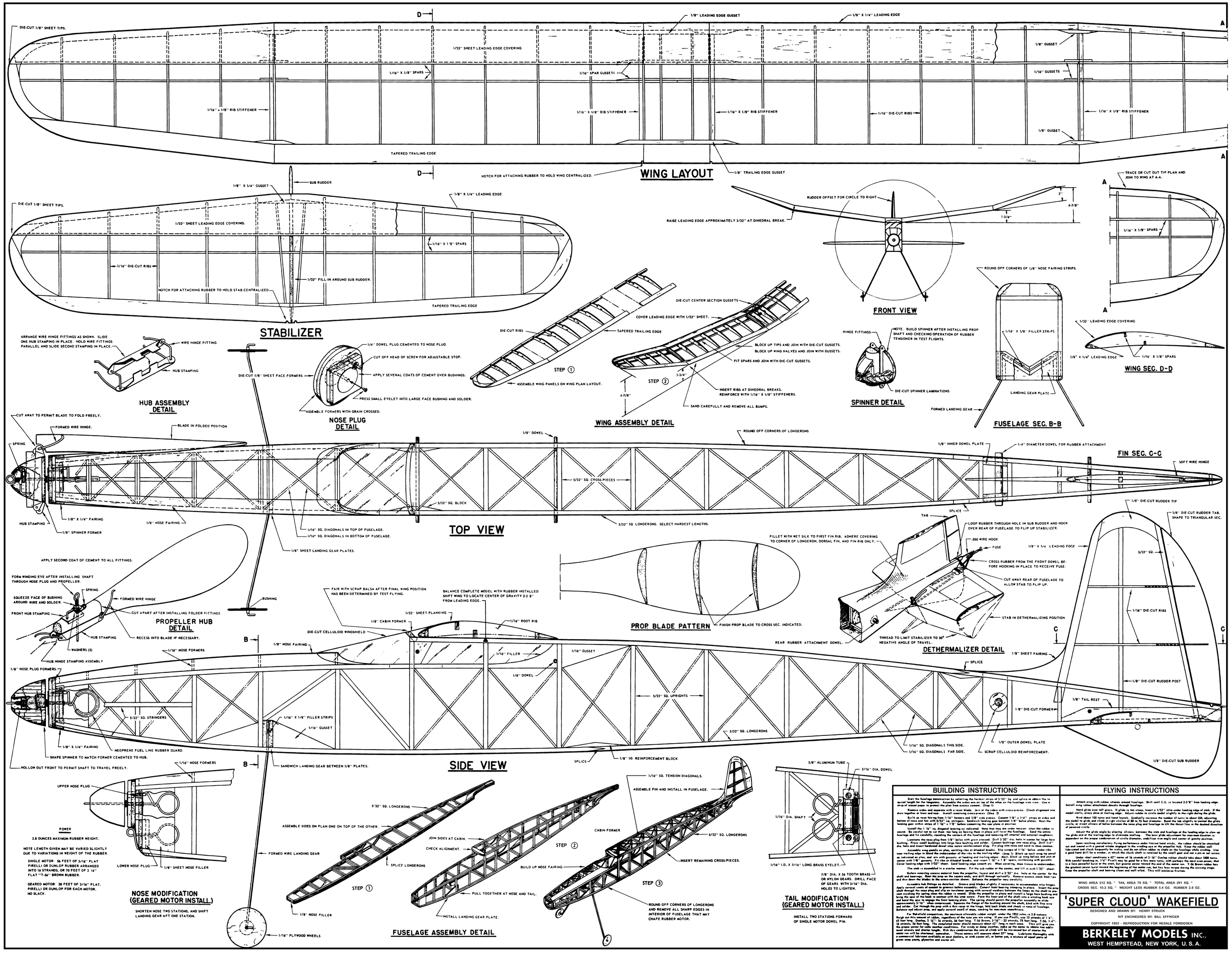

BUILDING INSTRUCTIONS

Start the fuselage construction by selecting the hardest strips of 5/32" sq. and splice to obtain the required length for the longerons. Assemble the sides one on top of the other on the fuselage side view. Use a strip of waxed paper to protect the plan from excess cement. (Step 1)

Remove sides and separate with a razor blade. Join at the cabin with cross-pieces. Check alignment and draw together at front and rear. Install remaining cross-pieces. (Step 2)

Build up nose from four 1/16" formers and 1/8" side pieces. Cement 1/8" x 1/4" strips at sides and bottom of nose and fair with 5/32" sq. strips. Sandwich landing gear between 1/8" x 1/8" balsa plates. Next the landing gear within strips of 1/16" x 1/8" balsa cement the rear plate in position.

Install the 1 16" sq. diagonal bracing as indicated. Note that they are under tension when the rubber is wound. Be careful not to cut them too long as forcing them in place will twist the fuselage. Sand the entire fuselage and fin carefully, rounding the corners at the fuselage and removing sharp edges and remaining stubbing.

Laminate the nose plug from 1/8" balsa with grain crossed. Drill 3/32" dia. hole in center for large face bushing. Press small bushings into large face bushing and solder. Cement bushings into nose plug. Drill 1/4" dia. hole and insert hardened dowel step screw reinforcement plug. Fit plug into nose and sand in nose contour.

Assemble wing panels on assembly jig as shown. Sandwich leading edge between 1/8" balsa blocks. Slip portions of 1/16" balsa under the rear trailing edge to blend the undercamber of the ribs to the trailing edge. (Step 1) Block up each wing tip panel as indicated on plan, and join with gussets at leading and trailing edges. Next, block up wing halves and join at center with 1/8" gussets. Fit ribs at dihedral break, and insert 1 16" x 1 8" spars, reinforcing with gussets. Cover leading edge with 1/32" sheet. Sand leading edge smooth etc. When covering, dope tissue to underbrace.

The stab is assembled in a similar manner. Fit the sub rudder at the center, and fill in with 1/32" sheet.

Before removing excess material from the propeller, layout and drill a 3/32" dia. hole at the center for the shaft and bearing. Rough the prop on the square ends, and drill blind vertically. Remove excess stock from tips and thin down the blades to the cross-section shown. Balance the propeller very carefully.

Assemble hub fittings as detailed. Groove prop blades slightly if necessary to accommodate wire hinges. Apply several coats of cement to grooves before assembly. Cement front bearing stamping in place. Insert the prop shaft through the nose plug and slip on tensioner spring with several washers between the loops on the shaft to prevent crushing the spring when the rubber is wound. Slide the propeller in place and install a large face bushing and bring the spur of the hook in contact with the stop screw. Form the front end of the shaft into a winding hook eye and bend the spur to engage the front bearing plate. The spring should permit the propeller assembly to slide approximately 2-3/16" when compressed. Squeeze the flange of the bushing around the shaft, bind with fine wire and solder. Cut through the prop with a thin razor at the hinge, fold back blade and check on nose of fuselage. Balance opt adjust prop, and apply several coats of dope, sanding for maximum smoothness.

For Wakefield competition, the maximum allowable rubber weight under the 1953 rules is 2.8 ounces. Weigh out this amount of rubber, regardless of the type you are using. If you use Pirelli, use 12 strands of 1/4", 43 feet long. Dunlop, 3 16", 16 strands, 56 feet long. T-56 Brown, 3/16", 22 strands, 75 feet long. T-56, 1/4", 16 strands, 56 feet long. Use manufacturer's recommendations for cement and care of rubber, which will give you the most, best results. Use manufacturer's recommendations for lubrication. For competition, use two middle strands and shorter length. With this combination the rate of climb will be increased but at maximum the motor run will be shortened somewhat. These motors will measure about 37" long. Lubricate thoroughly with a commercial lubricant available at most dealers, or with castor oil, or better yet, a mixture of equal parts of oil grain soap paste, glycerine and castor oil.

FLYING INSTRUCTIONS

Attach wing with rubber strands around fuselage. Shift until C.G. is located 2-3/8" from leading edge. Install wing rubber attachment dowels through fuselage.

Hand glide over tall grass. If glide is too steep, insert a 1/32" shim under leading edge of stab. If the model stalls, place shim at trailing edge. Adjust rudder to circle model slightly to the right during the glide.

Wind about 150 turns and hand launch. Gradually increase the number of turns to about 250, adjusting the model to glide and climb in a right circle of 50 to 75 feet diameter. Bend the tab slightly to control the glide circle, or insert shims of balsa between the nose plug and fuselage to tilt the thrust line in the desired direction of powered circle.

Adjust the glide angle by placing shims between the stab and fuselage at the leading edge to slow up the glide and at the trailing edge to eliminate stalling. The best glide adjustment for maximum duration is dependent on the proper combination of circle diameter, stabilizer iron angle and center of gravity position.

Upon reaching satisfactory flying performance under limited hand winds, the rubber should be stretched out and wound with a geared winder engaged in the winding eye of the propeller hub. Keep the rubber well lubricated and check frequently for nicks, and do not allow rubber to slide on the fuselage while winding. Use a good hand drill for a winder, in which the chuck shaft is retained by the small gear and not a pin or set screw.

Under ideal conditions a 42" motor 16 strands of 3/16" Dunlop rubber should take about 1000 turns. With careful breaking in, 1/4" Pirelli may be good for a few more turns, with perhaps the next even power, that is a less powerful burst at the start, but greater power toward the end of the motor run. T-56 Brown rubber has the greatest power burst toward the beginning of the motor run, but has less torque during the cruising stage. Keep the propeller shaft and bearing clean and well oiled. This will minimize friction.

WING AREA 212 SQ. " TAIL AREA 79 SQ. " TOTAL AREA 291 SQ. "
CROSS SEC. 10.2 SQ. " WEIGHT LESS RUBBER 5.4 OZ. RUBBER 2.8 OZ.

'SUPER CLOUD' WAKEFIELD

DESIGNED AND DRAWN BY: HENRY STRUCK

KIT ENGINEERED BY: BILL EFFINGER

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