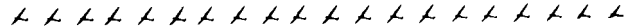


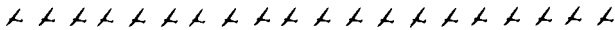
# Soaring

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## POWER *Soarer*

There has been some feeling among soaring pilots, ourselves not excluded, to discourage the application of light power plants to gliders, or at least to leave such combinations out of the "motorless flight" picture. Several times in the past ten years or more, serious attempts were made, both here and abroad, to solve the light plane design problem with this approach. That these efforts did not succeed was not so much because of the method of approach as the failure to continue development work far enough along these lines.

An example was the Waco experimental motor-glider, built in 1932. Utilizing Waco primary glider wings of 36 foot span on a covered fuselage with the standard primary tail surfaces, this little ship utilized a two cylinder, two-cycle, 20 horsepower Jacobs engine mounted as a pusher. Weight of the complete ship empty was under 250 pounds.

This ship took off under its own power and flew very well. On one occasion we reached an altitude of approximately 5,000 feet with it, and flew around for an hour and a half before the one-gallon gasoline supply was exhausted. After the propeller stopped, we continued to fly on weak thermals for half an hour before coming in to land.

Now, although we fly them, we are not advocating this magazine or our Society's entering the light airplane field other than by encouraging student airplane pilots to begin their instruction in gliders and advanced glider students to get their instruction in stalls and spins in Class 1 airplanes. Lightplane flying is a logical step that comes between gliding—preliminary soaring and high performance soaring for the all-round heavier-than-air craft pilot. What we are concerning ourselves with, for it begins to look as if it will be a logical step in making soaring practical and popular for the sportsman, is the power soarer.

This term of "power soarer" conveys rather a different meaning than "power glider". It refers to a sailplane equipped with an auxiliary engine to facilitate take-offs and transportation to and from soaring sites, such as Peter Riedel describes in his article in this issue. If applied in this manner, a small engine will no more make an airplane out of a high performance sailplane than an auxiliary engine makes a speedboat out of a sailing yacht. After all, we use an engine in an auto, winch or airplane tow launching, so why not incorporate a small engine into the sailplane itself, to make it possible to take off and climb to an altitude where thermals can be caught? By doing this we will eliminate a great deal of the trouble of a ground crew as well as the possible danger to other aircraft of using long tow ropes on an airport.

It is quite possible to design a sailplane with the motor down inside the fuselage, completely out of the slipstream, and cooled by louvers, which can be closed by flaps when soaring, on the sides and bottom of the fuselage. Power could be applied through gearing to a small propeller mounted on a streamlined mast. The propeller could be made "free wheeling" with power off, or could be locked and retracted with the mast into the fuselage.

At a soaring contest it would be an easy matter for the official in charge to limit the gasoline supply to an amount sufficient to reach a certain altitude, such as 1,500 meters, the maximum allowed by the F.A.I. for airplane tows in contest soaring. The engine vibration recorded on the barograph would probably show the exact altitude as well as the time that the pilot shut off his engine and started to use thermal updrafts to carry him aloft, as well as speed him on his way.

Let us look into the not-too-distant future and imagine the ease and convenience of rolling your sailplane out of the hangar by yourself, as it is balanced on its two-wheel landing gear, with wheels set on either side of the skid. Out on the concrete apron you unfold the wings, lock them in position, head the ship into the wind, climb into the cockpit, shut down the hood, and strap yourself in. After a few shots of the primer, you press the self-starter button and the little engine comes to life. Holding the stick back and the brakes on, you warm up for a few minutes.

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