



The designer primes the engine of his duo-mono before starting. Developed through a series of models, it is extremely stable, especially in the stalls, and is an excellent windy weather performer.

ALKIE IV

by ROLAND T. MAYER

No freak, just to be different, this is a high performance ship with many special and desirable attributes. This duo-mono configuration was proved by the French Delannes—real aircraft.

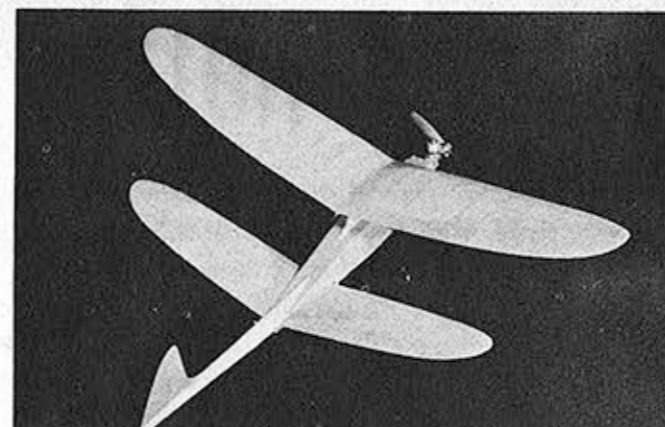
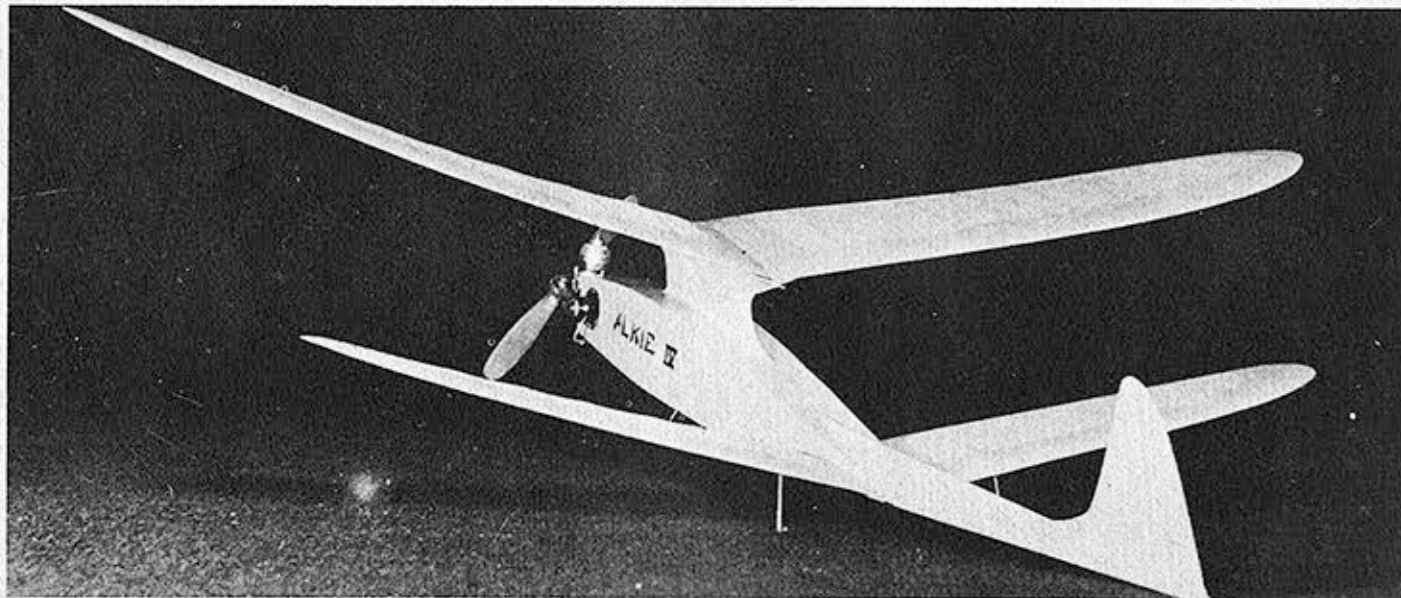
As the name implies, this is the fourth in a series of duo-mono configurations that we have had the pleasure to design and fly in the past few years. After this rather lengthy association with these little by-wingers, we will go on record as saying that for sure at least one of those fifty million Frenchmen wasn't wrong. M'sieur Delanne, who turned out several admirable duo-monos just before the roof fell in on La Belle France, really had something.

As the latest in our series, Alkie IV displays the type of performance we had hoped might eventually be attained

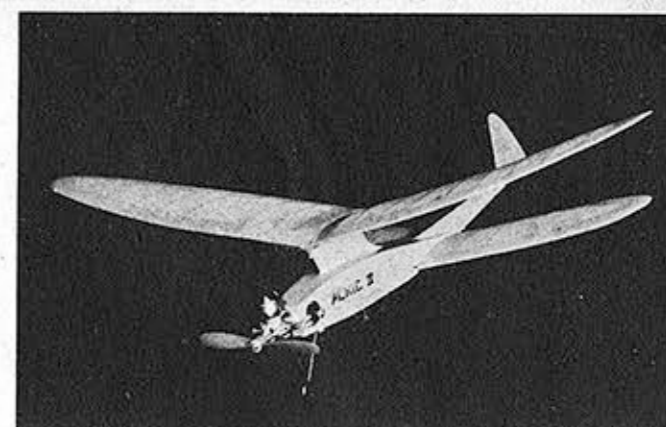
when the number one ship was started. Like the previous models this ship has shown itself to be extremely stable, particularly with respect to stalls, and excellent for windy weather flying. Under power the climb is steep and steady with none of the eccentricities so common to many hot free flights, and because of the unique characteristics of the duo-mono configuration, the transition from climb to glide is a sight to behold.

This helpful peculiarity further accounts for an extremely stable, flat glide by virtue of its automatic compensation for

Is it a monoplane or a biplane? Whichever it is, Alkie IV combines most of the good features of both. It has a steep but steady and smooth climb.



One of the most illusive, yet important, characteristics in free flight is smooth transition from power to gliding flight. Here, Alkie excels.



Both wings—or is-it wing and tail?—tie on with rubber. Since there is no stabilizer to pop up, dethermalizer must be either chute or a spool.

gusts and rough air in general. The gimmick boils down simply to the proper use of decalage. In the case of Alkie IV, the main wing was set at +3° and the secondary wing set at -2. The idea is to have the secondary wing approach its position of maximum lift as the main wing approaches its stalling point. The resulting unbalanced pitching moment immediately acts to restore the ship to its normal flight attitude. This arrangement, simple as it may seem, accounts for the unique and pleasing characteristics of the ship.

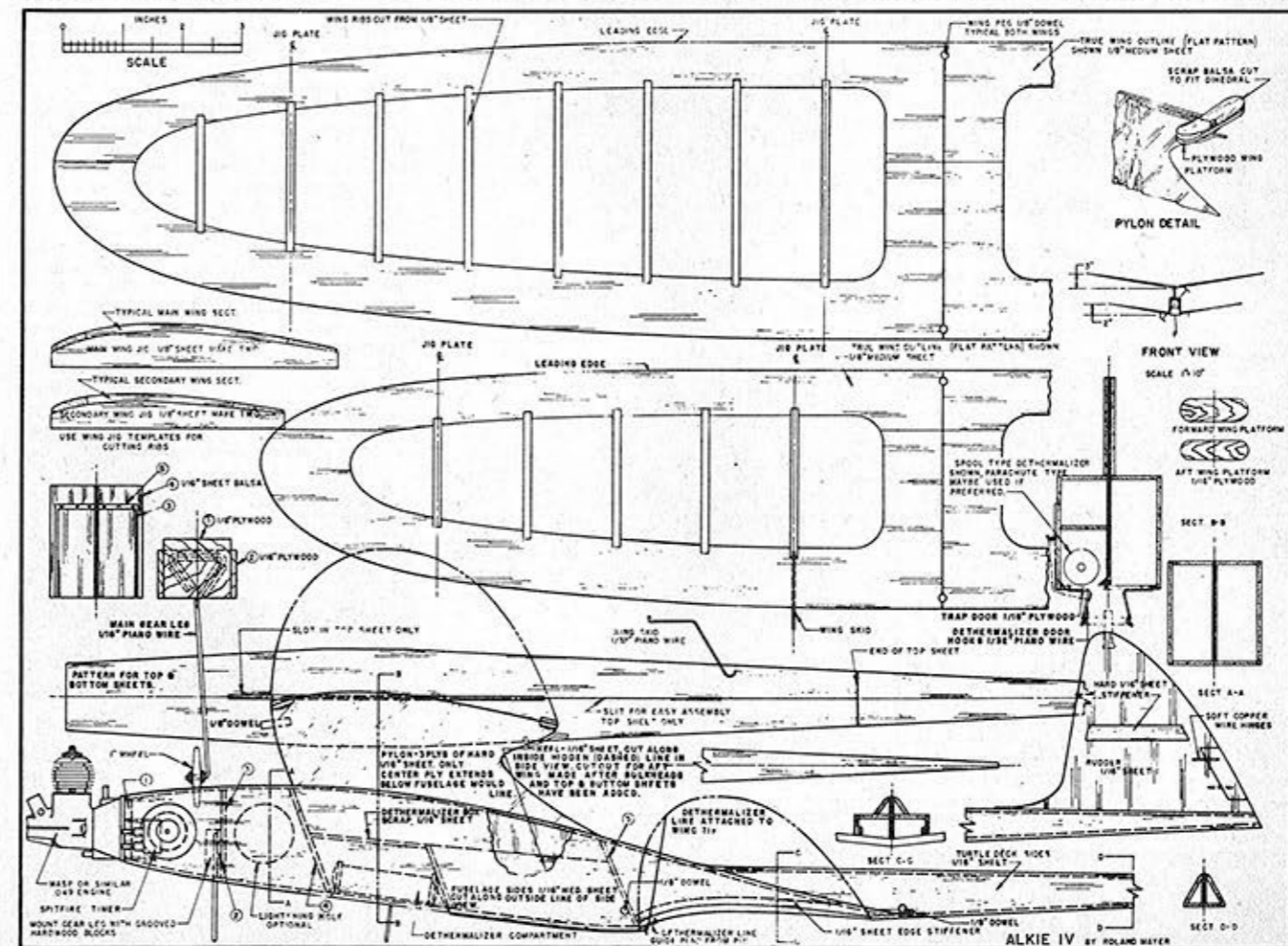
Since the performance of a free flight model is generally proportional to its flying weight, care should be exercised during construction to keep the ship as light as possible without sacrificing structural strength. If intended for competition, Alkie IV should be held close to the 5 oz. minimum

for Half A's.

The wings are of conventional Ritz type construction built on a simple jig made up of two 1/8 sheet plates cemented to the work bench at the positions indicated on the plan.

The fuselage is built around a center keel. First the center ply of the pylon is cemented in place as shown. Then all the bulkheads except number two are added. Next add the top and bottom sheets. Now cut away keel and bottom sheet, previously marked to allow passage for the secondary wing. Also cut a slot to facilitate installation of bulkhead number two and landing gear attachment. Next add the fuselage sides, turtle deck and rudder. Finally complete the fuselage and add the hardware as indicated on the plan.

Since there is no stab to pop (Continued on page 50)



FULL SIZE PLANS AVAILABLE. SEE PAGE 46.

Alkie IV

(Continued from page 31)

up, either spool type or parachute dethermalizer may be used. We chose the former and housed it as shown in a compartment opening at the bottom of the fuselage with the trap door actuated by a burning fuse.

For additional strength in the nose the fire wall should be covered with light gauze or silk extending aft 1/2 in. Then the entire ship is covered with lightweight Silkspan. The original model was finished off with three light coats of butyrate dope. Bright colors should be used for good visibility.

The ship should balance approximately at the mid-point of the main wing chord. Hand glide the model as you would a conventional ship and correct for any stalling or diving tendencies by changing the incidence in the secondary wing as you would the stab on a regular free flight. Upon obtaining a flat glide, adjust the rudder tab for a slow circle to the left. When you are satisfied with the glide, make the first flight with the engine running as slowly as possible and a short timer setting, hand-launching the ship into the wind. Now increase power gradually until peak performance is obtained. END