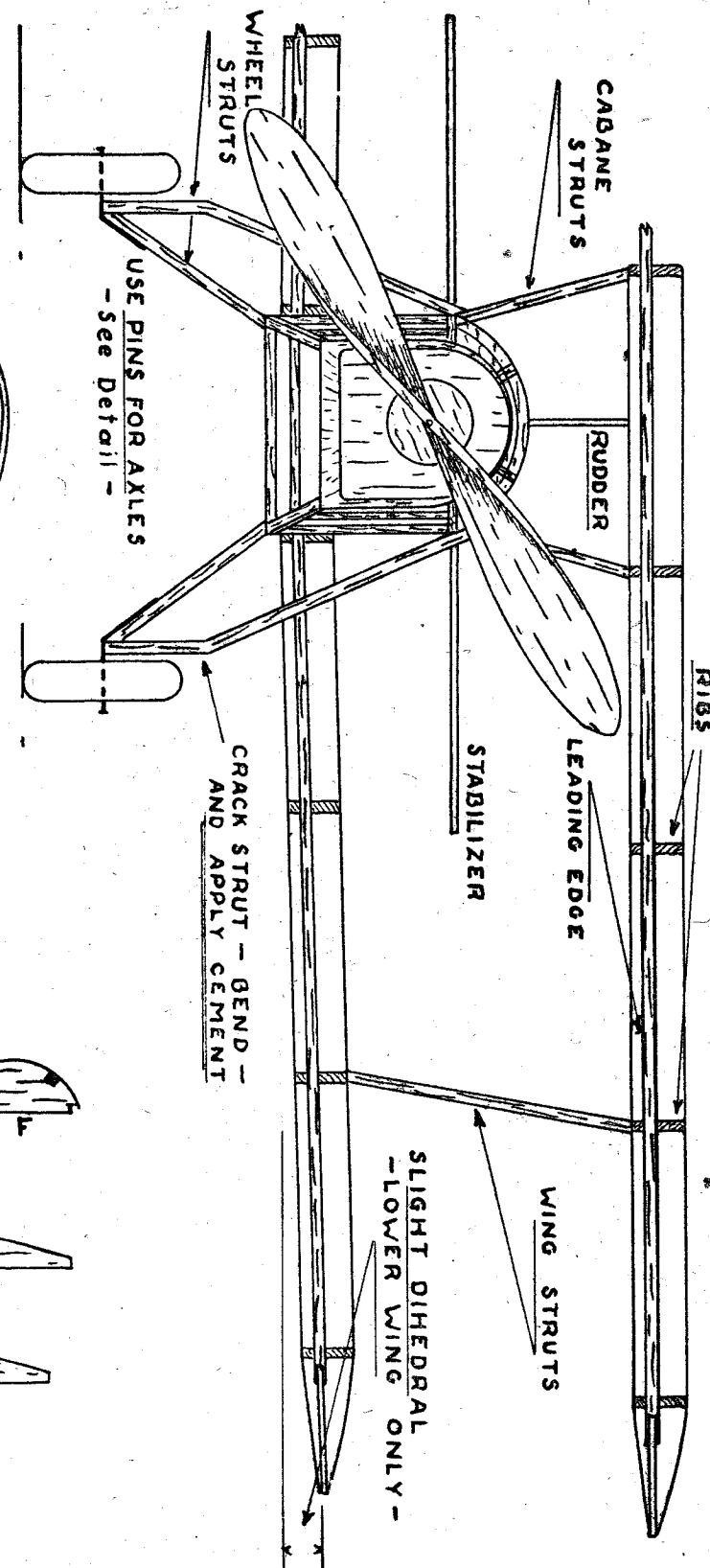
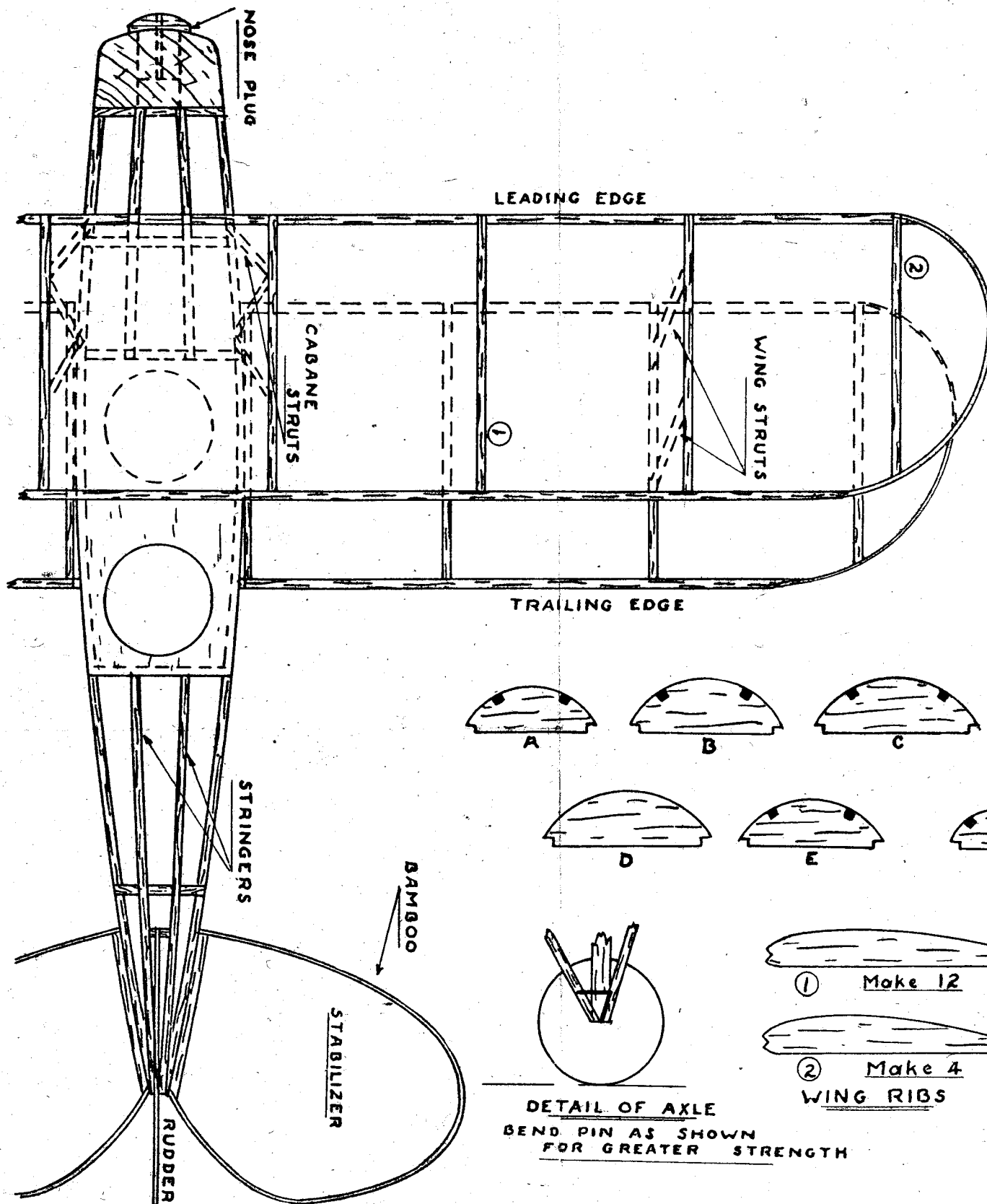


WACO → BIPLANE F-1



DIRECTIONS FOR BUILDING YOUR FLYING MODEL

Good Flying Models depend on (1) careful construction of the various parts, (2) accurate alignment of the (3) correct balance and (4) proper adjustment of the wing and tail surfaces. Good-looking models cannot be mass printed parts on the sheet balsa are cut out accurately or unless you follow carefully the outlines of wing when assembling the various parts. This is especially true of the fuselage which will appear lopsided 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 fall to 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 the cement. Cut the "spray balsa" apart with a razor blade. This will give you a generous supply of 1/16". The printed parts on the sheet balsa can be cut out later while you are waiting for other parts to dry. In the procedure will be (1) construct the various parts, (2) to assemble the airplane, (3) to correct the balance, (4) to adjust the wing and tail surfaces.

PARTS CONSTRUCTION: (1) The Fuselage. Place your wood strips on the side view of the fuselage. Use to hold the longerons (stringers) in place. Cement the upright and diagonal braces to them. Build the second

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. (Special Instructions for F-2. Do not cover the wing fillet section until after the wings have been fastened to the fuselage and the struts fitted in. See instructions under Airplane Assembly for directions how to put on wings.) (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. (Special Instructions for F-14, F-20, F-22, F-23. Make the wheel pants as follows: Cut the fillets and sides from the balsa sheet, cement together and sand to shape.)

AIRPLANE ASSEMBLY: Before assembling your model, study the plan carefully and note the exact position of the various parts in relation to each other. (1) Wing Assembly for F-13, F-14, F-15, F-16, F-17, F-18, F-20. 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. When checking your assembly with the front view of the plan to see if you have the proper

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) Up the propeller by catching the rubber motor over the propeller hook, drawing the other end through the hole means of a long wire hook or string, and then hooking it on to the tail hook. (5) Shrink tissue tight by spraying the model lightly with water except for the tail surfaces. Water is used instead of dope on light models as makes the models too heavy.

AIRPLANE BALANCE: The point of balance of your model is about one-third back from the leading edge of the wing. If the plane is nose heavy, correct by adding weight to the tail or by reducing the nose weight; if the model is tail heavy, correct by adding weight to the nose. BB shot makes good nose weights. Airplanes that are tail heavy will stall quickly; those that are nose heavy will lose altitude rapidly when hand-launched.

FLIGHT TESTING: This type of model flies best in light air or a calm. Be sure that you have plenty of free of trees and other objects. Remember that your airplane will not be likely to fly well unless it makes 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 trailing edge of the stabilizers slightly. Make these adjustments by breathing heavily on the stabilizers as you bend them. If it stalls correct by lowering the trailing edge of the stabilizers. If the plane turns to the correct by giving it opposite rudder; if it turns 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 wing tip downwards. A circular line to the right would be corrected by "washing-in" the tip of the

NN
CC
77
55
66