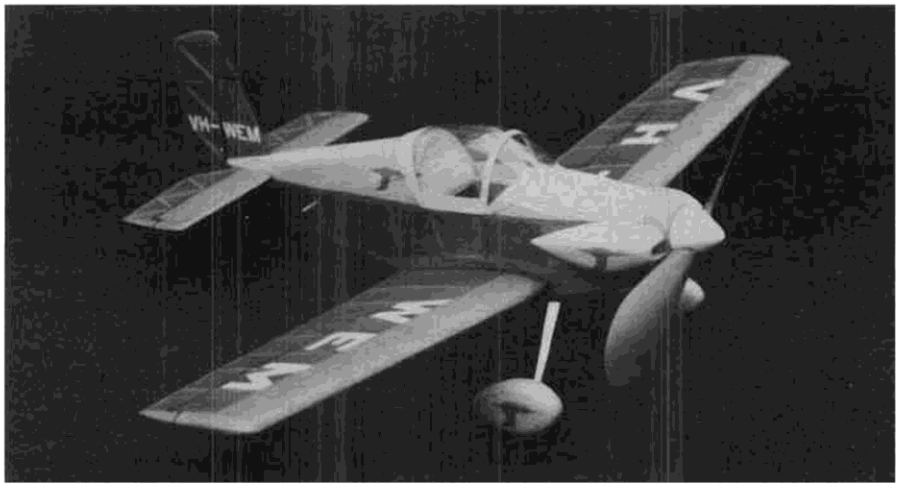


# CORBY STARLET

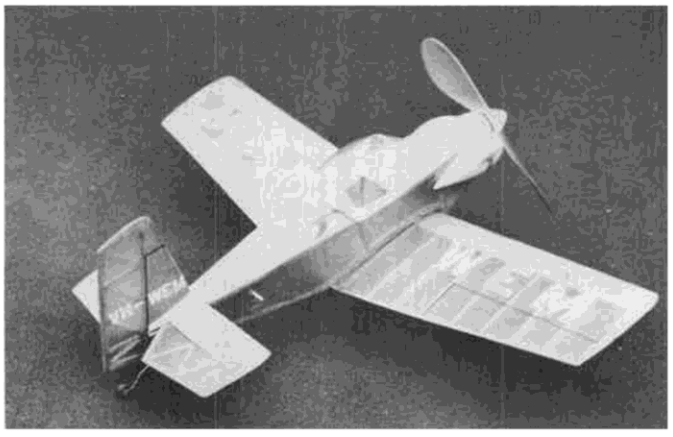

**By WALT MOONEY . . . Even though it's not the configuration you might look for to get long flights, and with additional sheeting and heavy canopy, this stubby little homebuilt still makes long flights.**

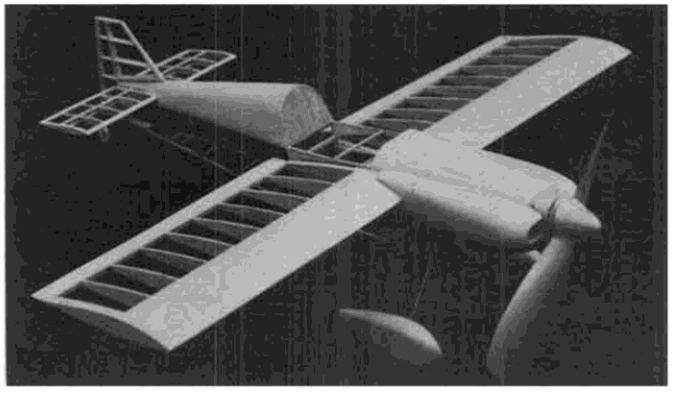
• This is a perky little single-place homebuilt design from down under. The three-view has been published in several aviation publications as a part of the HAPi Engines Inc. advertisement. A Corby Starlet was brought from Australia to the last Oskosh E.A.A. fly-in aboard a Qantas 747 that brought several other Australian aircraft and several hundred E.A.A. members to the get-together. It appears to be an excellent design for Peanut modeling and the only intentional change from exact scale that was made on the model in the photos was an increase in wing dihedral.

The model in the photo weighs 21 grams, complete with a rubber motor. This is rather heavy for a competitive Peanut, but the model is still capable of making flights of 25 to 30 seconds. Most of the excess weight is due to the use of a cut-down Sig six-inch canopy which was designed for U-Control models, and as a consequence, is much heavier than necessary. A heavy plastic propeller is required to balance the model as built. Also, to maintain the basic character of the Starlet, more than the usual amount of sheet covering was used. No matter how thin sheet balsa is, it is still heavy compared to tissue.

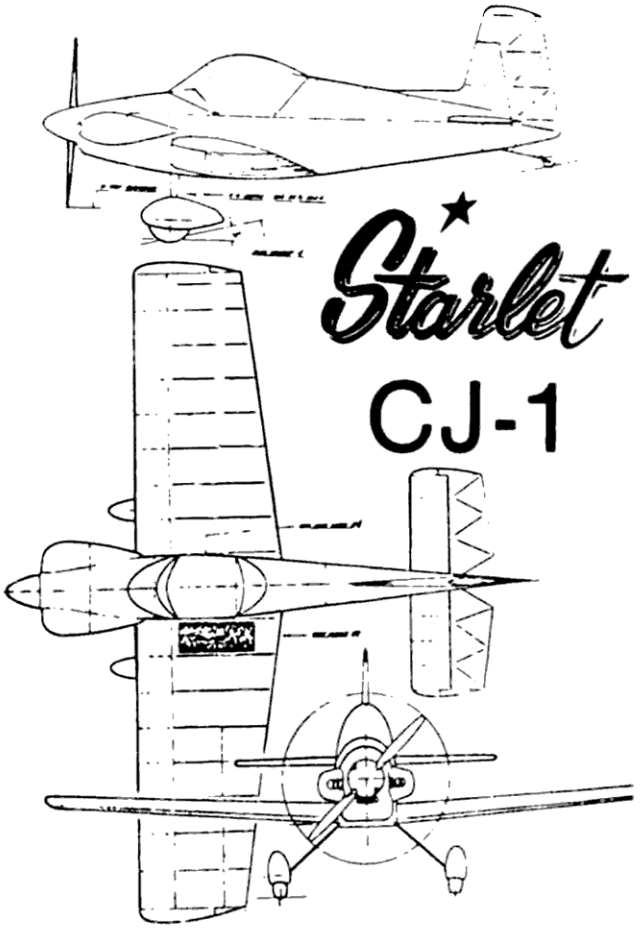
Nevertheless, the Starlet is a cute model. It looks a little like a low aspect ratio, stubby, Mooney M-18 Mite. Wing rib spacing and structural members in the tail all match the three-view. Obviously, a much lighter model could be made with little or no scale judging penalty by (1) eliminating the sheet covering on the vertical and horizontal tail, (2) eliminating half of the wing and tail ribs, (3) using bond paper for the aft top fuselage covering, and (4) molding a

*Plans on pages 52 & 53*
*Text Continued on page 96*





The stubby little Corby Starlet will be followed by a Finnish Super Sytky, shown in skeleton form above.



lightweight canopy. If these four approaches were taken, then a fifth would be necessary; the use of a lightweight carved balsa propeller.

Construction follows standard practice in most respects.

The fuselage is constructed using two main side frames that are built directly over the plans. These frames are shown hatched for clarity. After they are completed and the cement is completely cured (build one of the other components while the cement is setting), remove the frames from the plan and carefully separate one from the other using a thin single-edge razor blade. Now add the cross pieces top and bottom, using the top view to determine cross piece lengths. Check the basic frame against the plan for accuracy as it is being assembled.

Cut sheet balsa formers to the shapes shown and cement them in place at the proper locations and at the proper slopes. The former at the front and the former at the back of the cockpit are not vertical, but lean away from the cockpit opening. The most forward former is made from 1/16 sheet, all the others are made from 1/32 sheet balsa.

The fuselage top and its sides and bottom forward of the wing is covered with 1/32nd sheet balsa. The top covering must be soft "A" grain flexible balsa sheet, while the sides and bottom, which are flat or nearly so, can be stiffer "C" grain. The use of thin strips of masking tape to hold the top covering to the model and help bend the sheet is helpful, and tends to minimize the chances of cracking the sheet where the bends are very tight, like at the very back end. A small triangle of 1/16 sheet should be used to fill in between the bottom longerons at the extreme rear end to support the tail wheel wire. Bend the main landing gear wire to match the shape shown in the front view and install it in the fuselage structure. Do likewise with the tail wheel wire.

The cowl cheeks are carved from soft balsa blocks. Hollow them out at least as much as shown. Make a nose block assembly to match the detail drawing. The cheeks are cemented to the noseblock to make an integral assembly.

Carve a balsa spinner and either fit it to the propeller or use it for a mold and mold a plastic spinner for the model.

The tail surfaces are conventional structures, built directly over the plan, and then covered with 1/64th thick sheet balsa on both sides in the areas shown. After the assemblies are completely dry, they are sanded to a thin airfoil section. The sheet covering is thereby feather edged both at the leading edge and at the spar. Note that the plan shows a scale tail thickness, but the model in the pictures has basic tail structure before sheet covering only 1/16th thick, which is slightly thinner than the plan shows. This deviation from scale was unintentional and is almost imperceptable. (Much more perceptable in the photos, I now note, is the lack of the small triangular dorsal fin in front of the vertical tail . . . forgive me.)

The wing airfoil section on the model is symmetrical. It uses a top and a bottom spar, a leading and trailing edge stick, and thin sheet balsa covering from the leading edge back to the spars both top and bottom. Cut two ribs to each pattern except Number One, which requires three.

Build the wing directly over the plan. Pin the bottom spar to the work board. Support the 1/16 by 1/8 trailing edge 7/32 above the workboard over its entire length, and then cement the ribs in place. Now add the top spar and the leading edge. The wing built in this fashion will have about 3/32 of washout at each tip because of the decrease in rib depth towards the tips (as long as you remember which side of the wing was built as the down-side!) Cut the wing structure at the dihedral break, just outboard of the outer Number One ribs and prop up each tip about 7/8 of an inch. This will require the removal of a very short length of top spar at the joint and an even smaller almost imperceptable length of the leading and trailing edges. Do this cutting carefully by the cut-and-try method. When you obtain the proper dihedral and fit, cement the wings back together at the breaks.

When the dihedral joints are dry, cover the leading edge back to the spars with 1/64 sheet balsa, using three pieces for the top and three for the bottom.

The tips are carved from soft balsa blocks.

The wheel pants are constructed in the standard fashion, using a thick balsa center piece cut out to clear the wheel diameter and two 1/16th thick side pieces laminated into a single piece and then carved to shape.

Before covering the model, sand it all over with fine sandpaper to remove any rough spots or other imperfections that would show through the covering. Then cover the model with your favorite covering material. The model in the photos was covered with blue Japanese tissue and the balsawood fuselage top, cowl cheeks, and wheel pants were left bare for the color contrast. The canopy framing was simulated with masking tape which is a fairly good color match with the balsa decking.

The registration letters were white decals and are imaginary, although the "VH-" is correct for an Australian registered aircraft.

Control surface outlines are black ink, and wheels and the bottom cowl inlet are painted with flat black paint.

A loop of 1/8 rubber is about the right power for the model in the photos. •