

# SAILPLANE AND GLIDER KITS AND PLANS

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The gradual absorption and attrition of war-surplus gliders coupled with the increasing activity in gliding and soaring make it desirable at this time to review the status of home-built gliders. An up-to-date list of available glider plans is here presented, together with correspondence with the Civil Aeronautics Administration summarizing most of the problems relating to the licensing of home-built gliders. It is hoped that this information will encourage more clubs and individuals to embark upon the construction of new equipment.

In making up the accompanying chart the list of glider plans published in the May-June 1951 *SOARING* was checked for accuracy and several new names added. If any worthy designs have been omitted it is due to the lack of the necessary information. The dimensions and performance figures cannot be guaranteed but represent the best information available. All the sources listed have recently expressed their willingness to sell their plans or kits. If any discrepancies develop, *SOARING* would like to be advised so that corrections may be made in any further listings. Where blanks appear the answers must be obtained from the seller of the plans.

The list is inclusive of all types of gliders and sailplanes—high performance; low performance; all-metal; all-wood; steel-tube; fabric covered; combinations of these; foreign and domestic designs; high and low wing loadings. *SOARING* makes no attempt to recommend any individual design but makes the following suggestions: all-metal construction is the best but requires a high degree of skill and special tools; plywood fuselages are easiest construction for inexperienced builders but are not durable in rough training operations; cantilever wings with D-tube spar and leading edge are most efficient but are more difficult to build than two-spar



fabric covered wings; for clubs just starting up the steel-tube fuselage with straight two-spar strut-braced wings will give the most all-around satisfaction. Three such designs are available which may be transformed later to intermediate sailplanes by the addition of home-built medium-aspect-ratio wings. For the more experienced pilots and builders several medium and high performance designs are available.

To obtain the latest information on the licensing of home-built gliders a letter was addressed to Mr. A. A. Vollmecke, Chief of the Airframe and Equipment Branch of the Civil Aeronautics Administration. Careful consideration of Mr. Vollmecke's replies and references will make unnecessary much individual correspondence in this direction.

It is apparent that any amateur-built glider, built from either domestic or foreign plans or kits, may be licensed provided it passes inspection and has satisfactory flight characteristics. It is issued an "Experimental Airworthiness Certificate" even though no bona fide experimental flights will be conducted. There should be no difficulty in obtaining renewals of certificates. The issuance of the certificate does not necessarily imply that the glider is a safe aircraft. The

main objective of the CAA is to "safeguard to the general public," and the glider's main restriction is that it shall not be operated for hire.

Gliders built from TC plans or kits can receive a "Standard Airworthiness Certificate" provided they pass CAA inspection and flight test. These can be used to carry passengers and otherwise operate within the standard TC limitations. The TC adds prestige to a ship and assures the owner that it is structurally and aerodynamically safe.

Only those who have gone through all the trouble and expense of actually obtaining a TC, however, can appreciate why so few gliders are "approved" designs. The hundreds of hours of engineering and shop time and the extensive flight tests required are simply not warranted by the few gliders which have actually been built. On a contract basis a fee of \$10,000 might transform a "home-built" design to TC basis. Since it is very doubtful if the sale of plans or kits of any glider would ever write off such an investment at our present rate of glider construction, one can assume that those who obtain TC's do so for other than purely monetary considerations.

Gliders without a TC must have the original domestic or foreign airworthiness certificate in order to receive the "Standard Airworthiness Certificate."

See page twenty-nine for a complete list of available plans and kits.

The prices for plans range from \$25 to \$75. The cost of materials for a single place ship will vary widely but \$500 to \$600 should be allowed for. The workmanship must be good quality to pass CAA inspection, and preferably supervised by an A&E mechanic as the work progresses.

It is the hope of *SOARING* that this article has answered most of the usual questions regarding the licensing of home-built gliders and that it will encourage more individual construction. Unless it is desired to rent the glider or carry passengers for hire, or to be assured through CAA approval that the glider is a really safe design, there is little to be gained by having a "standard" airworthiness certificate over an "Experimental" one. Those who are waiting to obtain 1-23D performance from a 1-19 priced kit may have a long wait ahead, unless some new and radical design like the Fauvel AV-36 proves to be a panacea. In the meantime, the many tried

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