

# An Experimental Flier for Novice or Expert

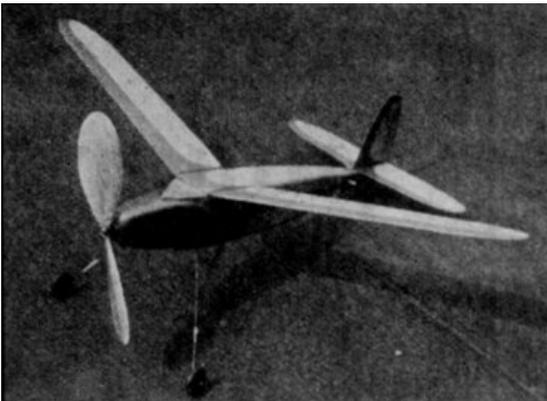
## Here's One of the Most Reliable All Balsa Fliers That You Have Ever Built -- Graceful and Easy to Construct

### By FELIX GUTMANN

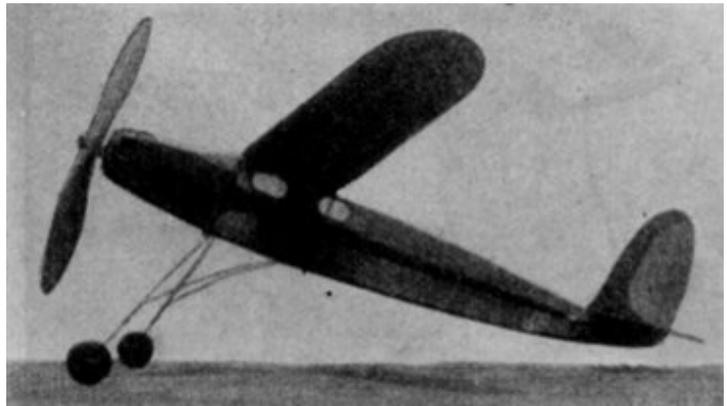
HERE is a model where looks and clean lines count as much as good flying ability. It is very sturdy and a hard one to wreck. This is due mainly to its all balsa construction and the use of the proper grades of balsa throughout. The original model had a wing loading of 1-1/3 ounces per 50 square inches of wing area, which is quite high. Despite this fact it flew as if it were of ordinary built-up and tissue-covered construction, but naturally would fly in winds prohibitive to the latter type plane. If the builder wishes to reduce the weight of the model, he may leave off the decorations (shown also on the plan) for which 2/3 ounce of colored dope was used. Doing this

of course takes away part of the "eye-catchiness" so desirable in a ship. Builders who feel ambitious enough and wish to have just a fair weather flier should build up the wing and possibly the tail with ribs and spars, and use tissue for covering. Builders who would like a 39" model instead of one with a 26" span should multiply the dimensions on the plan by 3/2 when scaling it up.

If the builder does decide that he wants to decorate the ship, he should paint it before the wing and tail sections are cemented together. It is advisable to use Scotch cellophane tape for the striping.



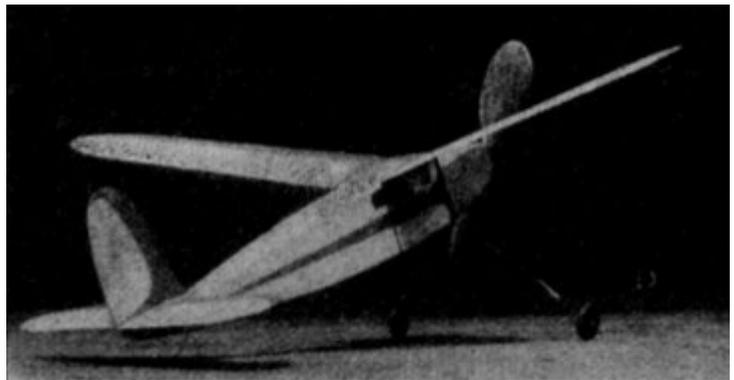
The large "prop" gives real performance



It resembles a contest model



Reaching for the clouds



Its lines give "scale" appearance

# Construction

## Wing

The wing is cut from 3" wide triangular glider wing stock or from medium 3/16" wood, preferably the former. 1/8" stock may also be used. The shape may be laid off right on the wood, except the tips. For these a pattern must be made. Use a piece of smooth cardboard 3" x 3-1/2". Lay off a series of 1/2" squares corresponding to those shown on the plan. Now lay off a series of dots on the sides of the squares corresponding to the sides of the squares on the plan through which the outline of the tip passes, making sure that the dots are at a distance from one end of the line proportional to the corresponding distance shown on the plan. Now connect the dots either carefully free-hand or with a drawing curve. The outline is then cut and traced on the wood. For the other tip turn the pattern over and trace. The outline may now be cut and the wing section carefully formed. Note the center section of the wing has the ends inclined for the dihedral of 2-1/4" to be put in the wing after it is finished with 10 nought sandpaper and two coats of banana oil.

## Tail

The tail is made from 1/32" medium hardness sheet balsa. The outline is obtained in the same manner as the wing tips, by patterns. The tail is also finished with 10 nought sandpaper and given two coats of banana oil with intermediate sandings. The rudder is cemented to the top of the elevator.

## Fuselage

Only the fuselage side need be drawn over. Get a piece of paper longer and wider than the fuselage and draw a center line which is 16-7/8" long. Next lay off all the longitudinal dimensions, that is, the distance between all the vertical cross-braces (shown directly under the side view.) Next lay off all the vertical dimensions at each station starting from the center line. Now connect all the dots, top and bottom. It is not necessary to draw the parallel lines representing the longerons and braces if one is careful. The two fuselage sides may now be built from the drawing. To assemble the sides, obtain the dimensions of the horizontal cross-braces from

the top view. When the simple framework is finished, make the tail hook former as per directions on the smaller drawing. When this is dry, insert the tail hook and install the whole thing in place in the framework. Now make the bamboo "V" shaped front window.

The wire landing gear bridges are made of .034 music wire and are attached as shown in the lower left hand corner of the plan. The wheels may now be made as shown in the drawing, and attached. The fuselage is covered with 1/32" medium sheet balsa. Two patterns of the side view of the fuselage are cut on some of the sheet. In the correct position, cut out the windows. On the side of each sheet that will face the inside of the fuselage when in place, cement a small strip of celluloid to simulate the window panes. The front window is also covered with celluloid. Now cement the two sides to the body and hold in place with pins till dry. Do not forget to leave an opening on one side near the tail hook to permit access to the motor. When the covering on the sides is dry, remove the pins, and cover the top and bottom with 2" sheet. This is also held pinned in place till dry, then it is trimmed and all four corners generously sanded till round. This provides a minimum of drag and makes for a very pleasing appearance. The hard balsa nose plug is now made. Make the plug tight fitting and finish sanding the plug while in the nose; this will give it a molded appearance as well as a good streamline effect. The tail block is also finished after being glued in place. Now finish down the body with 10 nought and apply two to three coats of banana oil.

## Propeller and Motor

The propeller is cut from a block of medium hard balsa, the dimensions being 1" x 1-1/2" x 9". For layout see plan. The motor power consists of 8 strands of 1/8" flat brown lubricated rubber. Allow about 4" slack.

## Assembly

The tail is cemented to the top of the tail block on which it will have an angle of incidence of -2 degrees. The wing is held in place by a single rubber loop. A 1/8" incidence block is put

under the leading edge, which comes up to the back edge of the "V" window.

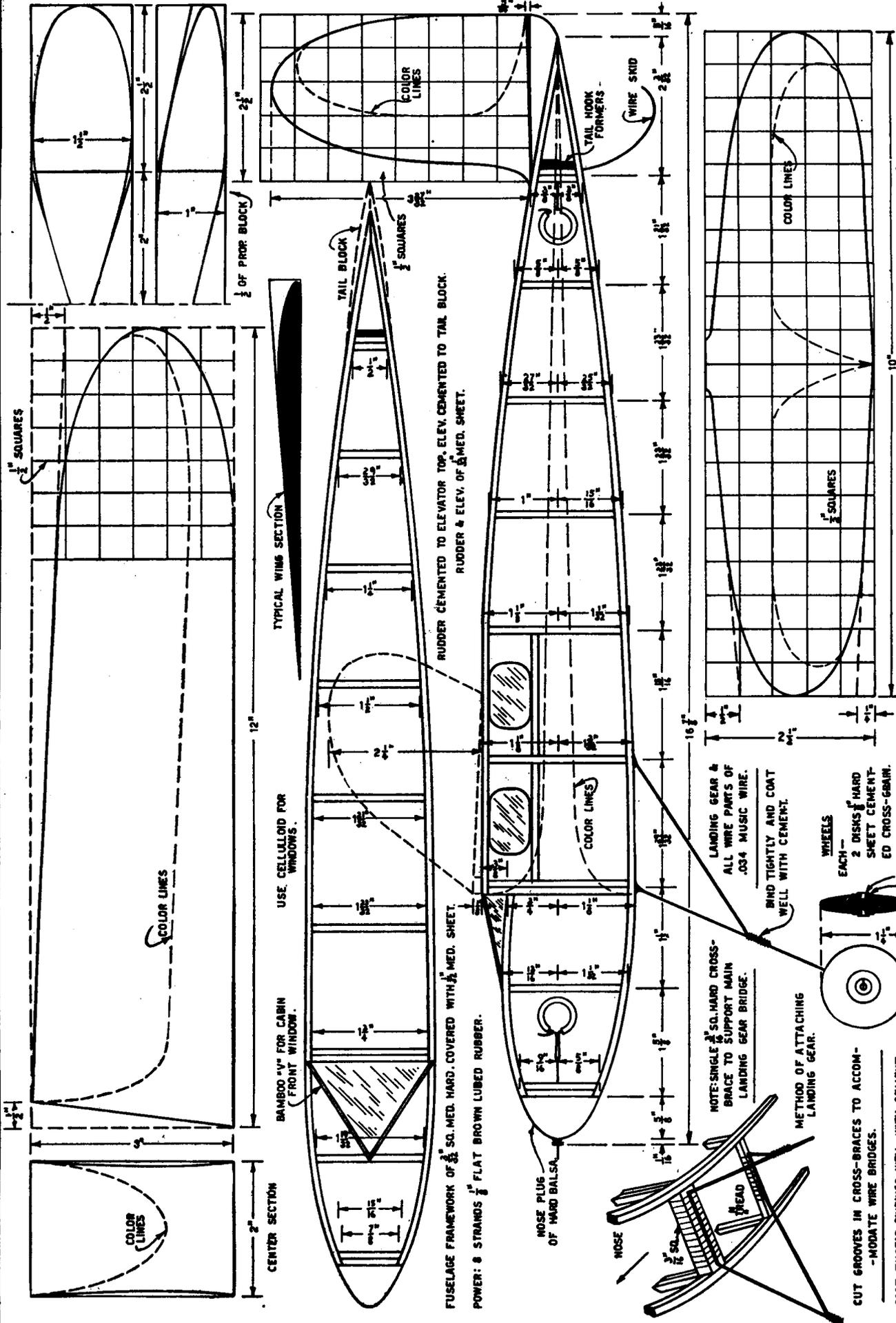
### **Flying**

The model should circle *WITH* the torque, that is, toward the launcher's left after release. Adjust the rudder till the right attitude is obtained.

If the model tends to nose down, increase the incidence in the wing, though it is doubtful whether this will occur. If it stalls, move the wing back or slightly decrease the incidence.

For a good flight "wind-in" 600 to 800 turns.

## ***Scanned From September, 1937 Model Airplane News***



1/4" SQUARES

COLOR LINES

COLOR LINES

1/2 OF PROP BLOCK

TYPICAL WING SECTION

USE CELLULOID FOR WINDOWS.

BAMBOO "V" FOR CABIN (FRONT WINDOW).

CENTER SECTION

TAIL BLOCK

1/2" SQUARES

COLOR LINES

RUDDER CEMENTED TO ELEVATOR TOP. ELEV. CEMENTED TO TAIL BLOCK. RUDDER & ELEV. OF 1/4 MED. SHEET.

FUSELAGE FRAMEWORK OF 1/8" SQ. MED. HARD. COVERED WITH 1/4 MED. SHEET.

POWER: 8 STRANDS 1/16" FLAT BROWN LUBED RUBBER.

NOSE PLUG OF HARD BALSAL

COLOR LINES

NOSE

1/4" SQ. 1/16" HEAD

NOTE: SINGLE 1/4" SQ. HARD CROSS-BRACE TO SUPPORT MAIN LANDING GEAR BRIDGE.

LANDING GEAR & ALL WIRE PARTS OF .034 MUSIC WIRE.

BIND TIGHTLY AND COAT WELL WITH CEMENT.

METHOD OF ATTACHING LANDING GEAR.

WHEELS

EACH - 2 DISKS 1/4" HARD SHEET CEMENT - ED CROSS-GRAIN.

RUBBINGS WASHERS

CUT GROOVES IN CROSS-BRACES TO ACCOMMODATE WIRE BRIDGES.

COAT THREAD BINDINGS WELL WITH CEMENT.

SCALE - 1" = 1'

# STREAMLINE EXPERIMENTAL

SUMMER 1936

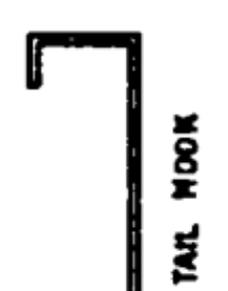
1/8" HOOK



RUBBER TUBING

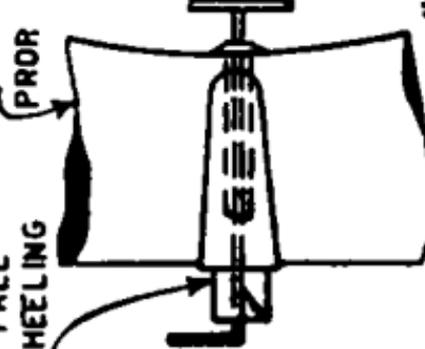


TAIL HOOK

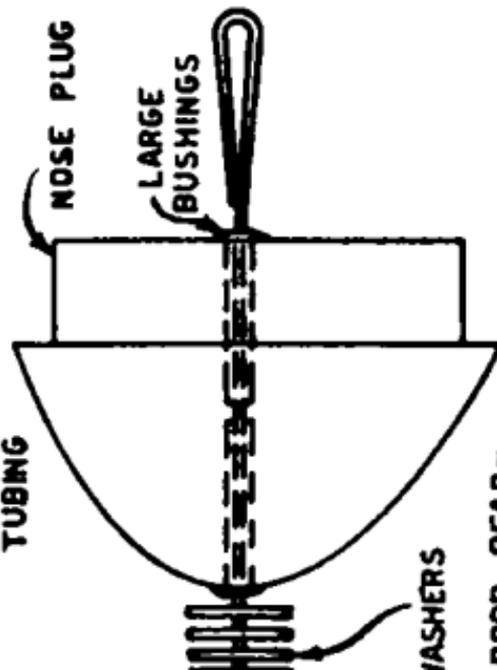


FREE WHEELING

PROPR



WASHERS



NOSE PLUG

LARGE BUSHINGS

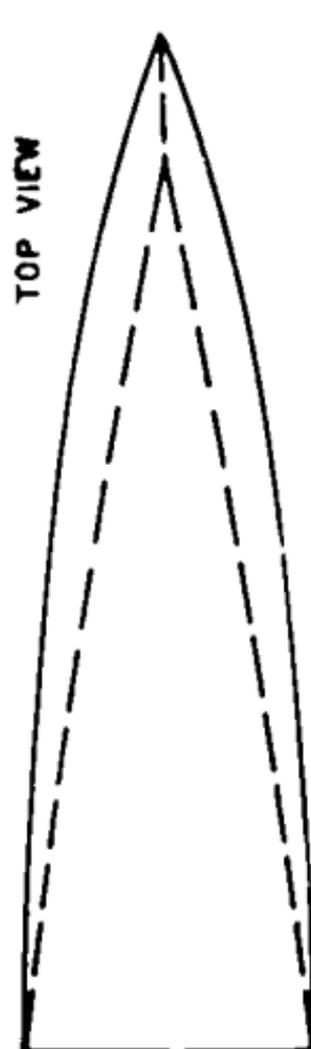
PROP. SHAFT & PROP. BEARING ASSEMBLY



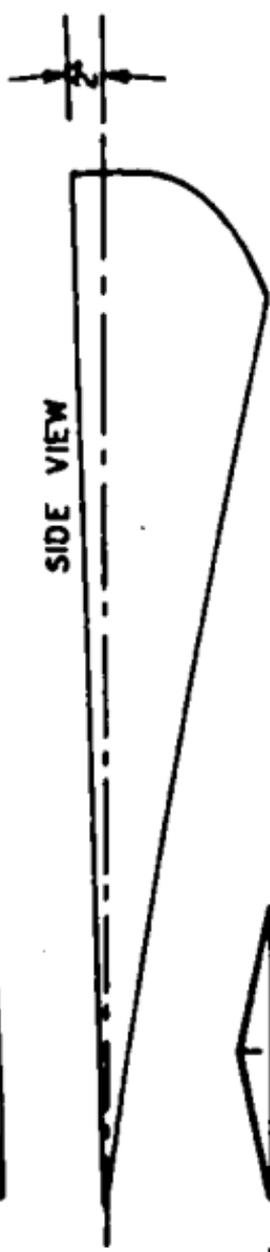
TAIL HOOK FORMER

- 3 R'Q'D - 1/32" HARD SHEET BALSA
- 2 WITH VERT. GRAIN.
- 1 " HORIZ.

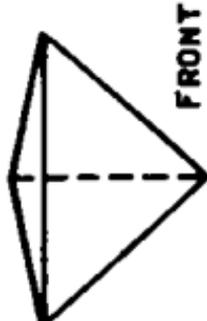
GLUE TOGETHER WITH GRAIN AT RIGHT ANGLES



TOP VIEW



SIDE VIEW



FRONT

TAIL BLOCK

BLITTMANN 936

ALL PARTS SHOWN - FULL SCALE