FAIRCHILD-WARNER 22

DIHEDRAL
BAMBOO
WING RIBS
CENTER SPAR
CABANE STRUT
WING STRUT
RUDDER
PROP
ENGINE CYLINDERS
NOSE PLUG
STABILIZER
STUB WING
WHEEL STRUTS
OLEO STRUTS
WIRE AXLES
WHEEL PANTS
WHEELS

NOTE: WHEELS MADE IN 3 PIECES AND CEMENTED TOGETHER!

DETAIL OF STUB WING JOINT BETWEEN FORMERS B-C AND C-D

2 PIECES OF BALSA TO BE FITTED BETWEEN FORMERS B-C & C-D AND CEMENTED. CORNER TO RUN ALONG LONGERON AS ILLUSTRATED

LEADING EDGE
TRAILING EDGE
CENTER SPAR

OLEO STRUT
MAKE IN TWO PARTS WITH GRAIN RUNNING AS ILLUSTRATED
MAKE 2 OF EACH

NOTE! DO NOT CEMENT NOSE PLUG IN PLACE.

ENGINE CYLINDER
MAKE 7

WING STRUTS
WING RIBS
WHEEL PANT
WHEEL STRUT
OLEO STRUT
CABANE STRUTS
STUB WING
FILLET MAKE 2
BAMBOO
STABILIZER
RUDDER
J LONGERONS
FORMERS
STRINGERS
LINE OF THRUST
JOIN AND CEMENT SPARS
NOSE PLUG
ENGINE COWLING COVERED WITH STIFF PAPER.
COCKPITS
STIFF PAPER
PROP SHAFT
LEAVE THIS SECTION UNPAPERED TO ALLOW ACCESS TO REAR MOTOR HOOK
REAR MOTOR HOOK
SEE DETAIL SKETCH ABOVE
BAMBOO TAIL SKID
SECTION OF OLEO STRUT
MAKE 4
MAKE 2
WHEEL STRUT
WHEEL MAKE 6
MAKE 1
WHEEL PANT MAKE 8
WHEEL STRUT SECTION
STUB WING MAKE 2
NOTE! BLACK SQUARES DENOTE POSITION OF LONGERONS.
FORMER BRACES
NOTE: ALL FORMERS EXCEPT 'K' MADE IN TWO PIECES AND CEMENTED TOGETHER

DIRECTIONS FOR BUILDING YOUR FLYING MODEL

Good Flying Models depend on (1) careful construction of the various parts, (2) accurate alignment of the model, (3) correct balance and (4) proper adjustment of the wing and tail surfaces. Good-looking models cannot be had unless printed parts on the sheet balsa are cut out accurately or unless you follow carefully the outlines of the drawing when assembling the various parts. This is especially true of the fuselage which will appear lopsided if you are careless. Your airplane will not fly well unless great care is used on the assembly. The wings and stabilizers must be parallel to the line of thrust or you will be in trouble. If your plane is not in balance it will fail to rise or else it will rise too rapidly. Finally the wing and tail surfaces must be warped slightly for good flights.

PROCEDURE: Tack your plan sheet to a working board. Fasten a sheet of wax paper over it as a protection from the cement. Cut the "spray balsa" apart with a razor blade. This will give you a generous supply of 1/16" squares. The printed parts on the sheet balsa can be cut out later while you are waiting for other parts to dry. In general the procedure will be (1) construct the various parts, (2) to assemble the airplane, (3) to correct the balance, and (4) to adjust the wing and tail surfaces.

PARTS CONSTRUCTION. Study the plan carefully. (1) The Fuselage. Cut out the formers from the sheet balsa. Cement the stringers in place. Do not try to put all the stringers in at once. Start with four, in square or oblong patterns. After you have fastened these to the formers go ahead with the rest of the stringers. Cement the nose block in place. Bend the tail hook to shape and cement in place and then do the tail skid. Cover the body with dark tissue. Leave the bay at the tip of the fuselage open so that the tail hook is accessible. (2) The Wings. Place the spars in position on the top view of the wings. The forward spar in this case forms the leading edge, the rear spar the trailing edge. Cement the ribs in place. Put on the wing tips. When bamboo is used for wing tips it can be bent to shape by holding it over a candle flame. Cover the wings with light-colored tissue. (3) Tail Surfaces. Build the tail surfaces directly on the plan, the stabilizers on the top view and the rudder on the side view. Do not cover with tissue until they have been fastened to the fuselage. (4) The Propeller. The sawed balsa propeller is made ready quickly by smoothing with sandpaper. Pierce a hole for the propeller shaft. Insert propeller shaft first through the nose plug, then through the washers and finally through the propeller. Bend wire over the propeller and cement in place.

AIRPLANE ASSEMBLY. Before assembling your model, study the plan carefully (1) Wing Assembly. Attach the wings to the body after carefully noting that the bottom of the wings is parallel to the line of thrust. You can find the line of thrust by drawing a line on the side view of your drawing from the center of the propeller hook to the center of the tail hook. Then check your assembly with the front view of the plan to see if you have the proper dihedral in the wings. Attach the wing struts. (2) Stabilizers. Make sure that they are parallel with the line of thrust. Then fasten the rudder in place. Cover the stabilizers with light color tissue; the rudder with dark tissue. Cover one side only of the tail surfaces. (3) The Landing Gear is next. Then do the tail skid or wheel. (4) Hook up the propeller by catching the rubber motor over the propeller hook, drawing the other end through the body by means of a loop wire hook or string, and then hooking it on to the tail hook. (5) Shrink tissue tight by spraying the model lightly with water

to the right, correct with a little left rudder. If the airplane makes a circular dive to left, correct by "washing-in" the tip of the left wing. Do this by gently warping the trailing edge of the right wing. Make whatever adjustments are necessary before flying it again by warping the wings or tail surfaces or by correcting the balance. Fly again. Once the model is properly adjusted, wind the motor fully and fly again.

FLIGHT TESTING. This type of model flies best in light air or a calm. Be sure that you have plenty of room, free of trees and other objects. Remember that your airplane will not be likely to fly well unless it makes good glides. Hence, the first thing to do is to glide your model. If it noses down too sharply as you glide it, correct by raising the stabilizers slightly. Make these adjustments by bending up slightly on the trailing edge of the stabilizers as you bend them. If it will stall quickly, those that are nose heavy will lose altitude rapidly and by thrusting it forward plane turns to the left, correct by giving it opposite rudder; if it turns

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