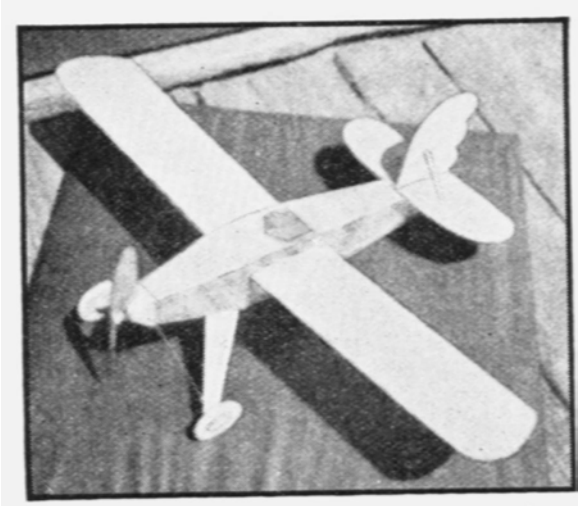
Build the Baby Arrow Pleasure Plane

A Simple Sturdy Little Fuselage Model That Any Beginner Can Build and Fly Successfully – Just the Right Plane for Your Experiments

By D. A. Ritter

EVERY model builder has a dream of designing a simple plane which he can build in a few minutes and which will have a performance comparable with more complicated planes. Well, here is one of this type. A glance at the plans will show its simplicity and the appearance of the model in the pictures suggests its fine performance. The ship is very well designed for stability and you can be assured that it is an excellent flier. The ship is made almost entirely from 1/16" sheet balsa.



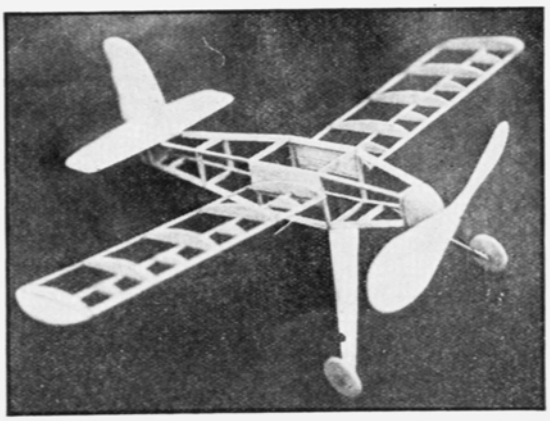
The little plane that looks and acts like a big one.

To start the construction first cut out the longitudinal stringers of the fuselage. These are sliced from 1/16" balsa sheet and are 1/8" wide. Next cut the twenty fuselage struts as shown in drawing No. 2. You will notice that the ends of the struts are beveled. This indicates that the sides of the longerons are parallel with the diagonals of the fuselage panels and not vertical with the sides.

Next make the nose and tail plugs. When this is done you are ready to assemble the fuselage. The first step is to

crease the longerons so that they will assume the angles shown in panel B. If they are wet this will be easy. Then cement the vertical and horizontal cross struts to the four longerons. Do this by making one side of the fuselage at a time and then connecting the two sides with the cross struts. Cement the longerons to the nose and tail plugs as indicated in the drawing.

From 1/16" sheet cut out the side fuselage panels H, to which the wings will be cemented. When this is done cement them in place to the fuselage struts, B, as shown in the assembly drawing. When making the nose and tail plugs they may be cut from pieces of balsa 5/8 x 5/8 x 1/2".



The framework is easy to construct and can be completed in a very short time.

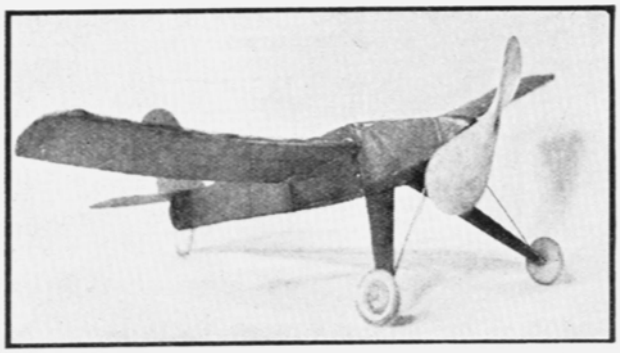
The fuselage now may be covered with a good grade of Jap tissue and doped or sprayed with water. Do not cover the side pieces, H, but cut the paper to fit around them. Cement the paper to the front, rear and bottom edges of H.

The landing gear comes next. Bend the wire, G, to the shape shown on plate No. 2 and cut out the balsa struts, F, from 1/16" sheet. A small strut, D, is cemented between the two landing gear struts across the bottom of the fuselage from one longeron to the other. The picture of the uncovered skeleton shows this strut. The landing gear struts, G, are made from a piece of No. 12 music wire, bent as shown. The first step in assembling the landing gear is to cement the landing gear struts, F, to the longerons in the position shown in the assembly drawing. Next cement the wire, G, to the nose and pass the nose through the holes in the lower ends of struts. Cement the wire to the balsa and attach with thread. When this is done two wheels may be made of 1/16" sheet balsa, glued together with the grain running at ninety degrees to each other. Fibre washers may be cemented on either side of the wheel around the hole.

It is a simple matter then to put the wheels over the end of the landing gear shafts and fasten them in place by bending up the end of the wire or winding the end of the wire with a thin coat of cement. A piece of balsa should be cemented to the lower edge of the lower longerons immediately in front of the tail plug. To the bottom of this the tail skid is cemented after it is made from 1/32" diameter strong wire. The propeller shaft and rear hook are bent from No. 12 music wire. Rubber tubing may be slipped over the hooks to prevent the thin wire from cutting into the rubber motor.

Around the holes in the front and rear of the nose plug two 1/8" brass washers are cemented in order to serve as a bearing and prevent the plug from wearing. Next you can make the propeller. This is cut from the balsa block shown in plate No. 2. It is whittled out in the customary manner to make a right hand propeller. It can be painted with thin dope or banana oil if desired. This fills in the pores and makes completed propeller stronger. Smear a little glue around the hole in the hub as this keeps the shaft from falling through after it is inserted and bent over at the front end of the propeller in order to secure it firmly. Before the shaft is inserted in the propeller a washer should be passed over it. When the shaft is in place the washer should be cemented to the rear face of the propeller.

The tail assembly on this model is very simple to construct. Simply cut out the stabilizer and rudder from 1/32" sheet balsa and cement them to the fuselage as shown.



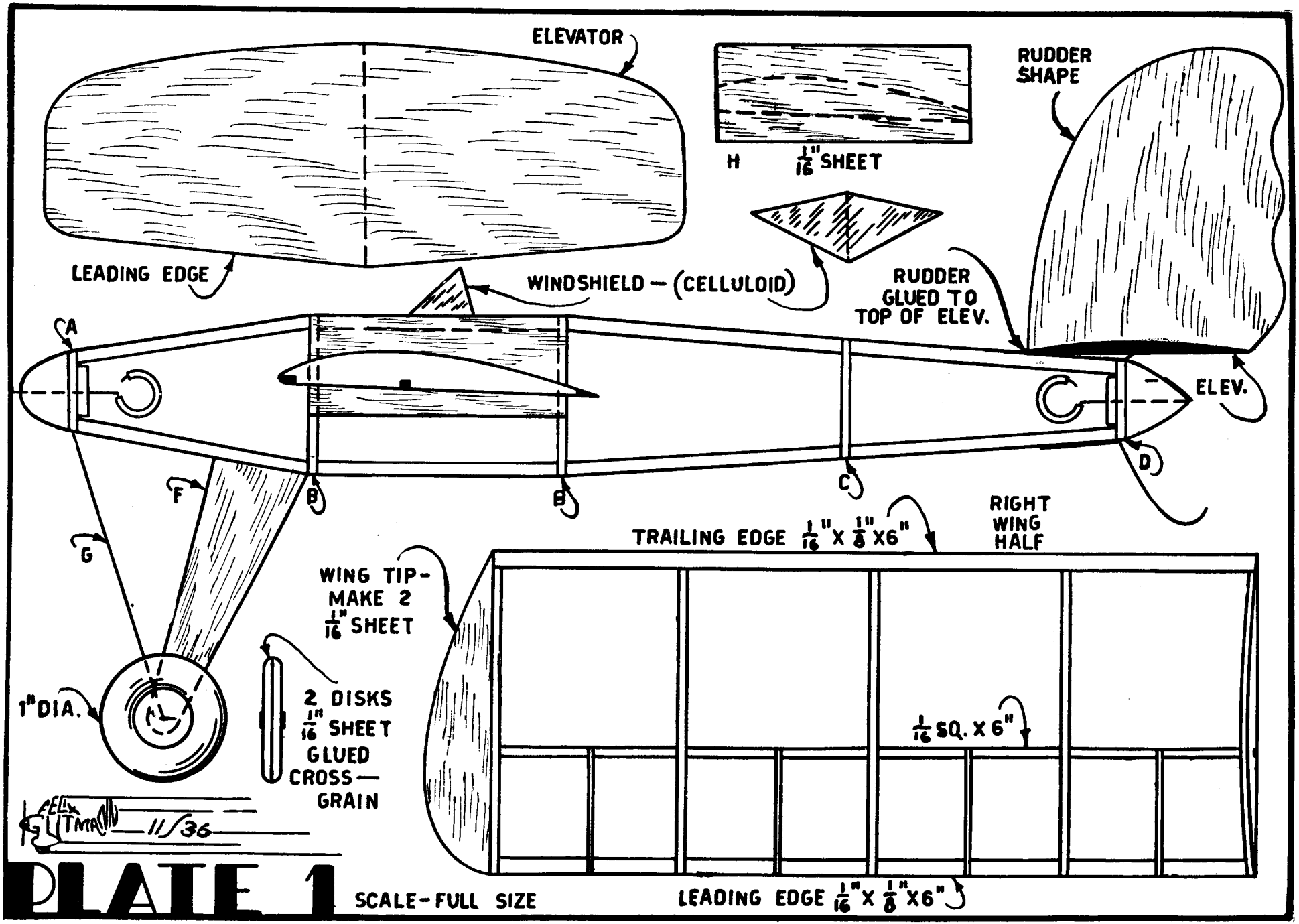
Its design insures excellent stability. The relatively large propeller provides a steep climb and snappy performance.

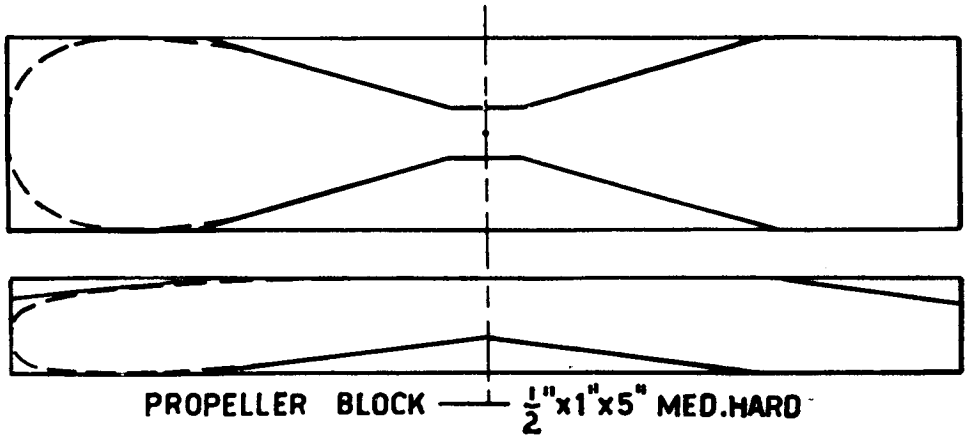
Don't forget the stabilizer wedge (see plans) when attaching the tail assembly, as the stabilizer would have too much angle of incidence without it. After the rudder is glued upright on the stabilizer, it should be braced with rudder

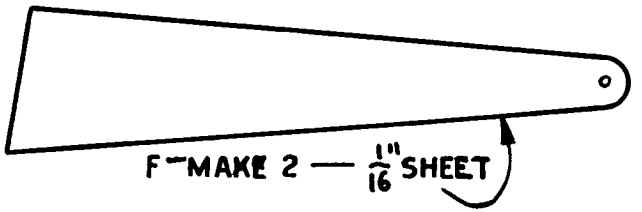
braces, which are made from 1/16" sq. bamboo. (See picture.)

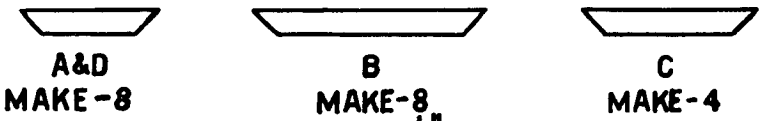
The motor should be installed next. About four strands of 3/32" or 1/8" flat rubber should be sufficient. String this between the propeller and tail skids. All we have left to build now is the wings. Drawing No. 1 clearly shows how the wings are built. Cover wings with Jap tissue and dope. Do not attach wings to fuselage until covered. Here is a hint on doping wings: Run the strokes back and forth from leading edge to trailing edge. First dope the top of the wing, between two ribs, then dope the bottom of wing between the same two ribs, thus doping the top and the bottom of the wing at practically the same time. This prevents the wing from bending, as you know dope tightens or shrinks the tissue. If just the top of the wing were doped, it would bend the wing upward before you had time to dope the bottom.

You should not have any trouble in building this model. However, if any further information is needed regarding the "Baby Arrow," just write the author in care of MODEL AIRPLANE NEWS enclosing a self-addressed stamped envelope.

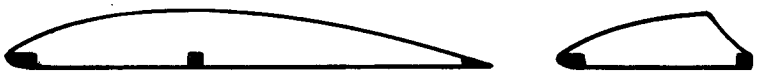

ELEVATOR
LEADING EDGE
H
1/16" SHEET
RUDDER SHAPE
WINDSHIELD — (CELLULOID)
RUDDER GLUED TO TOP OF ELEV.
ELEV.
A
B
B
C
D
F
G
TRAILING EDGE 1/16" X 1/8" X 6"
RIGHT WING HALF
WING TIP - MAKE 2 1/16" SHEET
1" DIA.
2 DISKS 1/16" SHEET GLUED CROSS — GRAIN
1/16 SQ. X 6"
LEADING EDGE 1/16" X 1/8" X 6"
FELIX GLITMAN 11/36
PLATE 1
SCALE - FULL SIZE

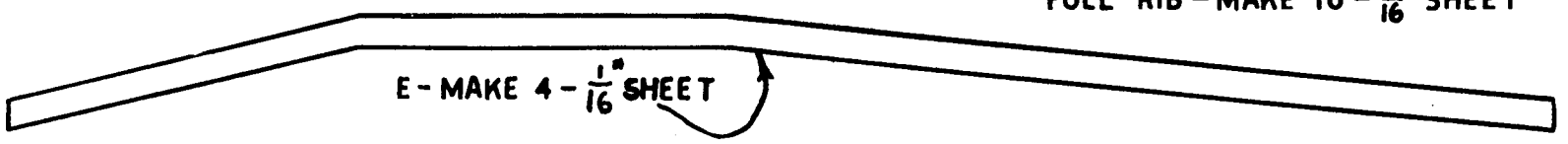






POWER: 2 STRANDS 1/8" FLAT BROWN LUBRICATED





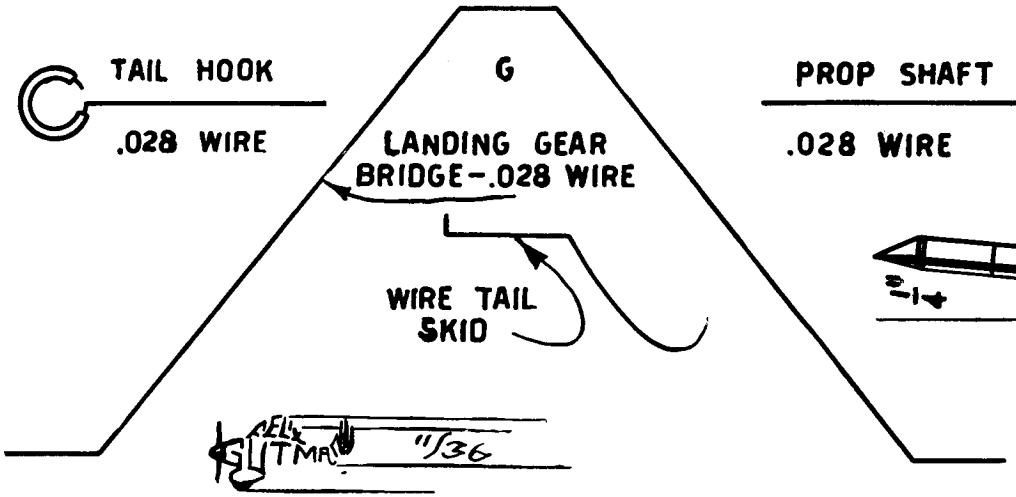


PLATE 2

SCALE FULL SIZE
EXCEPT WHERE NOTED —