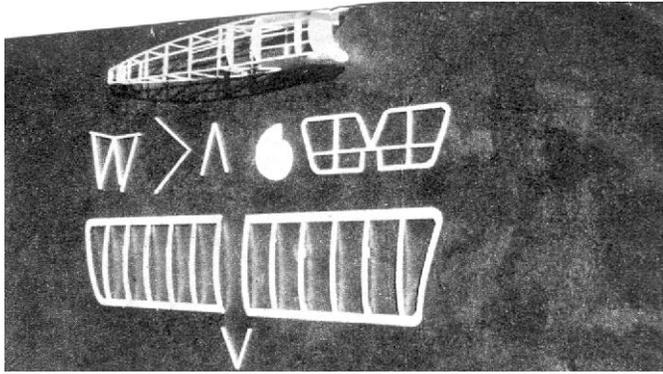
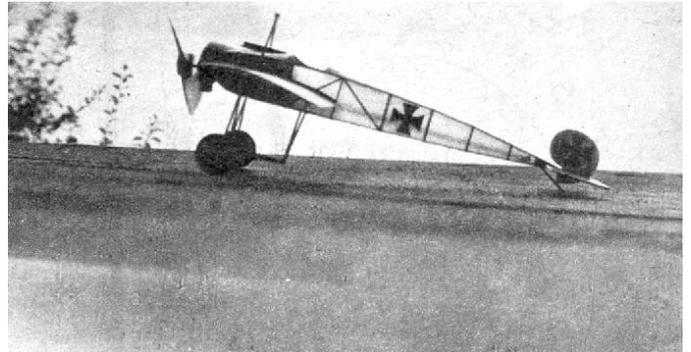


# FLYING SCALE FOKKER EIII

by JOSEPH H. WHERRY



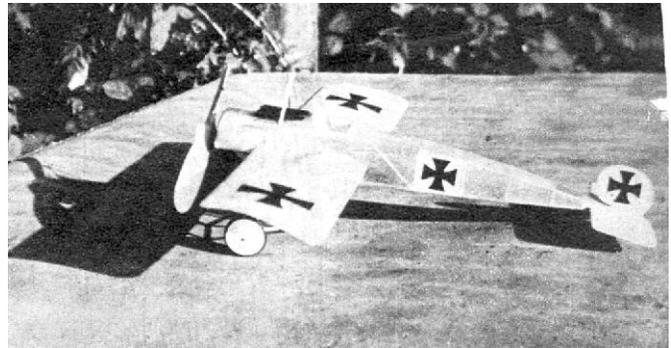
Major assemblies of Fokker E-III model; note cambered wing



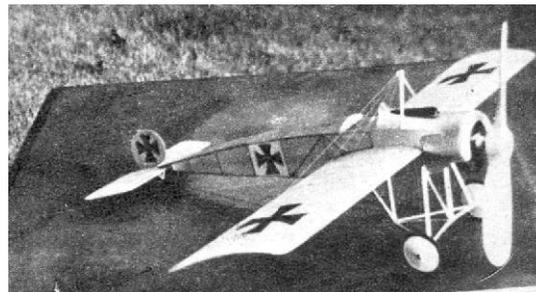
Side view of E-III as single machine gun model; note engine



Three machine gun version just before a rainy day dawn patrol



Side view of Fokker E-III in three machine gun version



Front view shows landing gear details, flight and landing wires

THE author used medium weight balsa for all parts except the landing gear which is hardwood dowel. The model is designed as closely as possible with available data to the scale of 1/2" to the foot. The only part not to scale is of course the propeller, which

however is realistic and close to scale. Built very lightly, the author's model weighs only 1/2 oz.

The fuselage is constructed first, the two flat sides (shown in solid black) being laid out directly over the side view. Study your plans carefully and

note the solid 1/16" balsa side section at front of fuselage; also note gussets at the junction point of wing, and the small gusset at tail of fuselage to provide solid juncture point for the elevators. All longerons, uprights and diagonals are of 1/16" sq. balsa. Join the fuselage sides first at front and back, then add all remaining crossbraces which are also of 1/16" sq. stock.

The fuselage of the real E-III was square except for the three formers at front and on top of fuselage. These formers, shown on Plate 1, are cut from 3/64" sheet stock and cemented in place as indicated. The stringers are 1/16" by 1/32" and are cemented in notches on formers. Now from a small block of balsa carve the two cowl fairing pieces to outline; note the dotted lines on side view of fuselage.

Construct the motor cowl next, cutting the two formers from 1/8" sleet stock. The front plate is clearly shown on the front cowl former pattern by dotted lines; it is cut from 1/16" sheet stock with a small hole as indicated for the nose plug. This front plate is cemented to the back of the front cowl former.

The cowl is formed by connecting the two formers by 1/16" sq. Stringers placed in notches, the stringers being only 7/16" long. This assembly is now covered with 1/64" sheet balsa. When dry, cowl may be sanded to crosssection indicated in side and top views, and glued in place. With cowl in place and cement dried, streamline the two side fairing pieces, using razor blade and sandpaper. (The author finds the small fingernail emory boards used by his wife very handy for such streamlining etc.; they can be purchased in most dime stores.) With the cockpit outline of heavy bond paper and the tail skid in place, only the rear motor hook is necessary to complete fuselage. This latter part is a small 1/16" diameter hardwood dowel inserted through sides at point indicated just forward of elevator by small black dot on side view.

The tail surfaces are next on our production list. The rudder is simply cut from 1/32" sheet, and the elevators are built of 1/16" flat stock of widths indicated on Plate 1. Elevator should be built in one piece, so it is essential to complete left half by tracing right half and reverse the tracing. Elevator is flat without camber.

Wings are next. Note that two rib outlines are shown on wing plan. The author used the scale rib on his model with excellent results. However, the less experienced builder may prefer to use the non-scale rib with camber on top surface only. The latter rib has the added advantage of being deep enough to

accommodate a 1/16" sq. spar. The author's model with the scale rib has no spar and may be duplicated successfully if the builder is cautious and accurate in his work. In any event, the wings are constructed directly over the plans. The right wing plan may be duplicated by tracing and reversing. Crosssections of leading and trailing edges are each 1/4" wide. The wing tips are of 1/16" flat stock. Tips are easily cambered to same curve as top of the rib by soaking in hot water and allowed to dry. The small circles on the third and fifth ribs are the points at which the wires attach to wing. These points can be easily reinforced by a cement coating, or the builder may wish to reinforce the sides of the ribs with small balsa scraps.

With fuselage, tail surfaces and wings finished, we are ready to cover; that is, after all frameworks have been sanded smoothly with very fine sandpaper, or preferably with the fine side of previously mentioned emory board.

Now comes the job which can ruin the most carefully constructed model. Caution - take your time! To make the model as light as possible, the author used (and recommends) lightweight colored tissue. Since most German World War I fighters were gaily colored, a pleasing effect was gained by using bright blue tissue for the fuselage, and yellow for the wings and elevators. Now note accompanying photographs. From the solid sheet sides back to the second upright, use one piece of blue tissue; between second and third uprights use a small piece of white tissue (this gives a white background to the insignia); and from third upright to rear, use another piece of colored tissue.

The author at this point would remind the builder that when covering all parts it is desirable to cover with the tissue grain running the longest way. The curved portion of the fuselage bottom just forward of landing gear is best covered with bond paper; aft of this, use one piece of blue tissue. The small turtle deck just aft of cockpit is covered with one piece, while the entire flat back portion of top is covered with another single piece. Forward of cockpit, several small pieces can be used to secure a smooth job. The front portion of fuselage is later color doped.

Now cover elevators, using one piece of yellow tissue on each side. Trim first side covered with razor blade so that no tissue extends beyond edges. A margin of 1/8" all around elevators should remain after other side is covered. With care, all exposed wood portions can be covered by utilizing

this margin.

Rudder, being solid 1/32" sheet, is not covered; it is instead given a light sanding, and a small bit of clear dope is rubbed with index finger into each side. This gives a smooth light background for applying insignia.

Wings are carefully covered, one piece to each side. If scale ribs are used it will be necessary to put tissue cement on bottom of each rib so the tissue will adhere to the concave surface - otherwise spread tissue cement (or clear dope, which author prefers to use) only on outline of surface being covered.

With covering completed, spray all parts with an atomizer taking care that the wings do not warp. Clear dope is used on fuselage only! Do not dope wings and elevators; to do so will cause the light framework to warp.

Now for the landing gear which is made of 1/8" by 1/16" hardwood strips sanded to streamline shape. Check accompanying photo of framework, then construct directly over plan on Plate 2 the front vertical member of the landing gear. This front framework consists of struts A, A, B, B, and C. When dry remove from board and construct the rear vertical member which is merely a "V" of struts A, A. The bottom, or horizontal assembly, is made in like manner directly over plan on Plate 2. When these members are thoroughly dry cement them in place, using plenty of cement and being careful to observe from side view, Plate 1, that the rear "V" member slants forward very slightly. When attaching front and rear struts it is best to remove tissue very carefully from framework at point of attachment. Checking front view, install small music wire axles in proper place; bind same with thread and cement firmly.

Now install the cabane strut (inverted "V") just forward of cockpit in same manner as landing gear. It is built over front view plan and is cemented in place at this time. Note the small rectangular block at top of cabane strut; this is made of scrap balsa and is cemented securely in place.

Wheels are made lightly in following manner: on 1/8" sheet stock, using a compass, draw an outside circle 1-1/8" diameter, and inside circle 7/8" diameter. Cut out inside circle first, then very carefully the outside. Wheel disks are made by cutting from bond paper, four disks 1-1/16" diameter. Noting Plate 2,

you will see that the wheel disks are slit and overlapped 1/8". This makes a shallow cone for each side, light yet sufficiently strong for this little plane. A simple but effective bearing is made at center of, each disk by making a small spot of cement. Wheels are held in place on axle by a drop of solder, or another drop of cement.

Now for assembly. Cement elevator in place with no incidence, then rudder. Wings are cemented in place without dihedral and with 5° positive incidence.

The front portion of fuselage, noting, photos, the motor cowl, landing gear and tail skid can at this time be color doped silver. Windshield is cut from celluloid according to front view; machine guns are made from balsa scraps, doped black and cemented in place just in front of cockpit.

A suggested dummy motor for the flying scale builder is shown on Plate 2 at top of same, and for the detail addict a complete dummy motor of nine cylinders may be placed inside the cowl of a non-flying model. The dummy partial motor is cemented to the sides of the cowl. Dummy motor and front cowl plate, of course, are doped black.

Refer to photos and add landing and flying wires; a small additional stress wire is added (as shown on front view) between wing leading edge and point 1/4" to rear of cowl front. Add Maltese Cross insignia of black tissue.

Carve propeller from balsa block of size noted on plans, add prop shaft of medium music wire, install same with nose plug, washers, two loops of 1/8" flat rubber well lubricated and your E-III is ready for test flight.

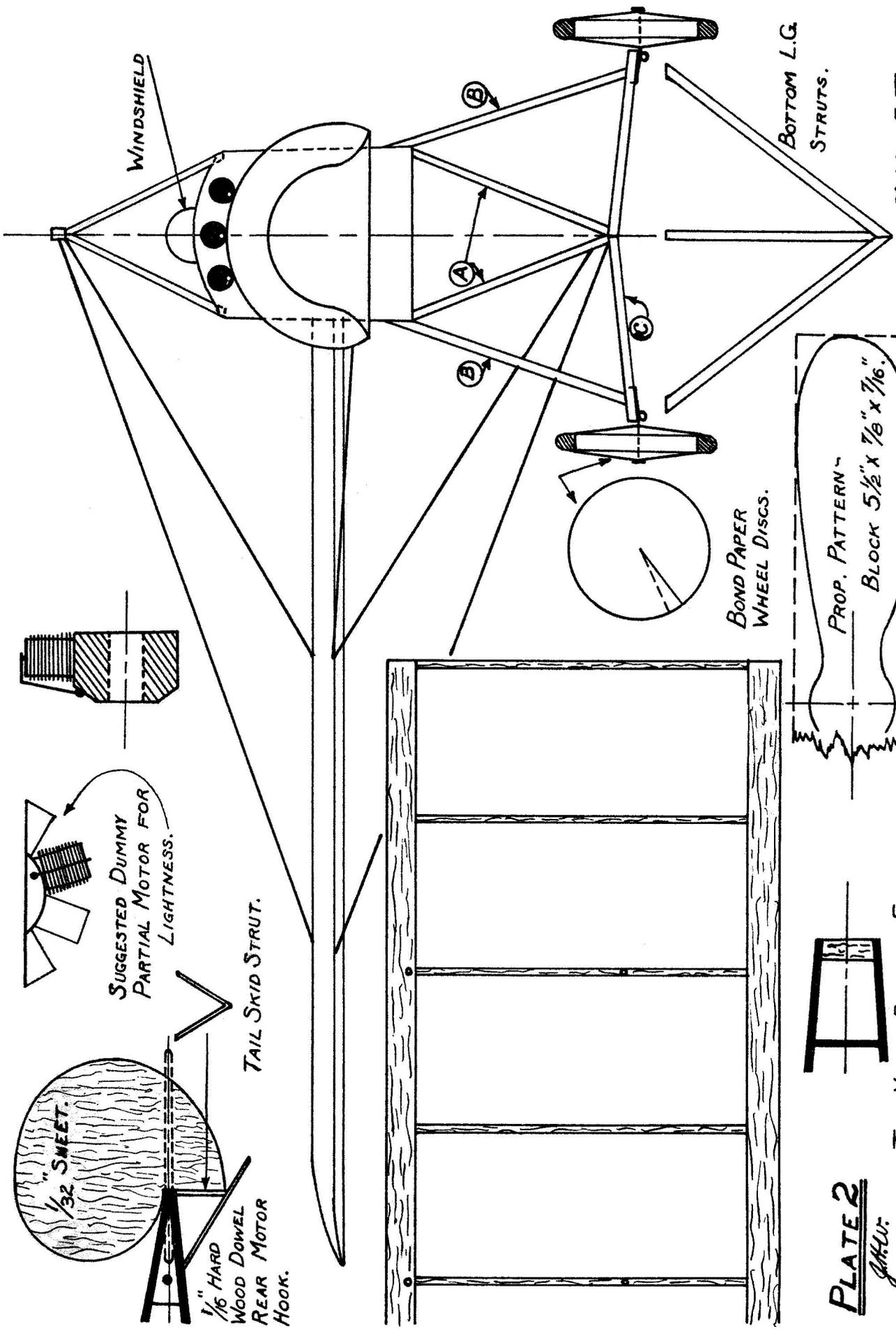
Test first by gliding into tall grass. Small weights can be placed in back of dummy motor or under elevators for balancing.

The author's E-III flew with no balance weights, but materials etc. cause various models of the same plane to have different characteristics.

The original plane used wing warping; hence no aileron outlines are needed. Likewise, the entire elevator and rudder assembly was hinged.

The enterprising builder can add details from magazine photos. Take your time, work carefully, and you'll have a very unusual model of which you can justly be proud.

Scanned From August, 1945  
Model Airplane News



WINDSHIELD

BOTTOM L.G.  
STRUTS.

Fokker E.III.

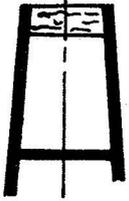
BOND PAPER  
WHEEL DISCS.

PROP. PATTERN ~  
Block  $5\frac{1}{2}'' \times \frac{7}{8}'' \times \frac{7}{16}''$ .

SUGGESTED DUMMY  
PARTIAL MOTOR FOR  
LIGHTNESS.

TAIL SKID STRUT.

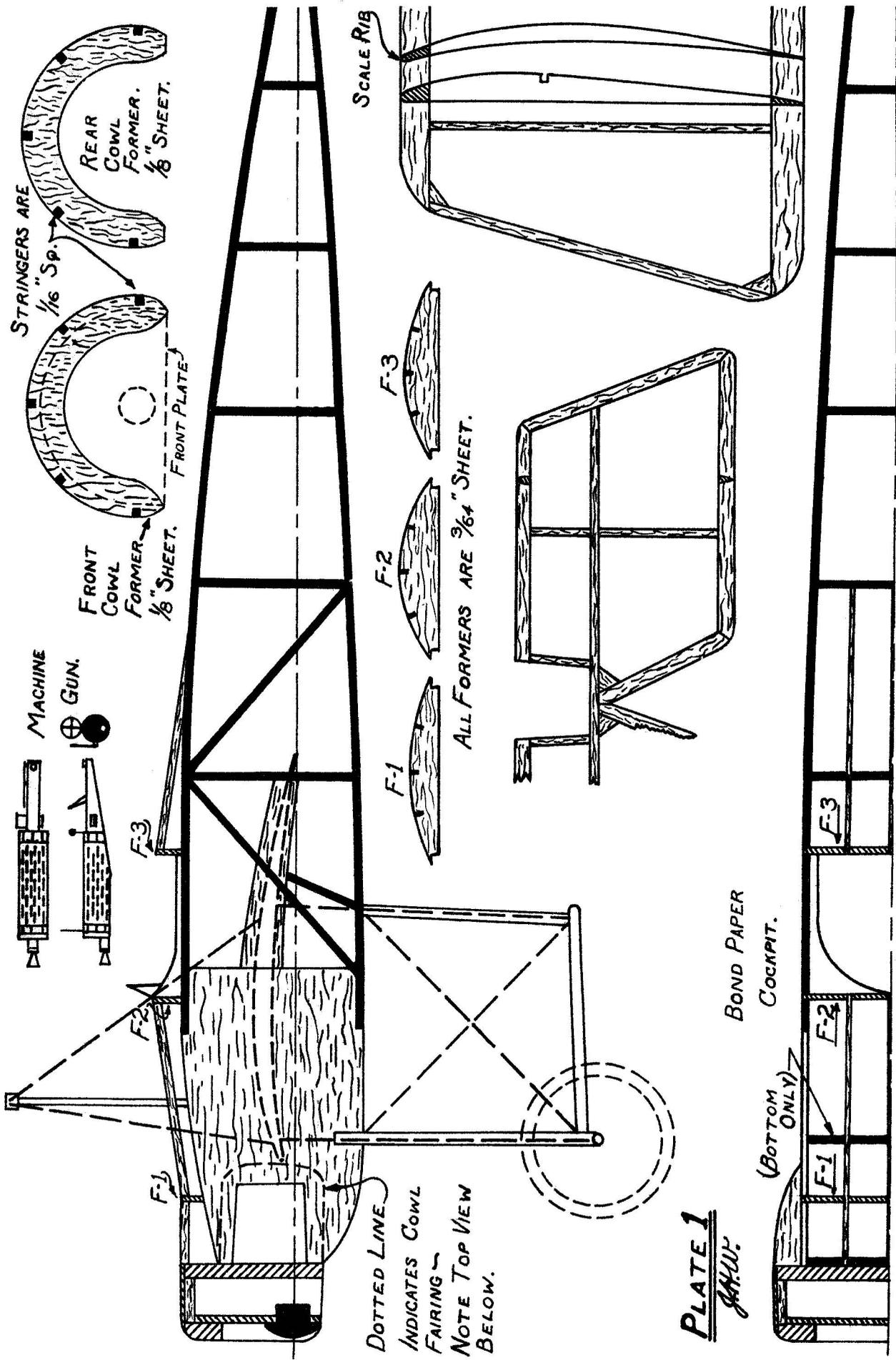
TOP VIEW ~ REAR OF FUSELAGE.



$\frac{1}{16}$  HARD  
WOOD DOWEL  
REAR MOTOR  
HOOK.

**PLATE 2**

*g.H.W.*



1915 Fokker E.III German Fighter.