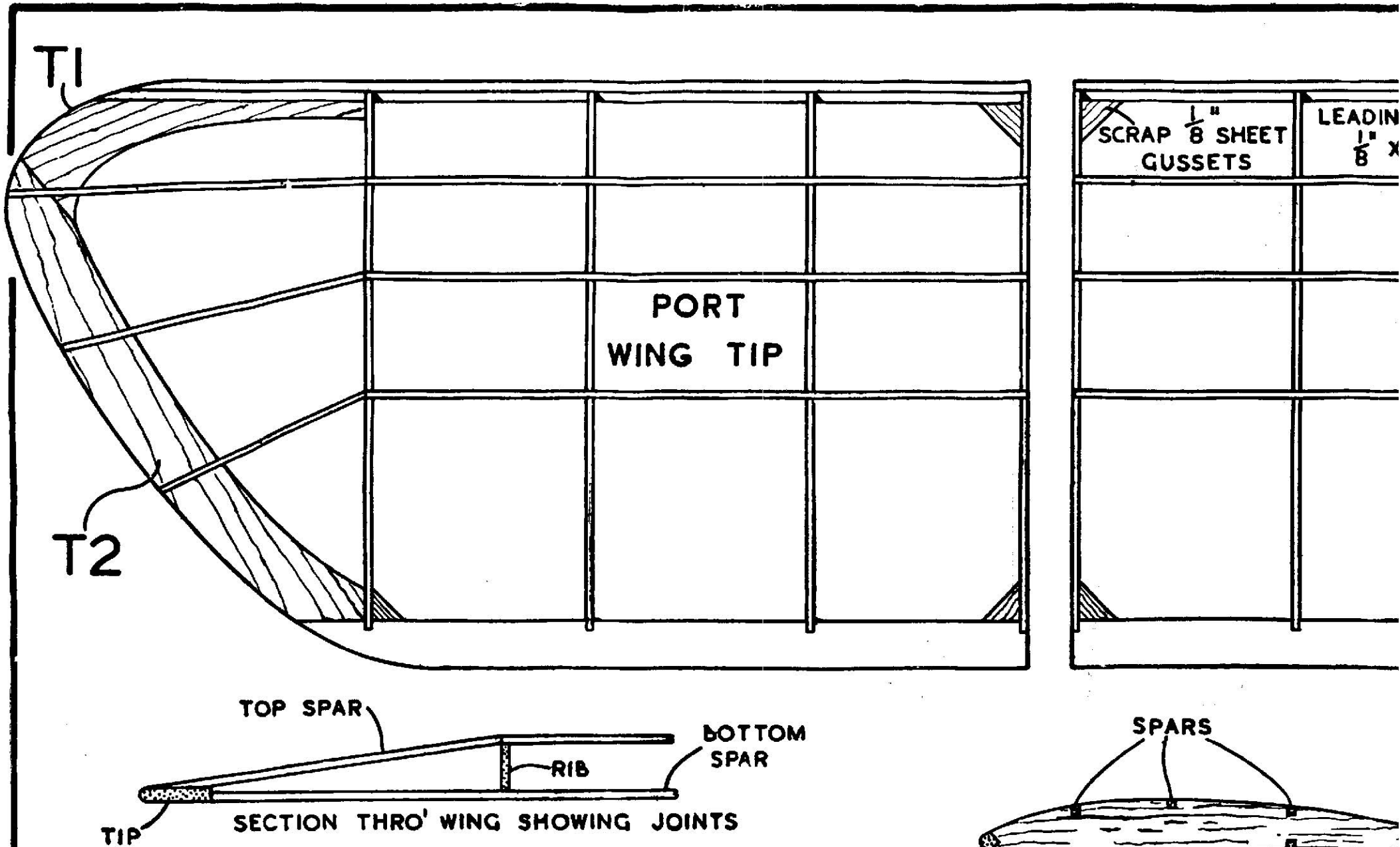
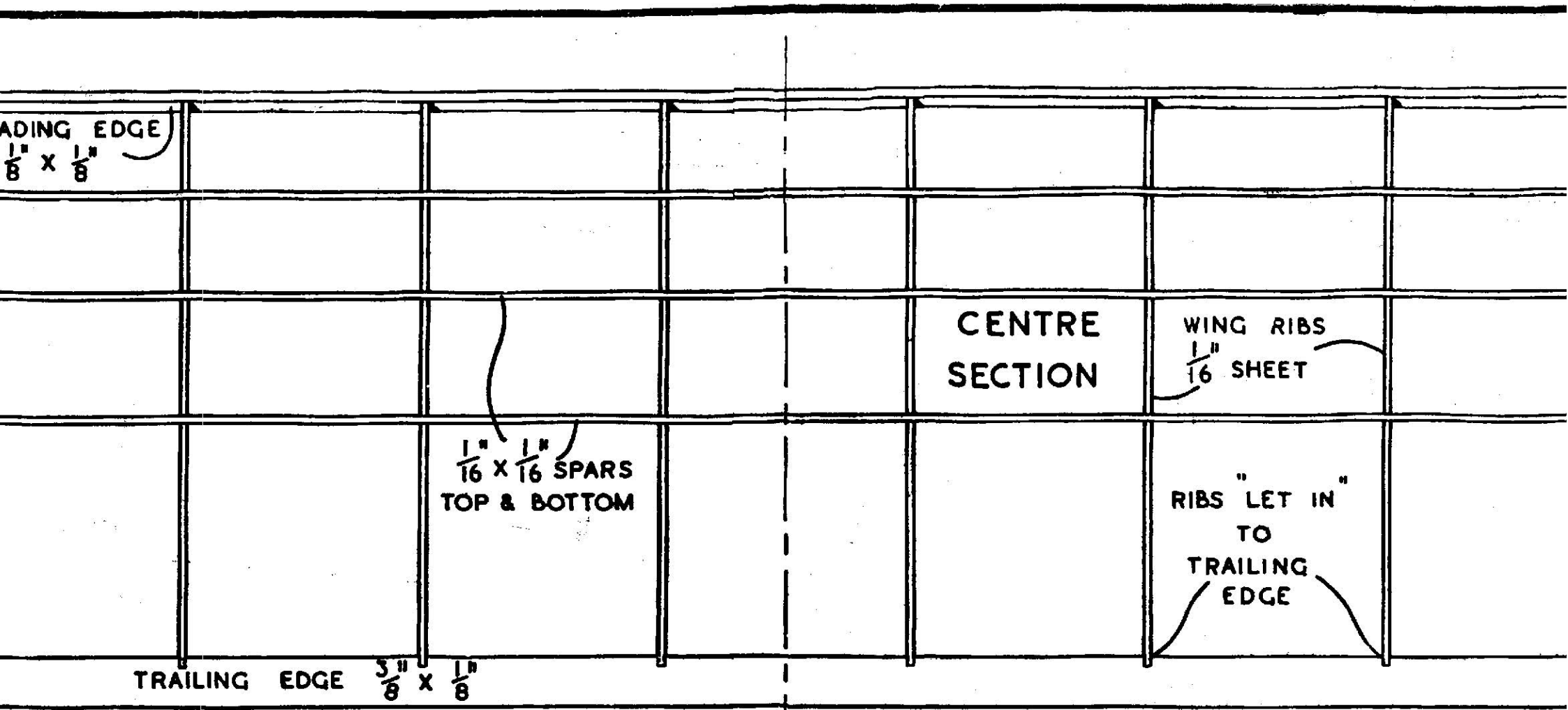
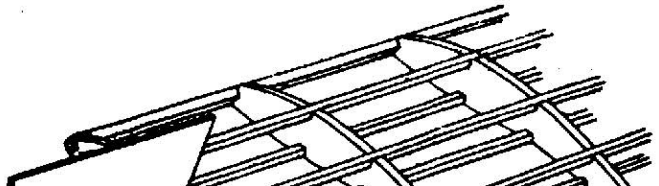
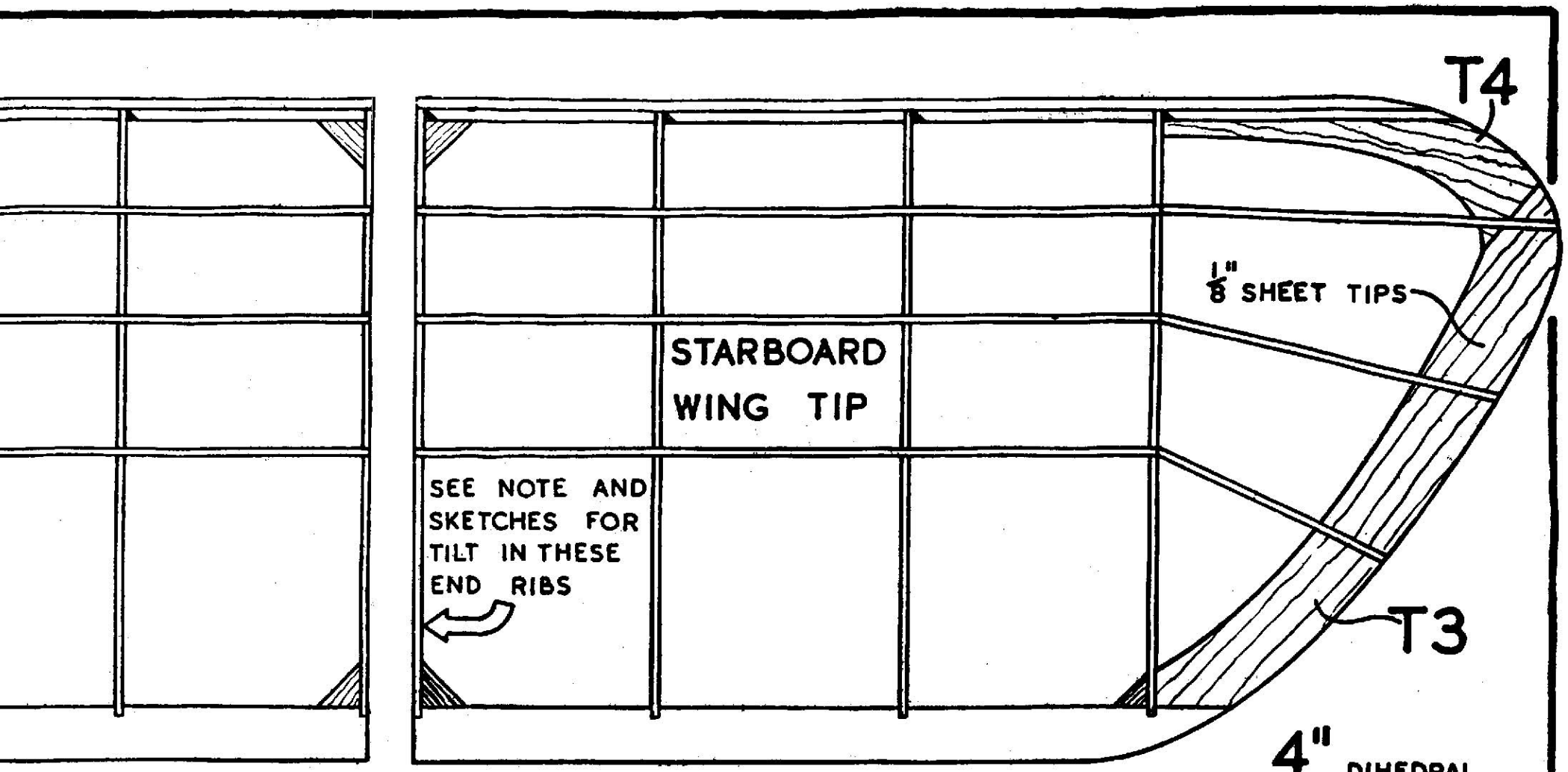
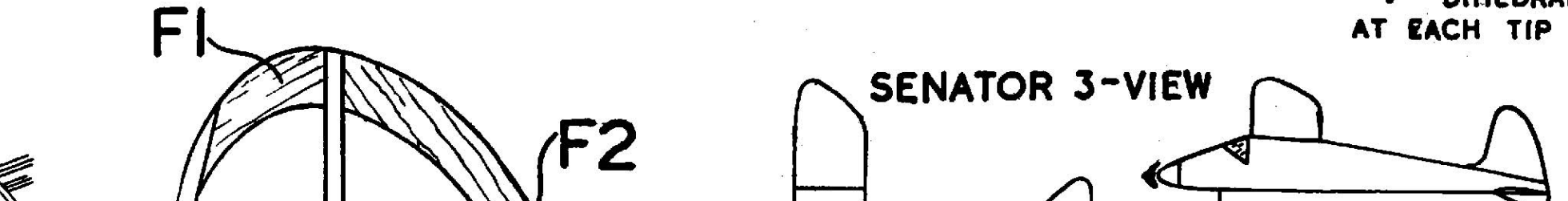

T1
T2
PORT
WING TIP
SCRAP 1/8" SHEET
GUSSETS
LEADIN
1" X
1/8
TOP SPAR
BOTTOM
SPAR
RIB
TIP
SECTION THRO' WING SHOWING JOINTS
SPARS



CUT THIS TEMPLATE




T4
1/8" SHEET TIPS
STARBOARD
WING TIP
SEE NOTE AND
SKETCHES FOR
TILT IN THESE
END RIBS
T3
4" DIHEDRAL
AT EACH TIP


F1
F2
SENATOR 3-VIEW

TIP

SECTION THRO' WING SHOWING JOINTS OF SPARS TO TIP

TYPICAL WING SECTION. SAND TRAILING EDGES TO SHAPES

FREEWHEEL LATCH. BEND FROM WIRE AND SECURE TO AIRSCREW WITH SMALL WOOD SCREW AS SHOWN.

"FILL IN" NOSE WITH $\frac{1}{8}$" SHEET

WING POSITION

SCREW

CUP WASHERS

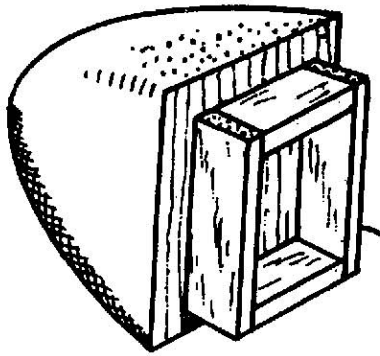
BIND U/C WIRE TO UPRIGHT ON RIGHT HAND SIDE WITH THREAD.

CELLULOID

FREEWHEEL

BRASS BUSH, CELLULOID TUBE, OR PLASTIC NOSE PLUG.

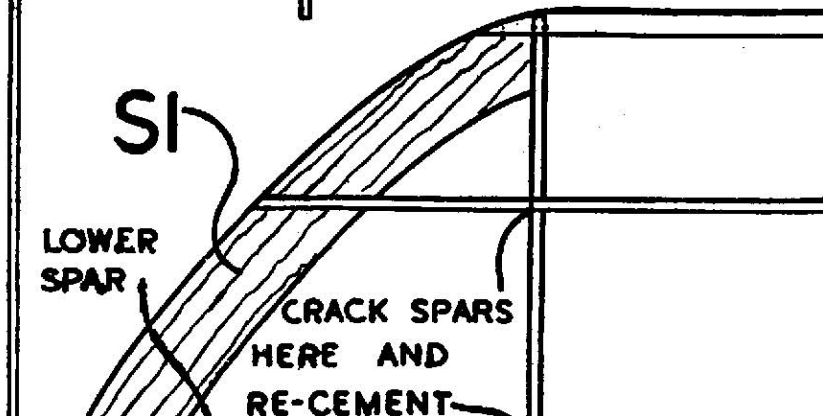
MOTOR HOOK 18 S.W.G. WIRE

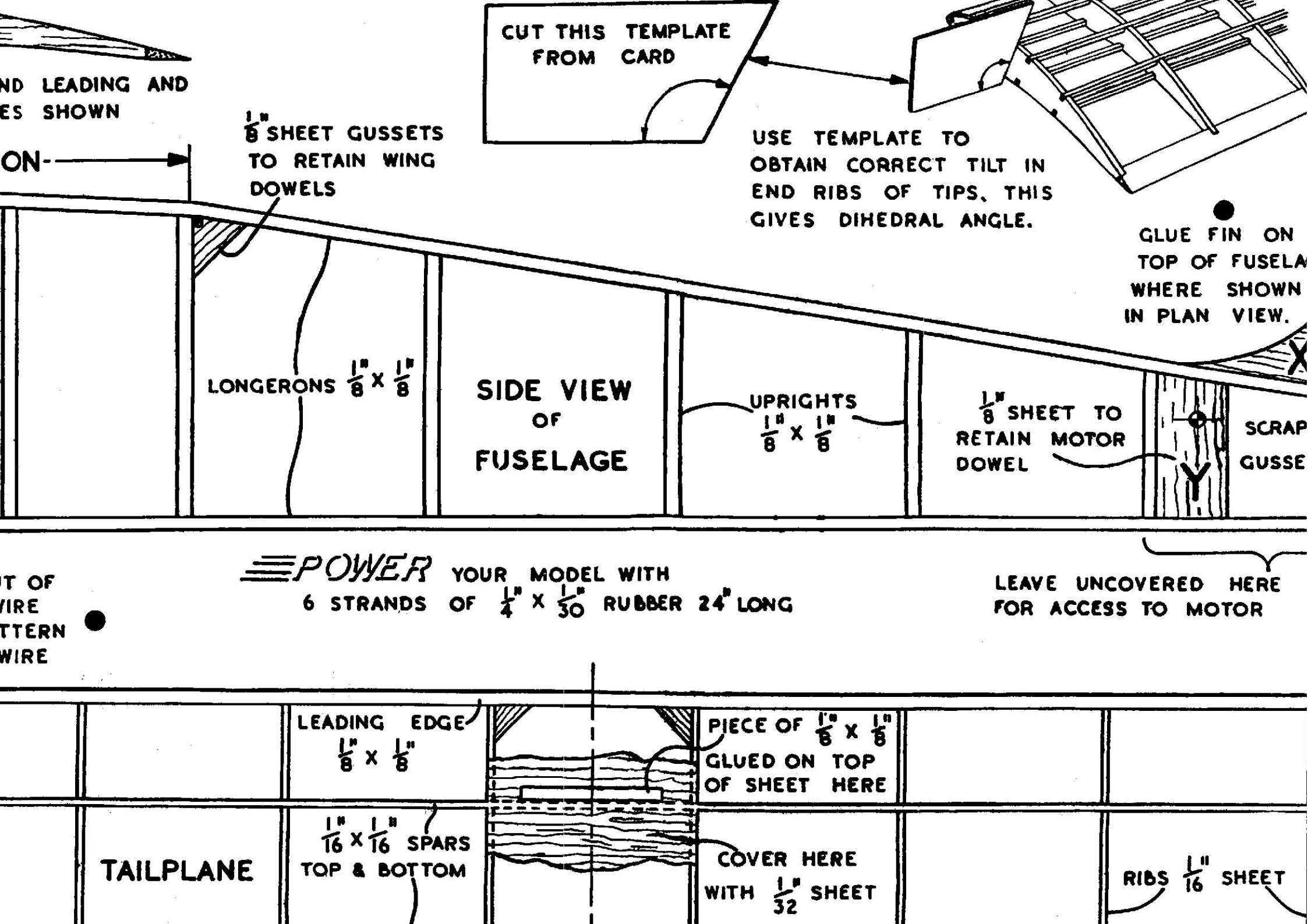


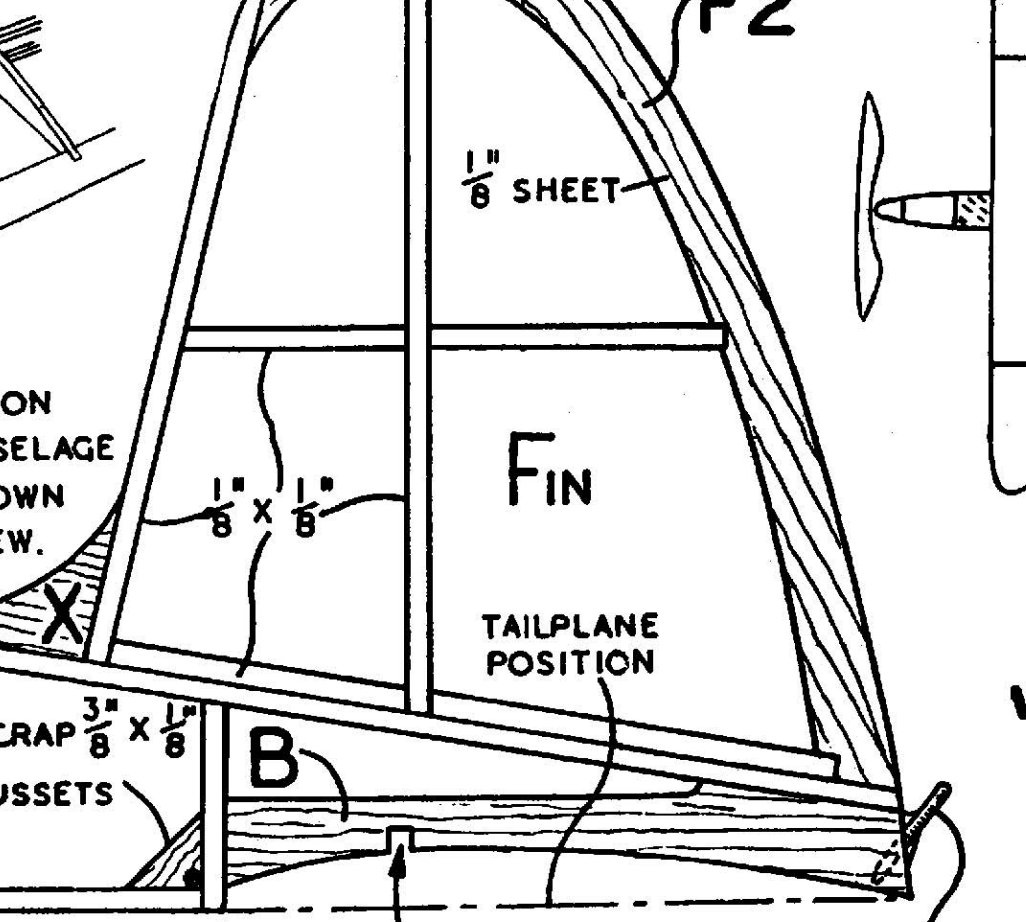
$\frac{3}{8}$" X $\frac{1}{8}$" PLUG

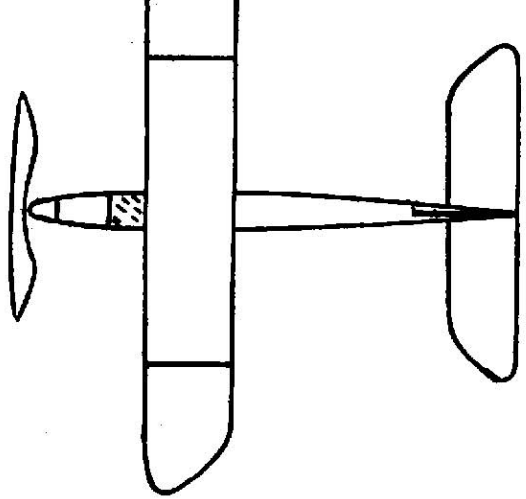
BUILD UP A PLUG ON THE BACK OF NOSE BLOCK TO FIT "CORK LIKE" IN THE NOSE.

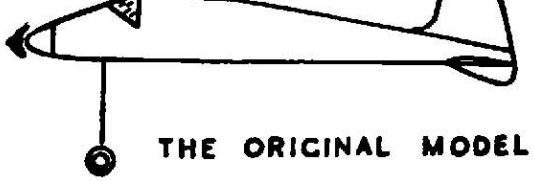
FULL SIZE LAYOUT O
UNDERCARRIAGE WIRE
BEND TO THIS PATTE
FROM 18 S.W.G. WIRE



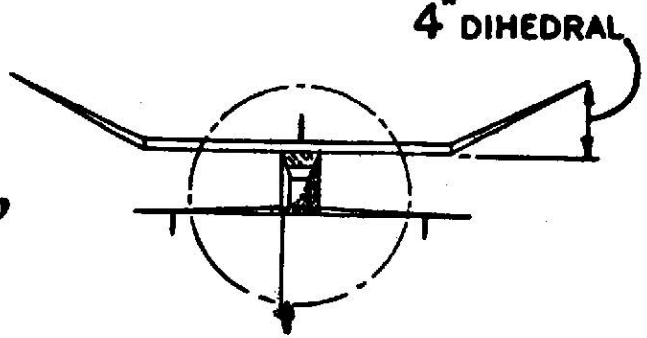

ND LEADING AND
ES SHOWN
ON-
CUT THIS TEMPLATE FROM CARD
USE TEMPLATE TO OBTAIN CORRECT TILT IN END RIBS OF TIPS. THIS GIVES DIHEDRAL ANGLE.
1/8" SHEET GUSSETS TO RETAIN WING DOWELS
GLUE FIN ON TOP OF FUSELA WHERE SHOWN IN PLAN VIEW.
LONGERONS 1/8" X 1/8"
SIDE VIEW OF FUSELAGE
UPRIGHTS 1/8" X 1/8"
1/8" SHEET TO RETAIN MOTOR DOWEL
SCRAP GUSSE
T OF
IRE
TTERN
WIRE
POWER YOUR MODEL WITH 6 STRANDS OF 1/4" X 1/30" RUBBER 24" LONG
LEAVE UNCOVERED HERE FOR ACCESS TO MOTOR
LEADING EDGE 1/8" X 1/8"
PIECE OF 1/8" X 1/8" GLUED ON TOP OF SHEET HERE
TAILPLANE
1/16" X 1/16" SPARS TOP & BOTTOM
COVER HERE WITH 1/32" SHEET
RIBS 1/16" SHEET







THE ORIGINAL MODEL
WEIGHED 3·7 *ozs.*



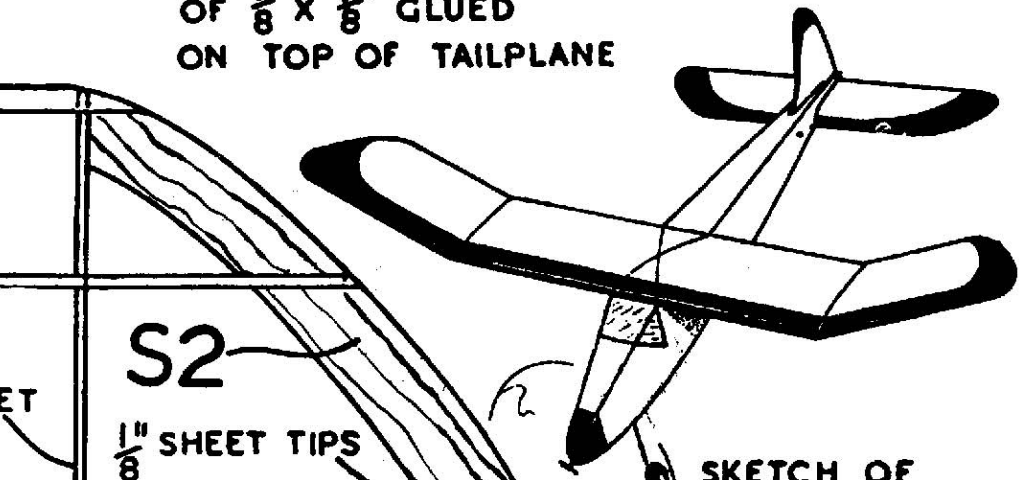
The

"Senator"

30" SPAN CABIN DURATION MODEL

— MANUFACTURED BY —

KEIL KRAFT KITS



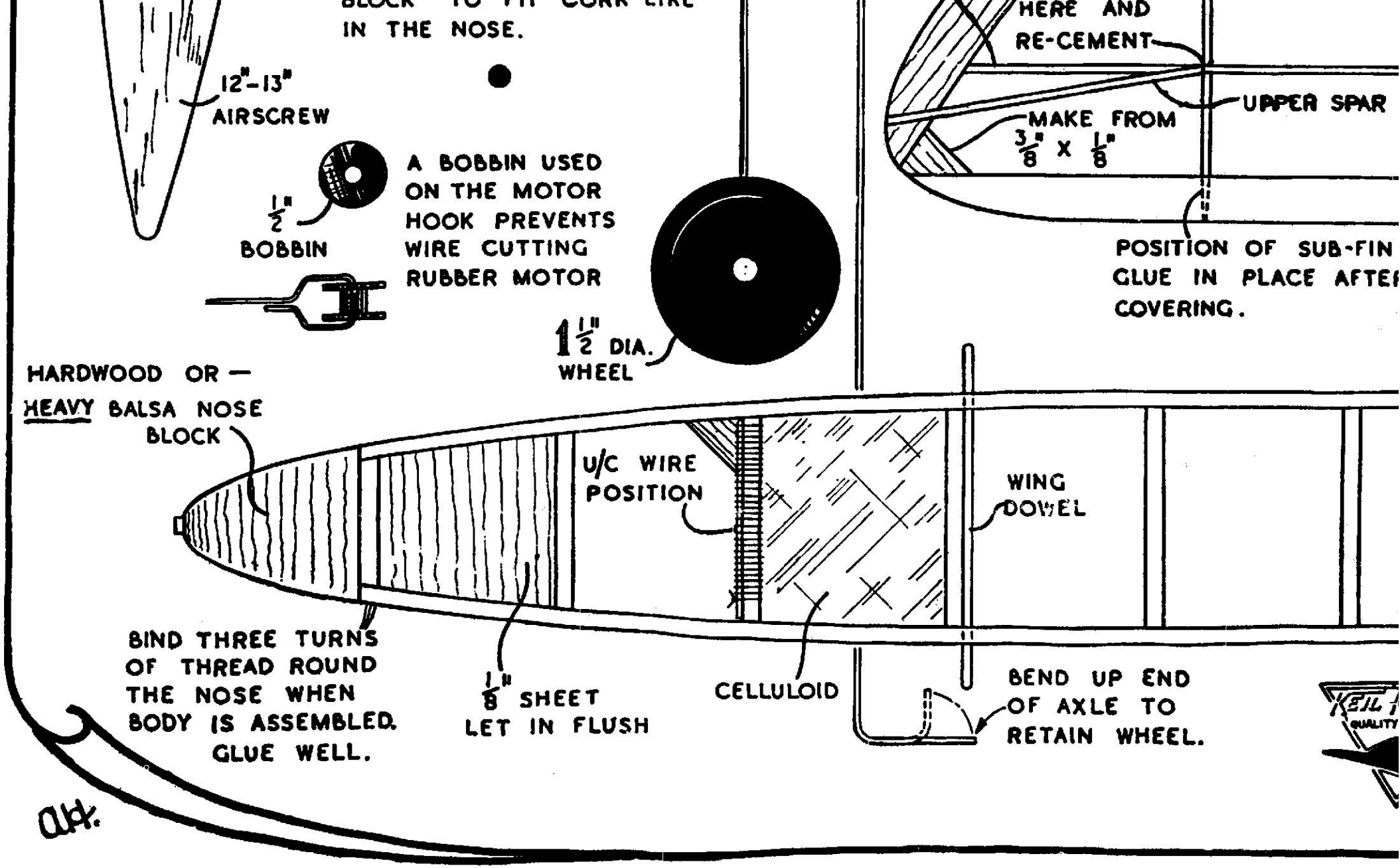
SKETCH OF

BUILDING INSTRUCTIONS

● FUSELAGE

Pin down the longerons for one fuselage side by placing pins on either side of the stripwood. Cut the uprights to correct lengths and glue these accurately in place over the positions indicated. Glue piece 'B' in place at the rear end, also piece 'Y' and piece of 1/8" sheeting at the nose. When this first side is dry build a second side directly over it. Remove both sides from plan when they have set and separate them very carefully with a thin knife. Hold the extreme rear ends together with a Bulldog paper clip and insert top and

trailing edge in similar manner, glue the ribs in their correct positions and pull the spars up into the notches. Cement leading edge into front notches provided in ribs, then add top three spars and the gussets where shown. The Tips are constructed by locating the three bottom spars in between pins as for the Centre Section, pin down the Trailing edge, position the ribs with pins apply glue to the lower rib notches and pull the spars up into these notches. SEE NOTE REGARDING TILT IN END RIBS as this governs the amount of dihedral at the extreme tips. Add the leading edge and tip pieces, join the spars to the tips as shown. The bottom spars


IN THE NOSE.
12"-13"
AIRSCREW
1/2"
BOBBIN
A BOBBIN USED ON THE MOTOR HOOK PREVENTS WIRE CUTTING RUBBER MOTOR
1 1/2" DIA. WHEEL
HERE AND
RE-CEMENT
UPPER SPAR
MAKE FROM
3/8" X 1/8"
POSITION OF SUB-FIN
GLUE IN PLACE AFTE
COVERING.
HARDWOOD OR —
HEAVY BALSA NOSE
BLOCK
U/C WIRE
POSITION
WING
DOWEL
BIND THREE TURNS
OF THREAD ROUND
THE NOSE WHEN
BODY IS ASSEMBLED.
GLUE WELL.
1/8" SHEET
LET IN FLUSH
CELLULOID
BEND UP END
OF AXLE TO
RETAIN WHEEL.

WITH $\frac{1}{32}$" SHEET

PAR

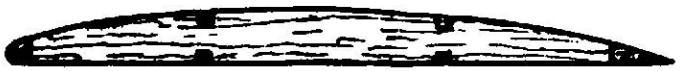
SCRAP $\frac{1}{8}$" SHEET GUSSETS.

$\frac{3}{8}$" X $\frac{1}{8}$" TRAILING EDGE

FIN
FTER

POSITION OF
SUB-FIN

TYPICAL TAILPLANE SECTION



$\frac{1}{8}$" DIA. DOWELS FOR RUBBER BANDS RETAINING WING

$\frac{1}{8}$" DIA., MOTOR DO

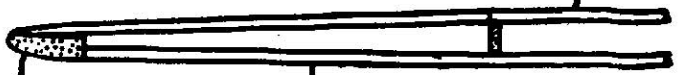
TOP VIEW OF FUSELAGE

CROSS BRACES

$\frac{1}{16}$" SHEET LET IN FLUSH WITH LONGERONS

$\frac{1}{8}$" DIA. DOWEL FOR RUBE
BANDS HOLDING TAIL

TOP SPAR

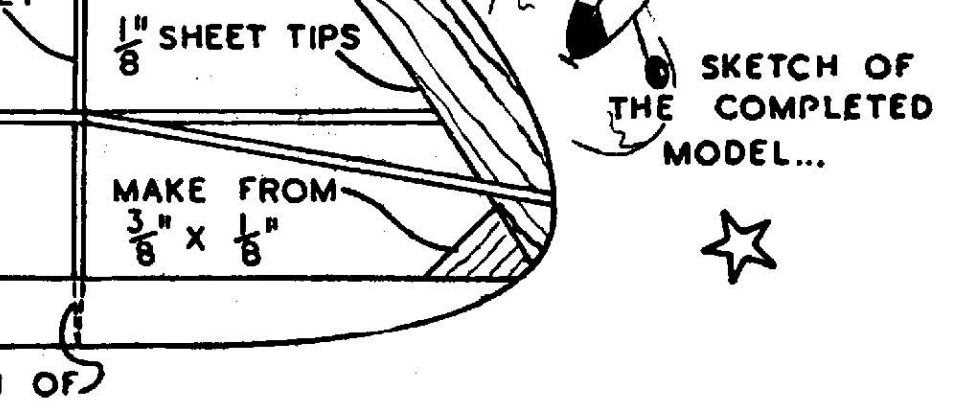


TIP

BOTTOM SPAR

SECTION THRO' TIP OF TAIL SHOWING SPAR JOINS TO TIP PIECE

DESIGNED
•
ALBERT

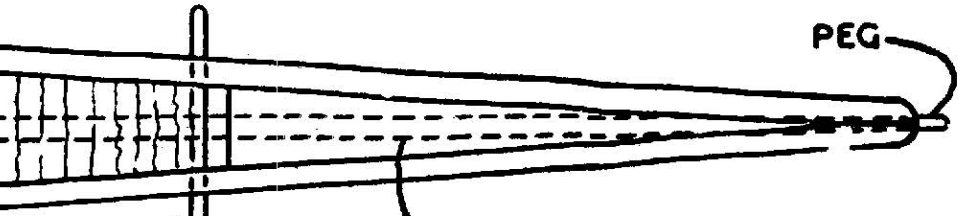


SKETCH OF THE COMPLETED MODEL...

OF

GLUE SUB-FINS WHERE SHOWN ON UNDERSIDE OF TAILPLANE.

DOWEL



RUBBER
TAIL.

FIN POSITION SHOWN DOTTED, GLUE FIN HERE SQUARELY & FIRMLY.

DRAWN
by
E. HATFULL

and separate them very carefully with a thin knife. Hold the extreme rear ends together with a Bulldog paper clip and insert top and bottom cross braces at the wing position, check for squareness and leave fuselage resting on the lower longerons until dry. Insert the cross braces at the extreme nose holding the sides in with a rubber band until set, then bind nose with thread and cement well. (see Top View) add the remaining cross braces top and bottom checking for squareness as you proceed. Glue 1/8" sheet flush in top and bottom of nose, glue 1/16" flush in the top at fin position. Bend U/c wire to shape, place wheel on axle and bend up the end of the wire to retain the wheel, bind wire in place where shown in Side View apply cement over thread for extra strength. Cut the sheet celluloid to shape and glue in place for the cabin. Add wing and tail fixing dowels and the gussets to strengthen them. Roughly carve nose block to shape, build plug on back face as noted, plug into nose and sandpaper to a smooth finish while on fuselage, remove and drill hole in position shown to receive propeller shaft bearing bush. Glue this bush firmly in place. Bend motor hook, thread nose block, cup washers and airscrew on the shaft and with pointed nose pliers bend the freewheel loop. Bend the freewheel latch to shape and attach to airscrew. Pin the outline of the fin to the plan, add pieces of 1/8" square, when dry sandpaper the rear edge to a taper and round off the leading edge. Glue the fin in place squarely on top of the fuselage where indicated, glue the fairing 'X' in place. Sandpaper the whole fuselage with fine sandpaper to obviate rough edges, etc

● WING

Commencing with the Centre Section, pin down the three bottom spars by placing pins on either side of the 1/16" stripwood, position the leading edge of the tail, If it stalls, i.e. noses up and wavers unsteadily, add a small amount of plasticine inside the nose block (or remove any previously placed in the tail). Continue test gliding until a long floating glide is obtained. Give the motor 100 to 200 turns preferably "stretch" wound, place a strip of 1/16" down the left hand side of the nose block, then launch. The strip of 1/16" packing is to induce side thrust and should impart a right handed circling climb to the model. A small celluloid "trim tab" 1½" x ½" glued down the trailing edge of the fin may be used to obtain a tighter turn under power followed by a larger gliding circle.

governs the amount of dihedral at the extreme tips. Add the leading edge and tip pieces, join the spars to the tips as shown. The bottom spars terminate inside the tip pieces, the top spars are carried over the tip as can be seen in the sectional view through tip. When the three wing sections have set glue the tips to the centre section and leave to dry with the tips propped up 4". Finally sand paper the leading and trailing edges to shapes shown and finish smooth all over.

● TAILPLANE

Build the tailplane in similar fashion to the wing, cover the centre portion with 1/32" sheet, and glue a piece of 1/8" square exactly where indicated on the top surface. The sub-fins are added after covering with tissue. Round off the leading edge and tips, taper the trailing edge down and fine sandpaper all over.

● COVERING

When covering the model use tissue paste or tissue cement for an adhesive. Cover the fuselage sides then top and bottom applying paste to the actual outline only. The wing is covered in six pieces, three above and three below. It is important that the tissue should be made to adhere to the lower spars of the wing also to the under side curve of the ribs which is known as the " undercamber." Use two pieces of tissue for the top of the tailplane and one for the underside. While covering any part of the model endeavour to eliminate as many wrinkles as possible. When all the parts are covered spray lightly with water and allow to dry. this tightens the covering prior to the application of dope. Apply two coats of dope to the fuselage, two thin coats to the wing and one coat to the fin and tailplane.

FLYING INSTRUCTIONS

Assemble the model and insert the specified rubber motor in to the fuselage. Choose a comparatively calm day for test flights and select a field with fairly long grass. Your particular model may need balancing and this is executed by adding ordinary plasticine to the inside of the nose block or inside the extreme rear end of the fuselage i.e. directly over the tail position. The model should be made to balance level when held on the fingertips at the third spar back from the leading edge. Now glide the model into the wind, launch it firmly and parallel to the ground. If it dives or noses down place a thin 1/32" to 1/16" strip of balsa under the