The POLYTECH GLIDER

Ben Shupack

THE senior class in the Department of Aeronautical Engineering of Polytechnic Institute of Brooklyn, New York, under the guidance of the head of department, Prof. R. P. Harrington, and its instructor, Prof. N. J. Hoff, is designing an all wood, single place training glider for the Soaring Society of America.

It happened this way. Our mail was full of requests from schools and clubs asking for plans for an all wood training glider. We had none, nor did anyone else. We, therefore, went to the nearest aeronautical school for help. Naturally, we headed for the head of department, Prof. Harrington, who received us with friendliness. In our chat we discovered that Prof. Harrington was once a former student of R. E. Franklin. This fact, of course, contributed to his interest in our project. But—how about the instructor of the class, Prof. N. J. Hoff, who had earned a reputation in the power plane field? In the course of the conference it developed that Prof. Hoff was an ardent glider enthusiast whose contact with gliders and gliding began in 1927 in Zurich, Switzerland. Prof. Hoff was a "pal" of such early notables as Schultz, Kronfeld, and Gunther Groenhoff.

Prof. Hoff undertook to design the training glider with his senior class. If he hadn't, the shades of the pioneers would have haunted him!

We drew up the following list of aims and general specifications:

The chief considerations for the design shall be:

1. Safety.
2. Airworthiness.
3. Ruggedness.

To meet the present material scarcity the glider must be all wood and designed for available substitutes for spruce and mahogany.

To meet school and field requirements the glider must be of the simplest construction and designed for ease of assembly and handling.

The tentative specifications are:

1. Single place.
2. High wing, two spar, two strut, with plywood leading edge.
3. Fuselage—semi-monocoque with wheel.
4. Empennage—Cantilever fin and rudder, strut braced stabilizer.
5. Span—36 feet.
6. Chord—5 feet.
7. Wing area—180 sq. feet.
8. Wing loading—2.5 lbs. per sq. foot.

General remarks:

Controls should be at least partly balanced and responsive at low speed with not too much sensitivity.

Stall characteristics should be excellent if not remarkable.

It should possess nose heaviness such that coupled with the light wing loading the stick can be held all the way back, and the glider will parachute to the ground with enough forward speed for aileron control but without damage to glider or pilot.

The Society is grateful to this group for undertaking the project with the sole object of contributing it to the nation. The plans, when ready, will be released through the Soaring Society of America.

Left to Right—Bill Nelson, Cliff Oates, Marty Clarke, Warren Painter, Conrad Crown, Dr. N. J. Hoff, Frank Marciniak, Ray Groce, Gerard Goldstein, Harry Goldberg, Al Strassman.