

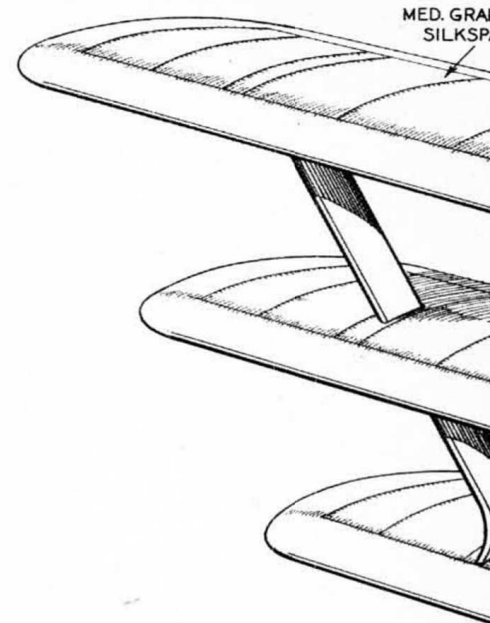
■ How many times have you said to yourself, while out at the field, "Nothing new around here, same old stuff"? Well, we designed *Bouncing Bertie* for the purpose of presenting something different, and we believe we've succeeded.

The model is designed around engines for .29 to .35 displacement. With slight structural changes engines of greater displacement may well be substituted. Construction throughout stresses strength, and therefore you have a beefy, rugged model. The two upper wings are set at one degree incidence, with the lower wing set at zero. It was noted that the incidence in both wings permitted a shorter take-off run and greater stalling angle.

Construction begins with the sheet balsa fuselage. Select two pieces of even-grained, medium-quality $\frac{1}{8}$ " x 3" sheet balsa. Cut the fuselage sides to required

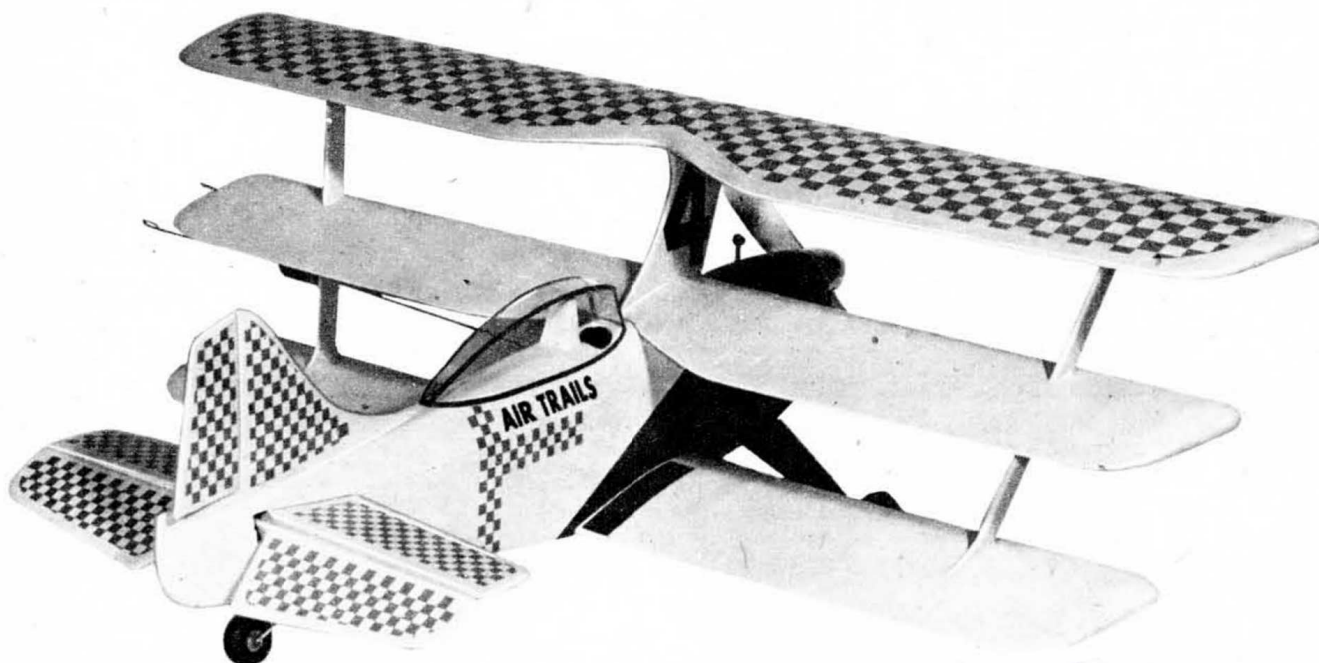
contour. Hardwood mounts, $\frac{3}{8}$ " x $\frac{5}{8}$ " are then added as shown. You will notice the mounts are recessed to place the engine on proper fuselage center line. Formers A, B, C, and D are next added. The firewall former A is cut from $\frac{1}{8}$ " plywood. However, before cementing former A in position, slit the forward portion of the fuselage and insert the aluminum landing gear. The gear is made from .040 24 S-T aluminum alloy sheet. Former A can then be cemented in place.

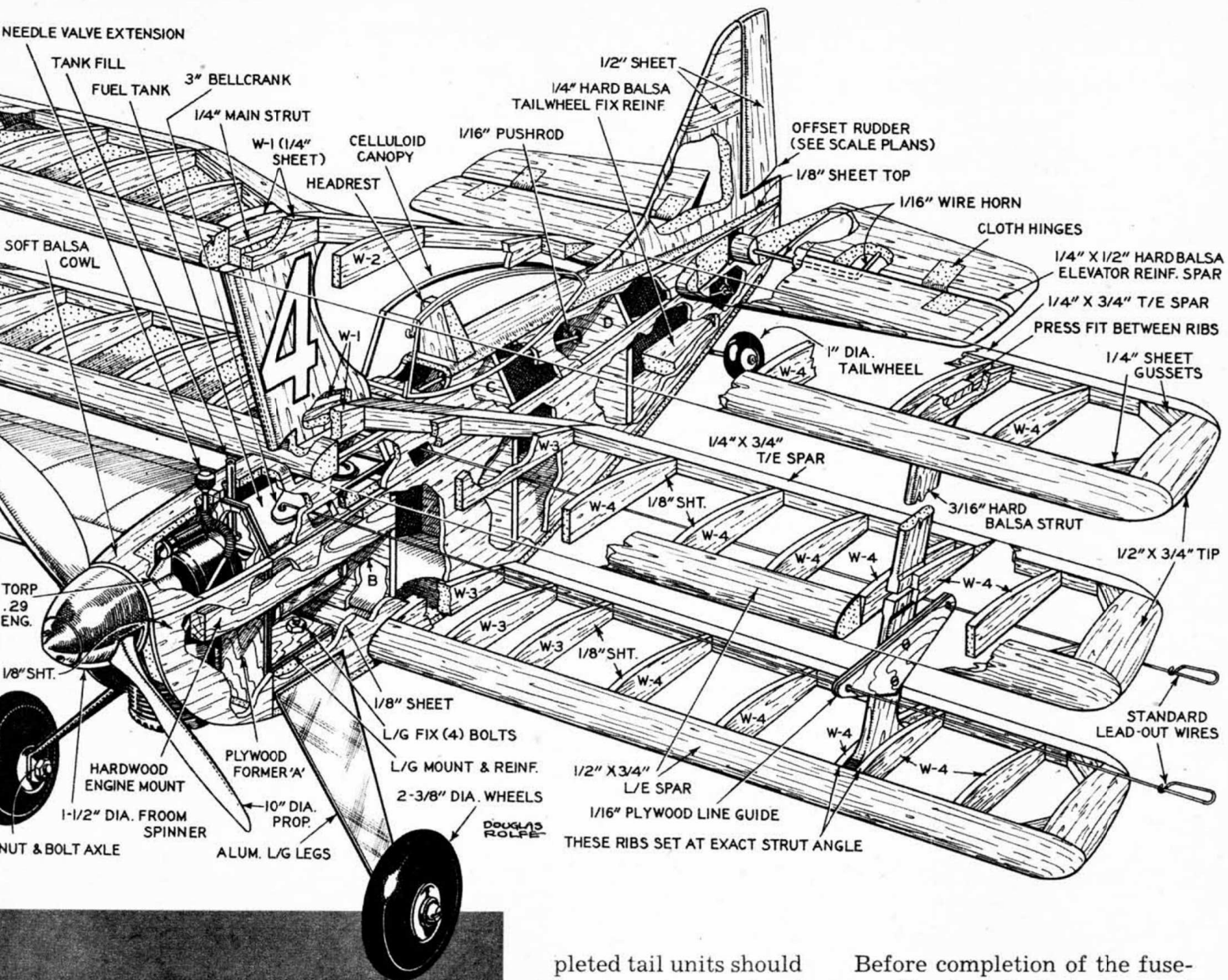
The gear reinforcement is next to be added. A square of $\frac{1}{4}$ " hard sheet balsa is cemented between the fuselage, above the gear as shown. Plywood $\frac{1}{16}$ " thick is then cemented above the $\frac{1}{4}$ " sheet. When completely dried, the gear is secured in place with four nuts and bolts. The 3" bell-crank is fastened to a $\frac{1}{4}$ " x 1" hard balsa platform. Before setting the fuselage aside make the necessary wing cut-outs, to re-



"Egad, men, take to the hills!"
"Is that three monoplanes or one and a half biplanes . . .?" Such comments will greet you when you show up at the flying field with *Bouncing Bertie*. And for outright enjoyment you can't beat this novel .29 to .35 tripe.

BOUNCING BERTIE





By PAUL PALANEK

ceive the lower panel. From this cut-out back, sheet the lower portion of the fuselage. To further complete the fuselage the tail assembly is required.

Both the rudder and the elevator assemblies are shaped from $\frac{1}{2}$ " soft sheet balsa. The elevator halves are held together by the horn wire, then cemented to the $\frac{1}{4}$ " x $\frac{1}{2}$ " balsa spar. Cloth hinges fasten the elevator to the stabilizer. Both the rudder and the stabilizer taper from $\frac{1}{2}$ " at the root to $\frac{1}{4}$ " at their tips. When properly sanded the com-

pleted tail units should be given two coats of clear dope, then lightly sanded. Returning to the fuselage, we can securely cement the stab assembly in place. The $\frac{1}{16}$ " wire pushrod is soldered to the horn and bellcrank. The $\frac{1}{8}$ " sheet balsa turtle-deck is added as shown, first mounting the sides, then the top. When sufficiently dried, sand all corners round as shown in section views. With the fuselage still open, insert the $\frac{1}{16}$ " wire tail skid and support with $\frac{1}{4}$ " sheet balsa. The rudder can be secured to the rear of the fuselage. A $1\frac{1}{2}$ " circular hole is cut for the cockpit clearance, and to the rear of this a balsa over-turn block is added.

Before completion of the fuselage, the fuel tank is inserted with the filler coming out the top and the vent out the right side. Sheeting the fuselage can then be completed. At this point the engine is installed and used for cowling purposes. A balsa block forms the top portion of the cowl, and $\frac{1}{8}$ " for the sides. Remove the engine, and sand the fuselage thoroughly; then apply three coats of clear dope. After each doping lightly sand, and follow through with three coats of wood filler.

When the fuselage is completely dried, cut out the required section to allow the fitting of the mid wing. The remaining work is centered around the wing structures.

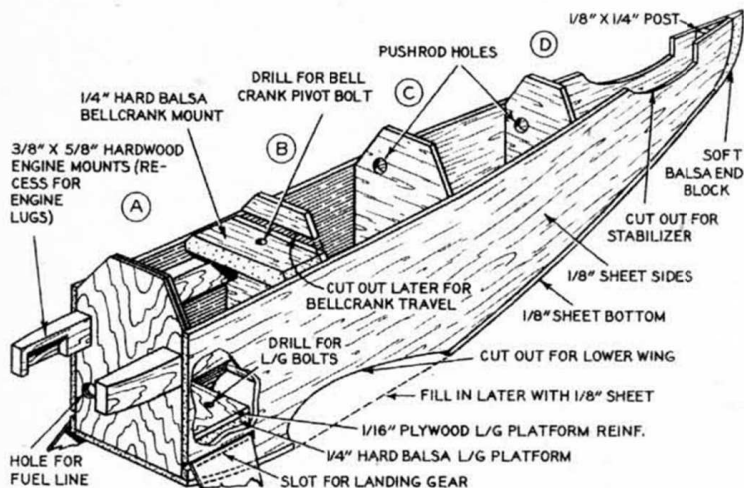
Wing assemblies are somewhat similar, the only difference

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being in the span and the various rib positions. With the proper use of materials a sturdy wing structure will result. All the ribs are cut and sanded, $\frac{1}{8}$ " and $\frac{1}{4}$ " sheet balsa being used. Because there is no dihedral, there is no break in the balsa leading edge. The trailing edge is $\frac{1}{4}$ " x $\frac{3}{4}$ " and the leading edge $\frac{1}{2}$ " x $\frac{3}{4}$ ". Start construction with the lower panel and work up. When fastening the strut ribs in place, allow a sufficient amount to take care of trimming.

When the wings are completely dried, sand the strut ribs to required contour. Carve and sand the balance of the wing to correct airfoil shape. The three wings are then covered with medium grade paper wetted and allowed to dry. Three coats of clear dope are applied to each wing. Before any further assembly work is done, the model is color-doped. Once assembled, colored doping would be difficult. Two coats of orange yellow are applied to all areas. Mask the fuselage and trim with "insignia" red.

Cement both the lower and mid-wings in place on the fuselage. A $\frac{1}{8}$ " sheet is cemented to the lower wing and faired to the fuselage lines. While this assembly is drying, the main and wing struts can be made. The main strut is shaped from $\frac{1}{4}$ " hard sheet balsa. Sand all corners allowing for a snug fit in the wings. The wing struts, of which two each are required, are cut from $\frac{3}{16}$ " hard sheet balsa. When the struts are completed, finish off by applying both clear dope and wood filler.



The main strut is cemented into the upper wing. When dried, cement the wing and strut to the mid-wing. Block up this assembly and allow to dry in proper position. The wing struts are fastened in place by forcing the wings apart and slipping them in position. Be liberal with cement on all strut joints. Apply two coats of yellow dope.

To cut cost, the canopy shown was substituted for a standard bubble. The enclosure is square in section and assembled off the fuselage. When dried, cement the canopy to the fuselage and mask all seams with red masking tape.

The checkerboard Trim-Film is next added, $\frac{1}{2}$ " for the upper and mid-wing and $\frac{1}{4}$ " for the tail surfaces. A black #4 is placed on the wing strut. The Air Trails lettering placed on the fuselage is cut from black Trim-Film, $\frac{1}{2}$ " high. With the trim completed, all areas are given a coat of fuel proofer, two coats applied to the engine compartment.

In flying our *Bouncing Bertie*, 75 feet of braided cable lines were used. Allow plenty of right rudder and reduce as required. Only partial power should be exercised when testing.

Bill of Materials

(Balsa unless otherwise specified)

1 pc. $\frac{1}{2}$ " x $\frac{3}{4}$ " x 36" (soft), tail surfaces. 3 pcs. $\frac{1}{2}$ " x $\frac{3}{4}$ " x 36" (med.), wing leading edge. 3 pcs. $\frac{1}{4}$ " x $\frac{3}{4}$ " x 36" (med.), wing trailing edge, 1 pc. $\frac{1}{2}$ " x $\frac{3}{4}$ " x 36" (med.), wing tips, wing center section. 1 pc. $\frac{1}{4}$ " x $\frac{1}{2}$ " x 18" (med.), elevator spar. 1 pc. $\frac{1}{4}$ " x 3" x 36" (hard), main strut, gussets, landing gear reinforcement. 1 pc. $\frac{3}{16}$ " x 3" x 18" (hard), wing struts. 3 pcs. $\frac{1}{8}$ " x 3" x 36" (med.), fuselage. 3 pcs. $\frac{1}{8}$ " x 2" x 36" (med.), wing ribs. 1 pc. $\frac{1}{4}$ " x 2" x 18" (med.), center section wing ribs, tail wheel support. 1 pc. $\frac{3}{8}$ " x $\frac{5}{8}$ " x 12" (hardwood), engine mounts. 1 pc. 2" x 2" x 4" (soft), cowl top.

Cement; clear and colored dopes; $\frac{1}{8}$ " plywood; $\frac{1}{16}$ " plywood; .040 aluminum; $\frac{1}{16}$ " dia. wire; $\frac{1}{32}$ " dia. wire; cloth hinges; 3" bellcrank; Trim-Film; fuel proofer; plastic tubing; fuel tank; wheels; .020" celluloid; masking tape; nuts and bolts; med. paper; engine; 10" prop; spinner.

