to this category all single place motor gliders meeting the following technical conditions:

Total weight ready for flight—max. 350 kgs (771.6 lbs.).

Cylinder displacement of engine—max. 1,000 cm^3 (61 cu. in.).

Coefficient of flight:

$$\left(\frac{P}{b^2}\right) \text{ or } \left(\frac{P}{S\lambda}\right) \text{ ...max. } \frac{2.5 \text{ kgs/m}^2}{(5.5 \text{ lbs./10.76 sq. ft.})}$$

P = total weight in kilograms
S = area in square meters
λ = aspect ratio
b = wing span in meters

Second Category—Biplace Motor Gliders

There shall be admitted to this category all biplace motor gliders meeting the following technical conditions:

Total weight ready for flight—max. 450 kgs (992.08 lbs.).

Cylinder displacement of engine: (a) Monomotor—max. 1,300 cm^3 (79.3 cu. in.). (b) Bimotor—max. 1,600 cm^3 (97.6 cu. in.).

Coefficient of flight:

$$\left(\frac{P}{b^2}\right) \text{ or } \left(\frac{P}{S\lambda}\right) \text{ ...max. } \frac{2.5 \text{ kgs/m}^2}{(5.5 \text{ lbs./10.76 sq. ft.})}$$

Single-place, as well as biplace, motor gliders must conform to conditions of take-off and landing specified below:

1. *Take-off:* Take-off must be made from a stand-still with a run of not more than 250 meters (820.2 feet) and must clear an obstacle 8 meters (26.25 feet) high.

2. *Landing:* Passing over an 8-meter (26.25-foot) obstacle, landing must be made within 250 meters (820.2 feet) of the obstacle.

Measurement of Distance from Craft to Obstacles: The part of the motor glider from which the measurement is to be taken is that nearest to the obstacle.

Trials for take-off and landing may be carried on only when the wind is less than 3 meters (9.84 feet) per second, measured at 2 meters (6.56 feet from the ground).

For all motor-glider records, the amount of gasoline is limited to: 20 litres (5.28 gallons) for single-place; 30 litres (7.925 gallons) for biplace monomotors; 35 litres (9.25 gallons) for bimotors.

Motor-glider records with limited fuel shall be listed under Class D, but motor-glider aircraft may also try for Class C records for the category of less than 2 litres (122 cu. in.) cylinder displacement.

LICENSE REVIEW

The A, B, and C glider record lists of the National Contest Board reveal the following license statistics:

Total Glider Licenses Issued to Date

A Glider	253
B Glider	308
C Glider	223

Total Glider Licenses Issued During 1936

A Glider	1
B Glider	30
C Glider	24

Total Glider Licenses Issued During 1937

A Glider	1
B Glider	27
C Glider	32

COLORADO

PRIMARY GLIDER VS. PIKES PEAK

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lifting force as they rise to converge with the main volume of air. Beginning the flight across the intervening mountains to the plains, plenty of altitude will accumulate under the wings as the slopes drop steeply away. The mean gradient from summit to level country is steep enough so that a pilot should be able to sail clear of the mountains without the aid of soaring, and in spite of altitude lost in flying through down-drafts.

The topography from the top of the Peak falls steeply toward the plains for about four thousand feet. Then it rises again sharply, forming the so-called Rampart Range, which drops down to the prairie. With Pikes Peak in the background, a vast basin is formed, in which slow but constantly rotating air-currents are to be found. A canyon traversed by the famous Pikes Peak Cog-Road cuts deeply through this Rampart Range. By flying near it, I intended to use this canyon as an emergency pass, if, by any mischance, I found myself unable to clear the basin's ridge.

I spent much time in research over a period of years collecting the information for this course. It had been my hope to obtain a Utility glider with which to make this flight, but near the close of the flying season last summer, when I still did not have the ship I wanted, I decided to reconstruct my Primary for the hop. I was ready to put my data and calculations to a test and determined to make an attempt while the hot weather afforded best thermal advantages. While I could expect little of the Primary as a soarer, I felt sure that extra-stressing the wings would make it reasonably safe for an experimental glide. I accomplished this by installing a drift wire between the usual two flying wires on each wing, and doubling the drag wires from wings to fuselage. My only instruments were a strut-type airspeed indicator and an altimeter.

In order to obtain maximum efficiency from the total thirty-six foot span of clark Y airfoil, I built a rounded tip onto the stub-ends of each wing so that the aileron was set in from the tip. In test flights, I discovered that this change noticeably increased lateral control. Due to lack of streamlining, the ship had a slow cruising speed, but glided at a ratio of about fourteen to one. Realizing I was not properly equipped for severe mountain flying, I was, nevertheless, pleased with the performance of my "beefed up" Primary and made plans for an early trip to the Peak summit.

The automobile road across the top of Pikes Peak is straight and well graded, and, facing the prevailing wind, provides an ideal runway for a towed launching. This method appealed to me, as it would be difficult work for a crew to stretch a shock-cord over the broken granite, which would be necessary in a catapult take-off. In using the road it would be necessary to fly between a hotel building and a telephone line. Except in some rare instance, such as a treacherous air current in my case, there is plenty of clearance for a ship no larger than a Utility.

In attempting my take-off by auto-tow, an air current struck the side of the ship, causing it to list heavily, Happening at that point along the road where there was least room to maneuver, my port wing struck the chimney of the hotel building with enough impact to crash the glider. I sustained a severe shock and a broken leg, but my disappointment lay not in physical injuries. While a worse fate may have awaited me in the great space of turbulent air beyond the buoyant currents of the Peak slopes, I still regret bitterly the unsuccessful take-off which prevented the testing out of my theories as to the possibility of flying a motorless airplane from the summit of Pikes Peak, over twenty miles of Rocky Mountains, to land safely on level prairie.

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