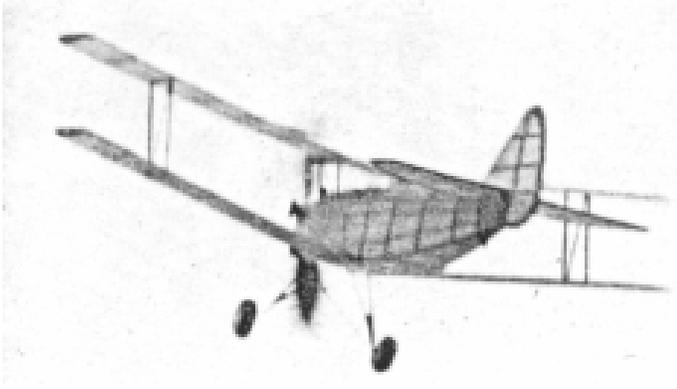


# TRAIN BY FLYING THE FLEET TRAINER



Flight and appearance rivals its full scale prototype

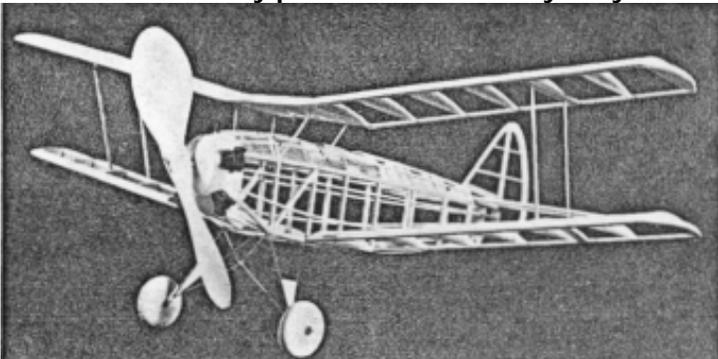
A stable easily constructed scale biplane that flies consistently

by **SYDNEY STRUHL**



A large propeller flies this biplane like a monoplane

Few but bulky parts make assembly easy



WITH Britain rapidly gaining air supremacy over Hitler's Luftwaffe there is an ever increasing demand for British young men to pilot the famed Spitfires and other deadly English designs. But before any man can fight for democracy in a fast pursuit ship he must be moulded into fine pilot material by an intensive training program.

Perhaps some of you have been wondering just what the British are using for this primary flight training.

Well, the most popular of all British primary trainers in England and Canada is the new redesigned Fleet Trainer, our flying scale feature this month.

The fondness shown by pilots for the Fleet Primary Trainer is well deserved, for this ship is a "Dodo's" dream. It has built-in stability; whenever the Dodo gets into trouble "up there" all he has to do is let the controls free and the ship rights itself in short order.

The Fleet Trainer is ideally suited for mass production, being reasonable in price. Construction is welded steel tubing, fabric covered, with wings of laminated spruce spars and aluminum alloy ribs. Power is supplied from a 160 hp. Kinner engine: maximum speed 160 m.p.h. - cruising speed 110 m.p.h. - service ceiling 16,500 feet - cruising range 320 miles. Landing speed is only 45 m.p.h.

The Fleet Trainer as a flying scale model is the answer to a model builder's dream. Many modelers are looking for a biplane to build because there is something about a biplane that provokes dreams of flying your own ship with your head in the slip-stream, zooming for the clouds, and-oh, well. This little biplane makes a dandy flier and its stability will amaze you. Climb is steady and long; flights of over a minute, common.

Construction is as simple as can be found in any flying scale model and. although it is very strong the original model weighed only 1-1/4 oz.! Here's the proof!

**FUSELAGE:** It will be necessary before starting construction to line up the magazine pages so you have a complete drawing of each member to be constructed. The fuselage is built as usual by building two sides and then connecting them with cross members.

Make the two sides at one time, building one directly on top of the other. All stock used is 1/8" square balsa strips. After the cement has set remove the two sides from the drawing and connect with cross pieces as shown in the top view of the fuselage plans. Now cut all fuselage bulkheads from 1/16" sheet and cement them in place. Add stringers of 1/16" square balsa as shown in the plans. Note that there are two stringers on each side of the fuselage, these are cemented directly on the uprights. Fill in the rear hook station with 1/8" sheet to act as a base from the rear hook. Bend the rear hook and extend a piece of the wire below the fuselage and form the tail skid.

Carve the nose block from very soft balsa and hollow it to thickness shown by the broken lines in the drawing. Make the nose plug as shown and add a square to the back so it will fit into the nose block.

Five cylinders are required. The author cut his cylinders from a celluloid motor purchased from a local supply house. If these celluloid cylinders are not obtainable they will have to be made from scrap balsa and string.

Bend the landing gear to required shape from .038 music wire. Bind the landing gear near to the bottom fuselage cross members with sewing thread. The wheels are cut from 1/4" sheet balsa and are 1-1/2" in diameter. Cement a large copper washer on each side of the wheels to act as a bushing. Black dope is used to simulate the tires. Slip the wheels on the axles and put a drop of cement at the end to keep them in place.

Make the cockpit from one piece of 1/16" sheet balsa, wet in hot water, then bend and cement in place.

Cover the fuselage in the usual manner, it is advisable to use Silkspan for this purpose. Use one piece of covering material for each fuselage side. Color scheme is, of course, optional but we covered our model with orange paper, for details silver and black. Leave a section of the fuselage bottom uncovered to allow for installing new rubber motors. Spray the covering with water, dry and then brush on one thin coat of clear dope. Add the celluloid windshields and the fuselage is complete.

**WINGS:** Plans show only the right pinions so it is necessary to draw the other half of the wing plan.

Cut all the wing ribs as described in the plans. Note that the two innermost ribs on the lower wing are cut from 1/8" sheet balsa for extra strength. Build the wings directly on the plans for easy construction.

Pin the stock in its proper location on the plans and cement the ribs, then the 1/16" x 1/8" spar. After the cement has set add the 1-3/4" dihedral in the top wing. The wing tips are cut from 1/8" soft sheet balsa; trim to shape.

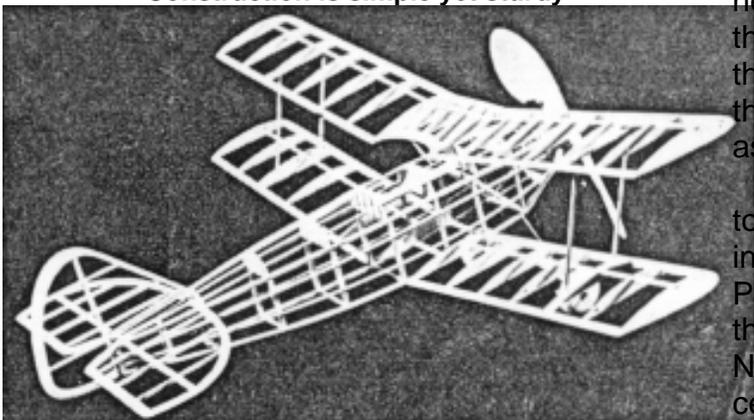
Cover the wings in the usual manner. It is necessary to apply dope only to the extremities of the surfaces, since the bottom camber is flat there is no need to apply dope to the ribs. Treat the wing covering similarly with water and dope as with the fuselage.

Make the wing struts from bamboo strips to plan size. Insert the ends of the center section into the fuselage longerons in the position shown. Push the other ends into the center section ribs at the proper angle. Cement these joints securely. Now add struts to the upper wings and allow cement to harden. Scrape the paper covering



Realistic, with sufficient dihedral for stability.

Construction is simple yet sturdy



from the bottom fuselage longeron where the lower wing meets it. Cement the lower wing to the fuselage longeron and insert the wing struts into the wing ribs making sure there is 1-3/4" wing dihedral.

**TAIL SURFACES:** Tail surfaces are simple to construct, made directly on the plans. The stabilizer is fashioned in one piece for strength.

All stock is cut from 1/8" light balsa. Pin the members on the plans and then cement ribs in place. Sandpaper the leading and trailing edges to a streamline cross-section.

Cover the stabilizer with Silkspan and treat the covering with water and one coat of clear dope. Thin strips of blacked, doped to the surfaces, are used to show the control surfaces.

Cement the stabilizer and rudder in place making sure they line up perfectly with the thrust line.

**PROPELLER:** To get best flight performance from your model it should be equipped with an efficient propeller. A medium hard balsa block 1" x 1-1/2" x 8" is required. Shape the blank as shown in the plans and then carve a right-hand propeller. Cut the back face of the blades first with about 1/16" undercamber. Sandpaper until the undercamber is completely finished. The uppercamber is cut away with care as the thickness becomes critical. Now trim the

blades to an elliptical shape as seen in the photographs; then balance.

Bend the prop shaft from .038 music wire and slip it through the nose plug and through several washers and finally through the prop hub. If a winder or free-wheeling device is used, bend a loop in the end of the shaft; otherwise bend the end of the shaft at right angles and force it into the hub.

If reasonable care has been taken in the construction of the Fleet Trainer you may use as little as six strands of 1/8" flat brown rubber; otherwise eight strands will be needed. Your model is now ready for initial flight.

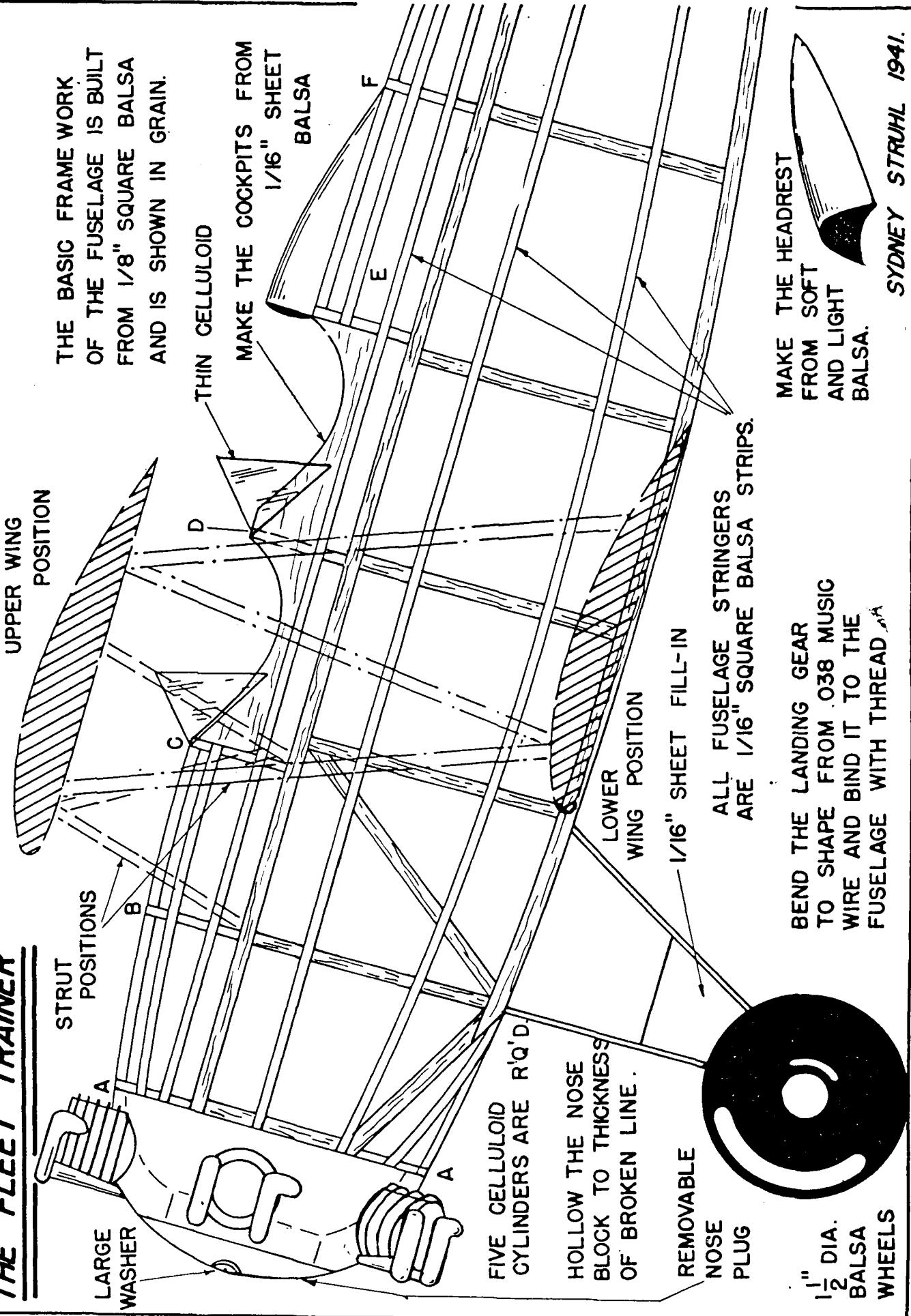
**FLYING:** Test the model over deep grass but if none is available make the first test flights R.O.G. with but a few hand turns. In all probability your ship will be a little tail heavy. If so, add a small weight to the nose block. Once the balance is obtained gradually - increase the number of turns, feeling out your ship's characteristics. Offsetting the thrust line to the right or left will aid in controlling the degree of circle in either direction. For maximum flight performance stretch the rubber motor and wind with a mechanical winder.

The Fleet Trainer is a fine little biplane addition for your collection and if the plans are followed with reasonable care it will provide many hours of flying thrills.

## VICTORY

***Scanned from March 1942  
Model Airplane News***

# THE FLEET TRAINER



THE BASIC FRAME WORK OF THE FUSELAGE IS BUILT FROM 1/8" SQUARE BALSA AND IS SHOWN IN GRAIN.

THIN CELLULOID

MAKE THE COCKPITS FROM 1/16" SHEET BALSA

ALL FUSELAGE STRINGERS ARE 1/16" SQUARE BALSA STRIPS.

MAKE THE HEADREST FROM SOFT AND LIGHT BALSA.

BEND THE LANDING GEAR TO SHAPE FROM .038 MUSIC WIRE AND BIND IT TO THE FUSELAGE WITH THREAD

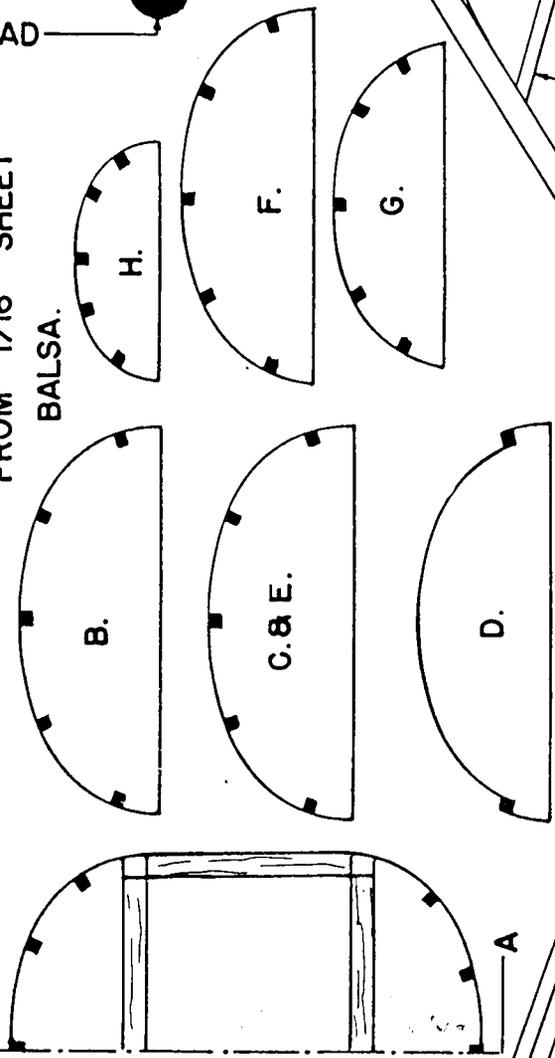
FIVE CELLULOID CYLINDERS ARE R'Q'D. HOLLOW THE NOSE BLOCK TO THICKNESS OF BROKEN LINE.

REMOVABLE NOSE PLUG

1 1/2" DIA. BALSA WHEELS

FUSELAGE BULKHEADS:

CUT ALL THE BULKHEADS FROM 1/16" SHEET BALSA.



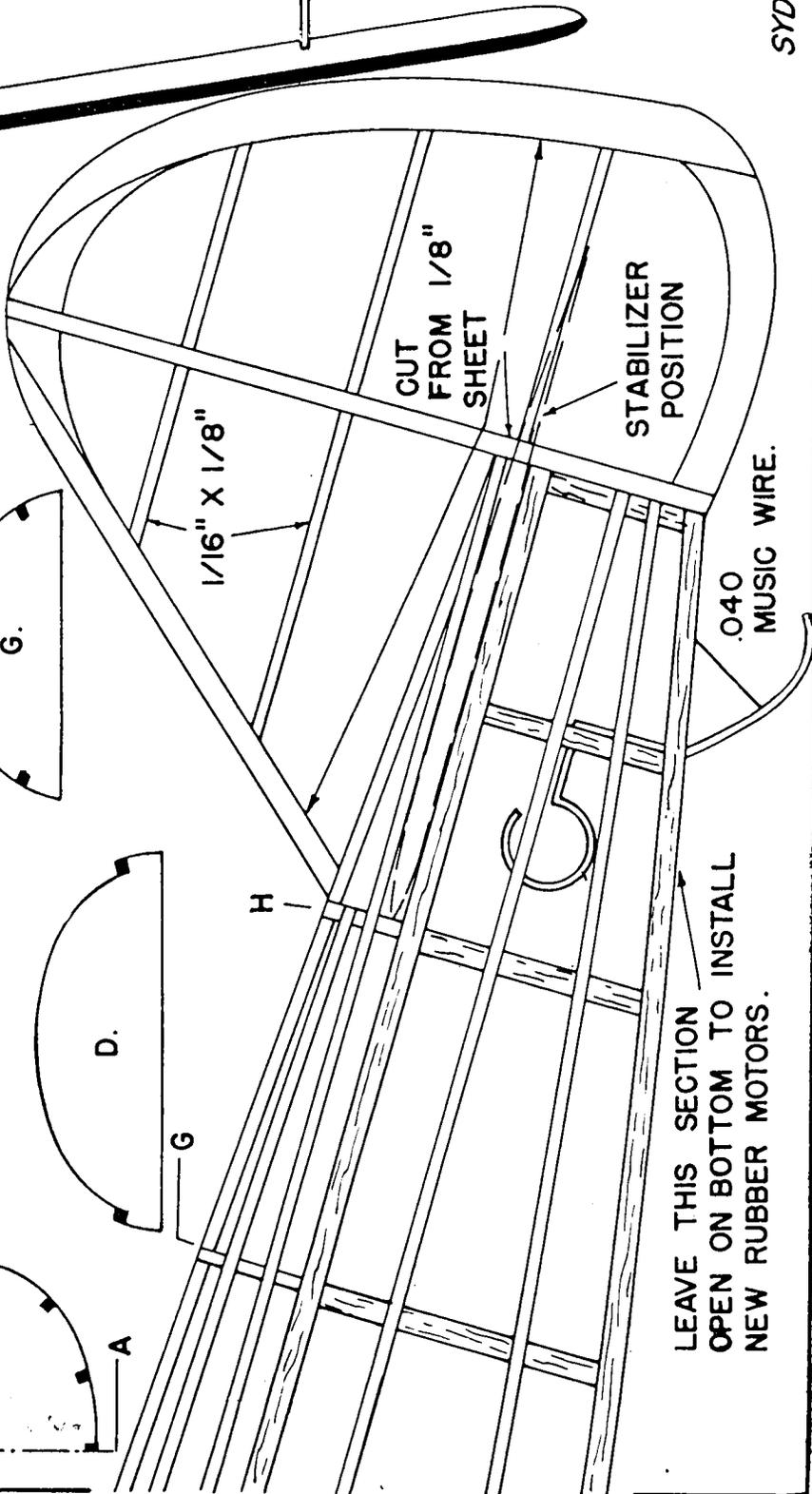
5" TREAD

BALSA.



FRONT VIEW  
1/2 SCALE

4 1/2" DIHEDRAL IN BOTH WINGS.



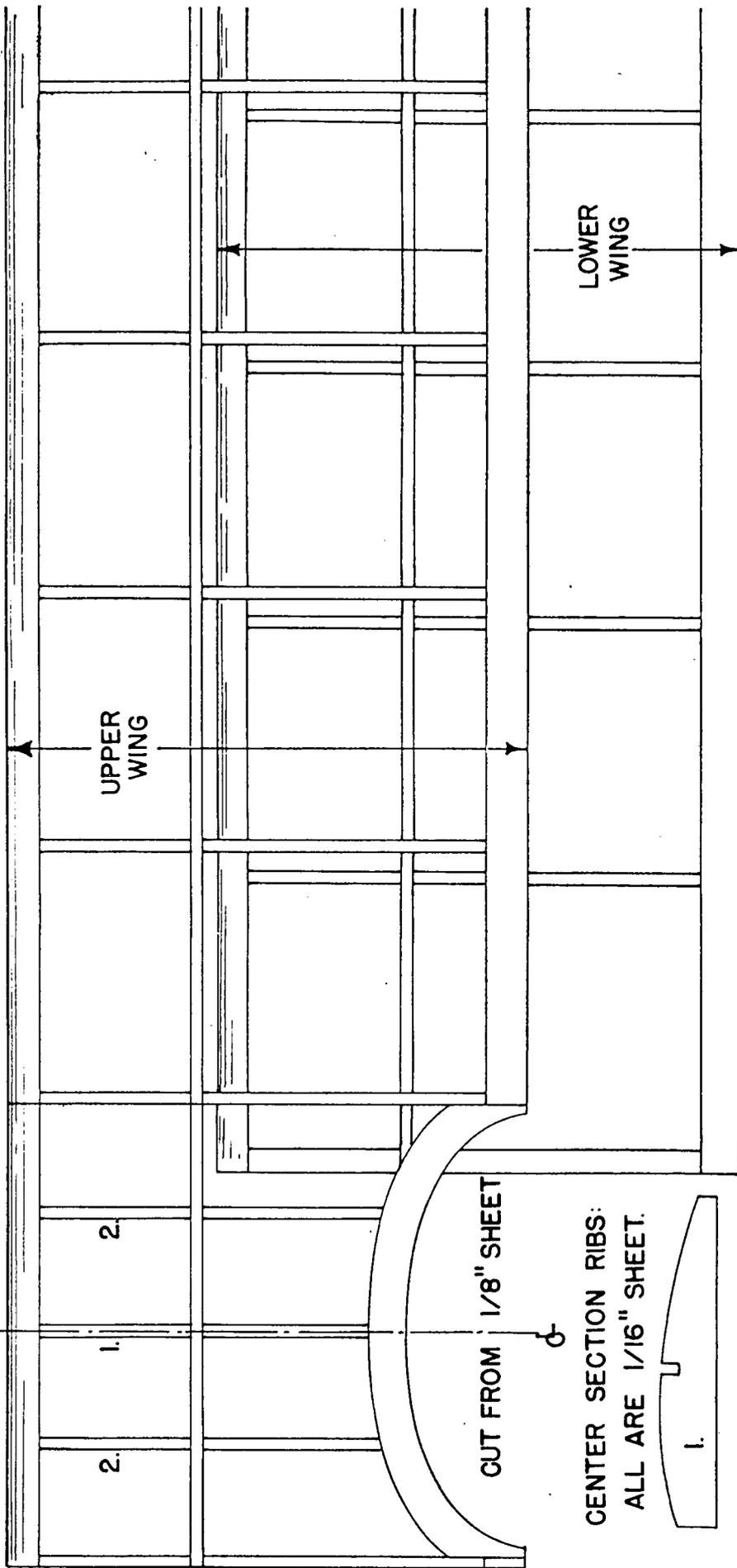
CUT FROM 1/8" SHEET

STABILIZER POSITION

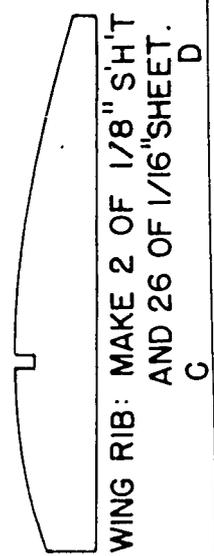
1/16" X 1/8"

.040 MUSIC WIRE.

LEAVE THIS SECTION OPEN ON BOTTOM TO INSTALL NEW RUBBER MOTORS.

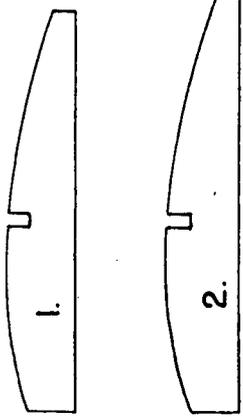


THE LEADING EDGE OF THE WING IS 1/4" SQUARE Balsa. TRAILING EDGE IS 1/8" X 1/4" Balsa. SPAR IS 1/16" X 1/8" Balsa



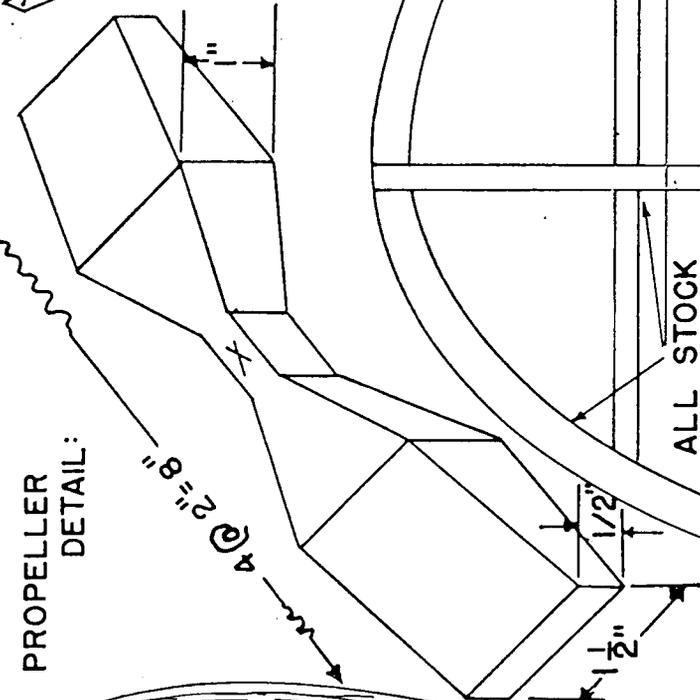
WING RIB: MAKE 2 OF 1/8" SH'T AND 26 OF 1/16" SHEET.

CENTER SECTION RIBS: ALL ARE 1/16" SHEET.

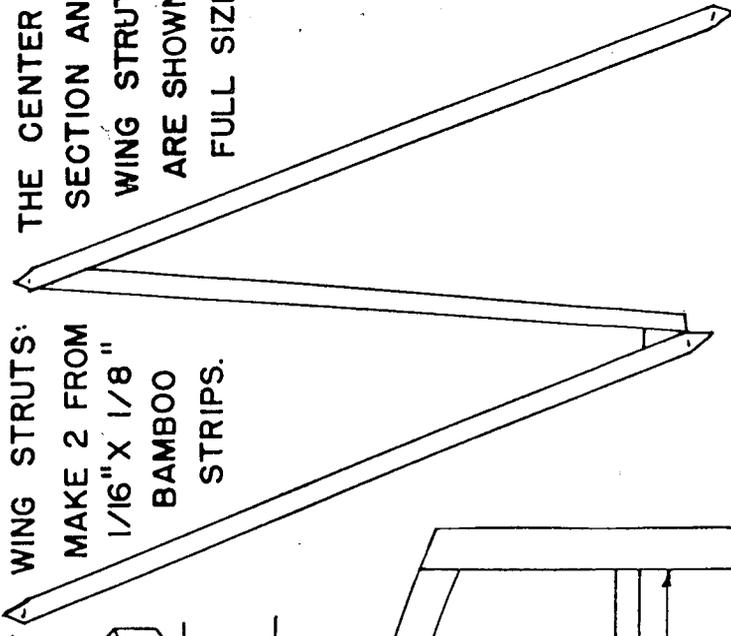


PROPELLER  
DETAIL:

4 @ 2 1/8"



WING STRUTS:  
MAKE 2 FROM  
1/16" X 1/8"  
BAMBOO  
STRIPS.

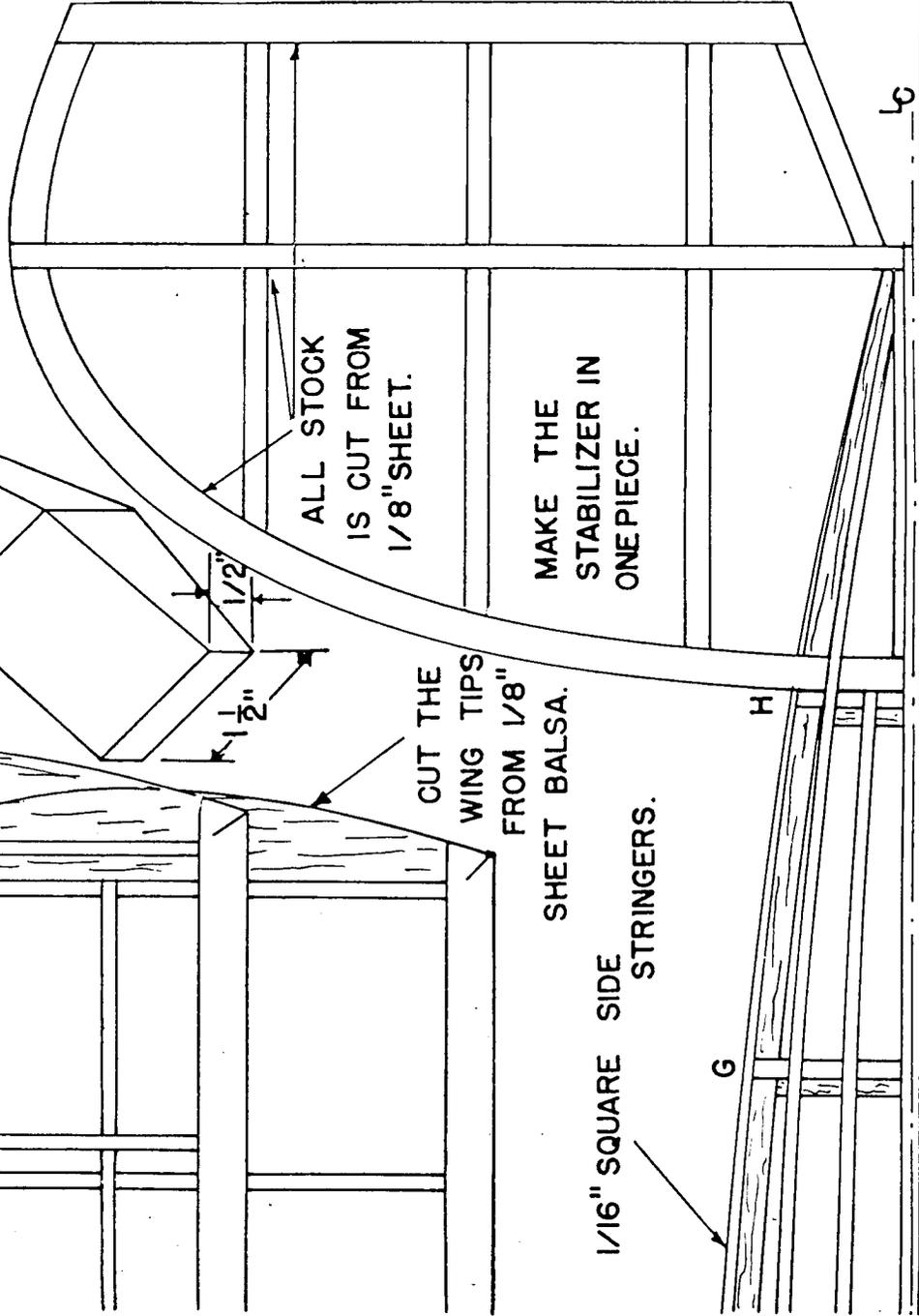


THE CENTER  
SECTION AND  
WING STRUTS  
ARE SHOWN  
FULL SIZE.

CUT THE  
WING TIPS  
FROM 1/8"  
SHEET Balsa.

MAKE THE  
STABILIZER IN  
ONE PIECE.

ALL STOCK  
IS CUT FROM  
1/8" SHEET.



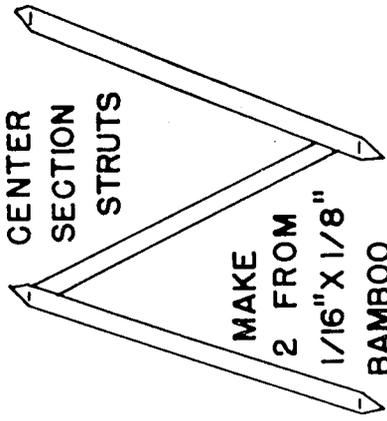
1/16" SQUARE SIDE  
STRINGERS.

G

H

6

CENTER  
SECTION  
STRUTS



MAKE  
2 FROM  
1/16" X 1/8"  
BAMBOO  
STRIPS.