



flyabout

Designed expressly for
beginners, this ship is
attractive and extra sturdy

by BILL WINTER

THE Flyabout is a realistic sport model for engines of .02 to .074 displacement. It will fly but not take off with the .02 and is over powered with the .074, so either the K & B Torp Jr. at .035 or the O. K. Cub .049 are its proper power plants. The ship shown in plans and pictures performs well on the .035.

About the only features out of the ordinary are the three-wheel gear, permitting automatic take-offs, and the spars, tapered wing. The fuselage is all sheet, paper-covered, as are the tail surfaces. The Flyabout is easily made in two days and a fast-working expert can have it ready to fly in a day if he bears down.

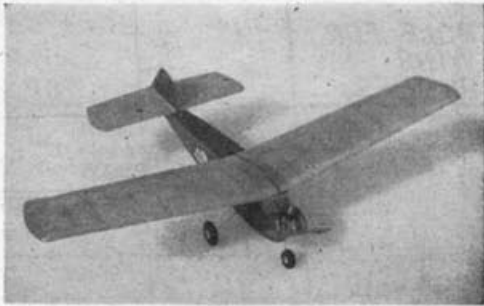
CONSTRUCTION. By joining the sheets of plans along their long edges as keyed a full size plan results for the fuselage, rudder, and one-half the stabilizer; when finished with these portions, sheet two and three can be rejoined to provide one half of the full-size wing drawing, which is quite easily reproduced right hand for the other half panel.

The fuselage sides and formers are 1/16" sheet balsa, the sides being butt jointed for width on the forward half of the fuselage. The main formers beneath the wing are a standard 2" wide for simplicity. If construction is to be easy, several minor points need consideration before making with the razor blade. Note that the profile of the fuselage on the plan includes the top and bottom sheet covering, which means that 1/16" should be removed from the absolute profile along the entire bottom, and on the top from the wing back. The 3/32" thick cabin roof fits within the sides; the bottom sheeting, at the point of difficult bend on the bottom of the fuselage, has its grain running cross-ships. From the landing gear back, the bottom sheeting has fore and aft grain.

The easiest procedure for an accurate fuselage is to place the 3/32" sq. side pieces in the notches on formers 2 and 4, then cut out and glue in place the cabin roof. When this dries add the two sides, but do not join them at the rear.

Now follow up with formers 1 and 3 and only then bend the sides until they meet at the tail with a natural curve. Formers are not given for the section of the fuselage behind the wing because their widths should match the station widths of your fuselage. Since the formers are rectangles it is a simple matter to measure depth and width from your ship. Note that former 6 has its grain cross-ships; if any formers tend to buckle, reinforce them with a piece of 1/16" sq. across the grain.

Before adding top and bottom, construct the landing gear sandwich of three pieces of 1/16" sheet (see plan detail) and, having bent the main landing gear to shape, install the sandwich in the fuselage (check side view), filling in between it and former 3 with 1/16" sheet; between the sandwich and former 4, add long gussets of the same material. Both gussets and fill-ins cement to the inside of the fuselage sides. Add the 1/16" wing rubber dowels.



Cut out the 1/16" ply firewall. This should be drilled for the mounting bolts and for the binding of the front landing gear strut. Bend and attach this strut before putting the firewall in place. Put your mounting bolts through the firewall holes, and through the holes in former 1, then put on the nuts and draw the latter up tightly until they sink into the soft wood of former 1. Give the nuts several thin coats of good cement and when dry, withdraw the bolts.

To add the top and bottom sheeting, trace the outline of the fuselage onto 1/16" soft balsa, then cut out the required pieces leaving about an 1/8" surplus all round for trimming. Begin at the nose and put on the cross-grain sheeting, then finish the bottom with the long fore-and-aft piece. Make sure that the sheet balsa is cemented to the formers as well as the sides. Add the top sheet; note cut-out for the rear wing dowel peg. Sheet over the top of the nose around the windshield with pliable 1/16" sheet and when dry, cut out to the proper outline. Add the 1/4" thick side pieces to the nose and the 1/16" thick stabilizer mounting platform.

Give the entire fuselage a coat of clear dope, plasticized with about three drops of castor oil to the ounce of dope. When dry, cover the entire fuselage with blue rubber model tissue. Add the windows and windshield. If the windows are put on separately, a windshield pattern can be made from bond paper by trial and error, then celluloid may be cut to match. Make a hole for the dowel, work the windshield into position and pin at the corners to hold it in place. Place a thin bead of cement along its edges.

The tail surfaces are cut from 1/16" sheet balsa, sheets of which are glued together to obtain the necessary width. The stabilizer outline is the same as the tip of the wing and is marked on the wing plan. The stabilizer tips have their grain running fore-and-aft whereas the remainder of the surface has a tip-to-tip grain. After sanding the surfaces, coating them with plasticized dope to prevent warping, and covering with rubber model tissue (blue for the rudder, yellow for the stab). Cement along the stabilizer centerline a piece of 1/16" square balsa; the rudder is cemented to the stab and against the side of this strip. Note the rudder tab with soft wire for hinges. The completed tail is cemented lightly onto the stabilizer platform. Check its alignment carefully, especially to see that one tip is not higher than the other when the fuselage is level.

The wing is very easy to make. Mark out the tapered trailing edge on medium hard 1/4" sheet, then cut out with a razor

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blade and some kind of straight edge. Do not shape at this time. The leading edge is $\frac{1}{2}$ " square from tip to tip. Both left and right panels are built separately, then joined in the middle at the proper dihedral by filling in with short pieces of edging and the remaining ribs.

Make 23 full size wing ribs; then, having pinned down the edges on the wing plans, begin to fit ribs. Cut off the rear of each rib going toward the tip as seen on the detail (part of side view). The tips consist of $\frac{3}{32}$ " sheet, reinforced with $\frac{1}{16}$ " sheet gussets; inside the last rib, $\frac{1}{8}$ " sheet gussets strengthen the corners.

When both panels are dry, attach them to the bench with the tips supported for dihedral and fill in the center section. Leave out the center three ribs until the edging joints have dried, then add the joiners, and finally the ribs. Short lengths of $\frac{1}{8}$ " square join the center three ribs at the top. Trim and sand the edges.

To cover use one piece of rubber model tissue (yellow) for the entire bottom of the wing and three pieces for the top, one for the center section, and the others for the left and right panels.

Water spray the wing and when dry, give two coats of dope which has been thinned half and half with thinner. Finish off with a third coat of the same but with three drops of castor oil added per ounce of dope. This will stop further shrinkage and prevent warping. Don't forget to coat at least the forward part of the fuselage with fuel-proofer.

FLYING. Since it is a cabin model, the *Flyabout* tends to turn left under power. Flying depends on what you want the model to do. Slight right rudder would give a circling glide, yet make the model go straight across country under power. If right-thrust is added by inserting a washer behind the left side of the motor mounting, between crankcase and firewall, the model would fly straight at all times. By adding slight left-thrust and a goodly amount of right rudder, glide would be tight right and the power circle slight right.

Otherwise, flying is the usual procedure of hand-gliding, then adding incidence under the leading edge of the wing to correct nose-heaviness. For slight tail-heaviness, add a total of no more than $\frac{1}{16}$ " sheet shims under the trailing edge of the wing; if more than that is required to achieve a good glide, put lead ballast in the nose.

The original model flew well with a Chapman 6-4 prop, and heavy rubber-tired control model type wheels.