

READ AND UNDERSTAND ASSEMBLY PROCEDURE BEFORE BEGINNING WORK:

WHITE GLUE 3/8" x 1/2" ENGINE BEARERS CLAMP OR HOLD WITH RUBBER BANDS

IMPORTANT: TRIM TO THIS SHAPE.

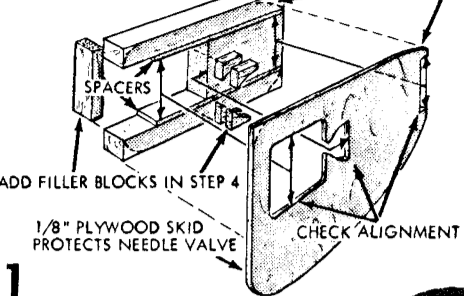


TABLE "A"

ENGINE SIZE (DIMENSION "A")	SPACERS TO USE
15/16"	NONE
1-1/16"	2-S2
1-1/8"	2-S1

CAUTION: FOR NEEDLE VALVE ON TOP SEE ASSEMBLY PROCEDURE - STEP 1.

CAUTION:
Do not fly control line models in the vicinity of electric power lines!

USE .012 DIA. LINES 52-1/2 FT. LONG

1/8" TIP

1/8" GUSSET

NOTE: INBOARD WING IS 3/4" LONGER THAN OUTBOARD

SCALE: 2/3 FULL SIZE
ADD 50% TO ANY DIMENSION TO GET FULL SIZE



JR. SATAN
29" COMBAT-STUNT FOR .15 TO .19 ENGINES KIT G20
SPAN 29"
LENGTH 16-1/2"
WEIGHT 11 TO 13 OZ.
Designed and drawn by:
Carl Goldberg, Ron Paulowski
Paul Kraus, J.C. McVicker
ORIGINAL MODEL BUILT BY — RICH FROST

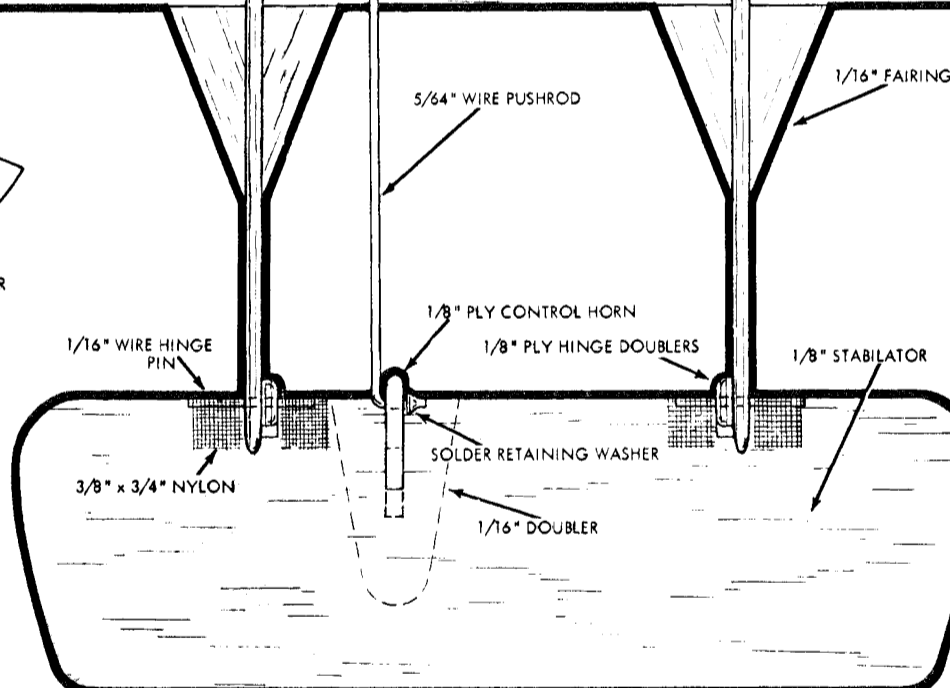
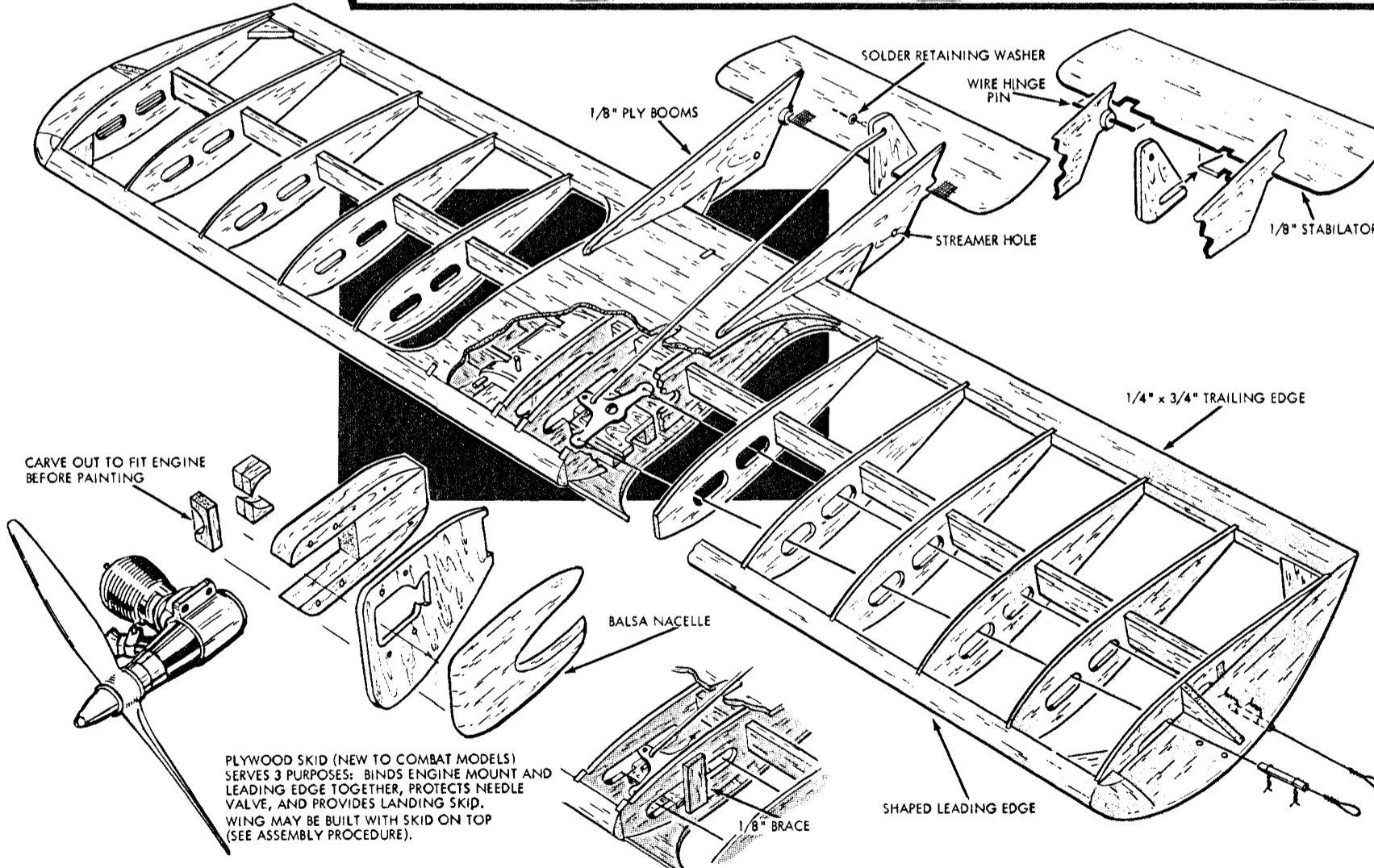
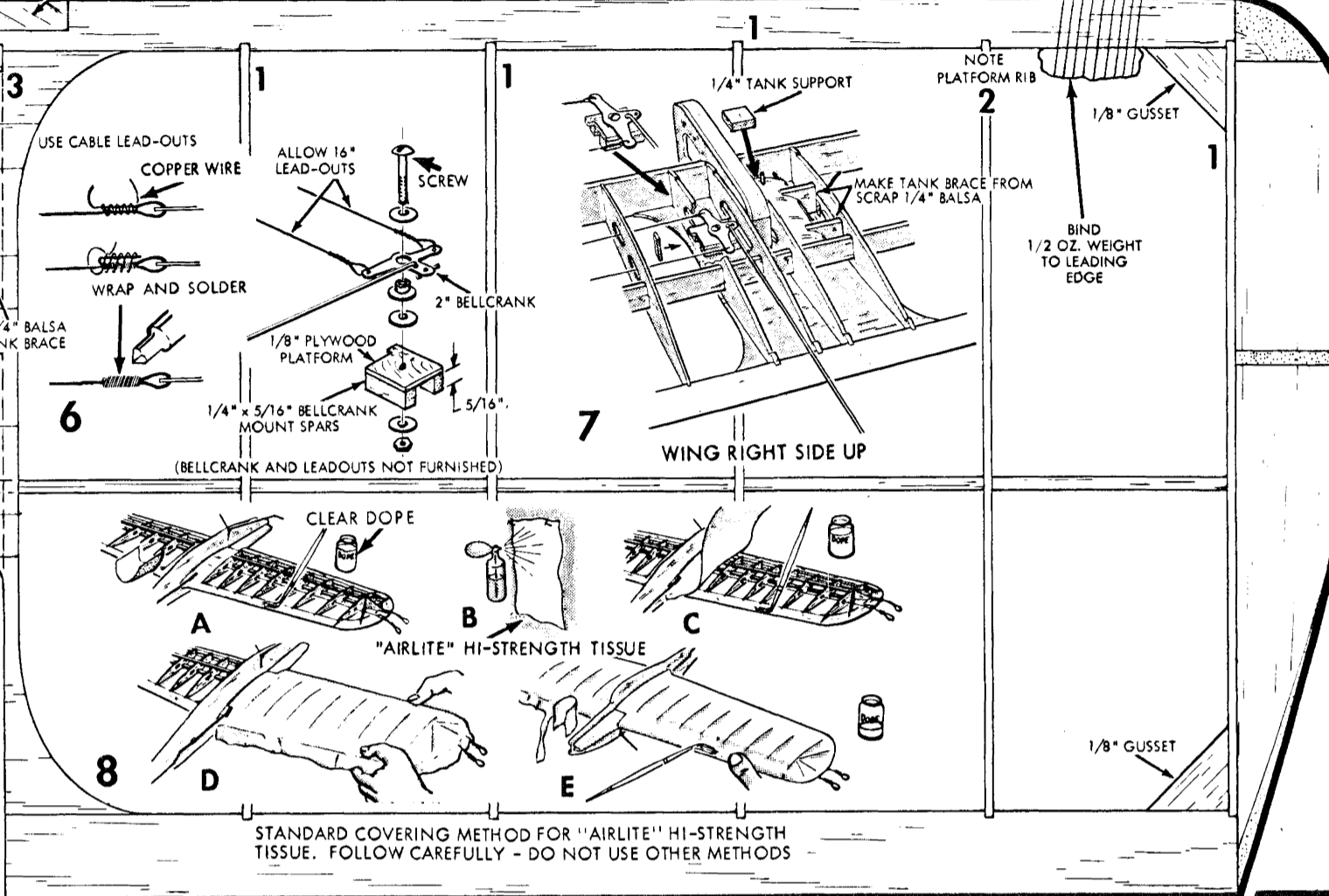
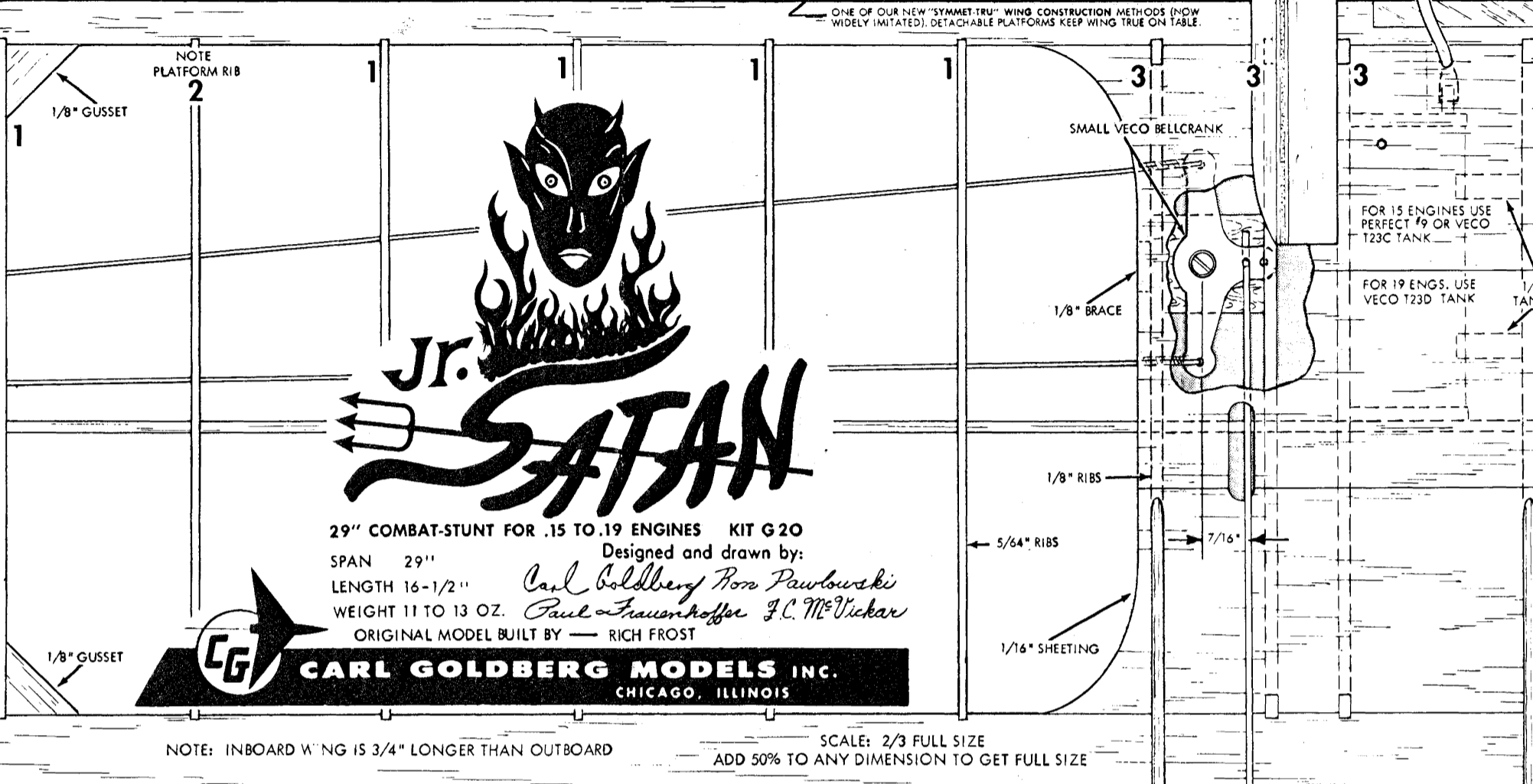
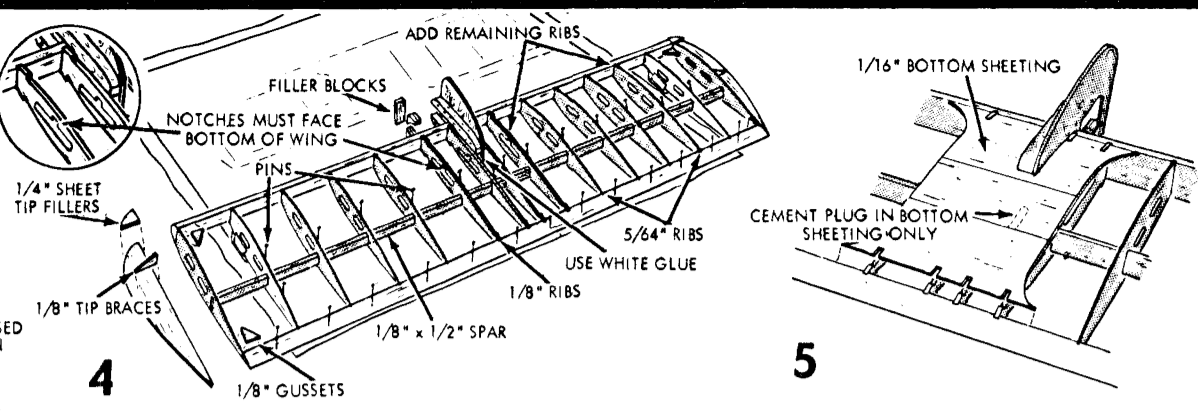
CG CARL GOLDBERG MODELS INC.
CHICAGO, ILLINOIS

ENGINES TO USE

MCCOY	.19
COX	SPECIAL .15, TD .15
	MEDALLION .15
FOX	.15X
VECO	.19
K & B	.19
CAMERON	.15
SUPER TIGRE	.15, .19
O S	.15, .19
ENYA	.15, .19

ALL .15 TO .19 ENGINES MAY BE USED
COX SPECIAL .15 ENGINE SHOWN

TIN FOIL HEAT SHIELD OPTIONAL



ASSEMBLY PROCEDURE

READ BEFORE GLUING

GENERAL - The lighter a model is, the tighter it can maneuver. Keep the weight down, and aim at a total not to exceed 13 oz. complete with engine, tank, etc.

Ruggedness is important, too. Don't spare the glue - but don't expect it to make up for sloppy joints.

White glue (such as Elmer's, Wilhold, etc.) makes excellent joints. Otherwise, use hot-glue-proof cement. Pre-glue with a first thin coat (and let dry) before actually joining parts. Excess white glue may be removed with a damp rag.

Prevent errors by going through the plan thoroughly before beginning work.

1. Use white glue (such as Elmer's, Wilhold, etc.) to assemble engine mount. Before assembly, add spacers S1 or S2 if necessary to fit your engine. See table "A".

White glue skid in place. Be sure edges of opening and rear notch are flush with inner edge of spacers. If no spacers, use inner edge of bearers.

On most engines, needle valve will appear on bottom of this airplane. If on top, needle valves can be reversed, but this should be attempted only by (or with the help of) an experienced modeler. If needle valve is left on top, skid may be put in upside down for protection on inverted landings. Wing is then built right side up, and should be lined up on lower right hand border of plan.

Plywood skid (new to combat models) serves 3 purposes: binds engine mount and leading edge together, protects needle valve, and provides landing skid. WING MAY BE BUILT WITH SKID ON TOP (SEE ASSEMBLY PROCEDURE).

2. Trim away spacers if necessary to clear engine. Drill 1/8" mounting holes for engine and install blind nuts. Center the rear holes exactly 1" from front of bearers.

3. Note the different spacing on each side of the leading and trailing edges. Be sure notches match indicators on left bottom border of plan before gluing.

4. Add 1/8" center ribs, using plenty of white glue between them and the mount; also between the mount and the leading edge.

5. Add 1/8" x 5/16" spars to plywood bellcrank mount, then to bottom sheeting and ribs. This installation must be strong, since in flight the entire weight of the plane and engine must be held by this assembly.

Install tank as shown. Make tank braces from scrap. DO NOT drill through leading edge for fuel line. Route fuel line through either the top or bottom sheeting, depending on which side the fuel pickup is on your engine.

6-7. Turn wing right side up. Bend pushrod per full size drawing. Make up bellcrank assembly with pushrod in hole about 7/16" from crank pivot center to give less "stabilator" movement. You won't need much, as stabilators are highly effective.

8. IMPORTANT: Follow these instructions carefully to obtain best results with the "Airlite" Hi-Strength tissue furnished. You may have trouble with other methods. This tissue has excellent dry and wet-strength, both. Silk may be used for greater strength.

9. Sand plywood booms and stabilator. Add 1/8" plywood hinge doublers. Drill 1/16" holes in each boom, and attach stabilator with 1/16" wire hinge pins and nylon. Hook up the pushrod. The horn provided will give about 15 or 20 degrees of movement in each direction. That is all you will need on this model.

10. Model should balance slightly ahead of the point shown on the plans. Doping the model will bring the balance back slightly. Modelers who haven't flown a combat ship before should balance the model about 1/4" ahead.

Shape the balsa nacelle and glue it in place on the engine mount and wing (for a better joint, first remove any covering). Carve out front filler block to clear engine shaft housing. Cover the mount and nose with nylon or silk.

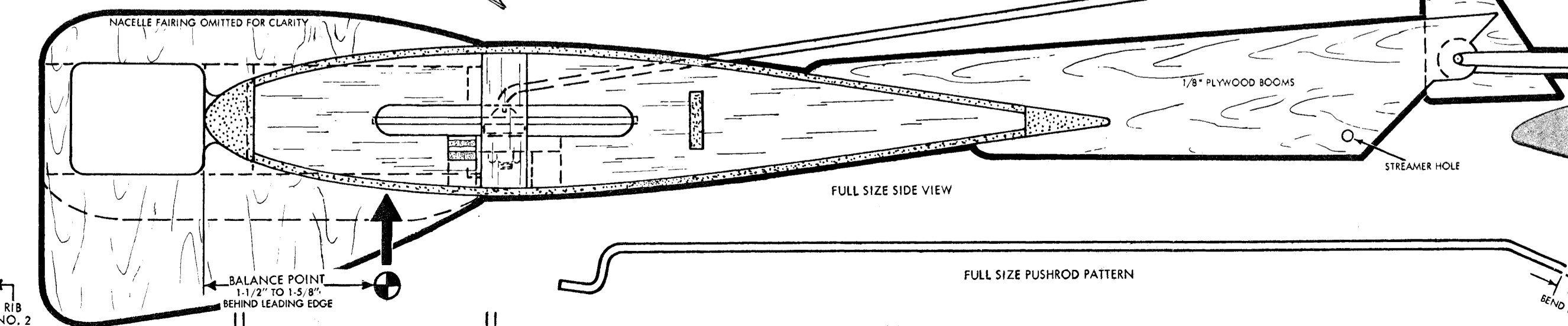
Finish the model as you desire, but go easy with the colored dope. Keep the model as light as possible, but finish it neat and smooth, as it will pay off in the circle. Give the entire model from 4 to 6 coats of dope.

11. Shear the top center section, and add 1/8" brace against rib to reinforce bellcrank mount.

12. Add a weight (about 1/2 oz.) to the outboard wing tip. Wrap it securely to the spar with fine soft wire or strong thread, and cement. Secure the lead-out tubes on the left wing tip with fine soft wire, bent over and glued.

13. Use a sanding block with fine (4/0) sandpaper, and smooth up the entire model.

14. IMPORTANT: After gluing skid to engine mount, trim all corners of bearers as indicated.



SPEED CHART

ORIGINAL COLOR SCHEME: ALL CLEAR WITH BLACK BOOMS AND RED TRIM

52-1/2 FT. LINES				8 LAPS (1/2 MILE)			
SEC.	M.P.H.	SEC.	M.P.H.	SEC.	M.P.H.	SEC.	M.P.H.
18.0	100.0	20.5	87.8	23.0	78.3	25.5	70.6
18.5	97.3	21.0	85.7	23.5	76.6	26.0	69.2
19.0	94.8	21.5	83.7	24.0	75.0	26.5	67.9
19.5	92.3	22.0	81.8	24.5	73.4	27.0	66.7
20.0	90.0	22.5	80.0	25.0	72.0	27.5	65.4

YOUR SUGGESTIONS WANTED!
Modelers often have ideas for improvements. We will be happy to hear from you by post card or letter on:
1. Your suggestions.
2. What you like best about our models.
3. What three new models you'd most like to see us bring out.
Be sure to include your name, age, and address so we can reply and thank you.

LINE RIBS UP HERE WHEN BUILDING WING UPSIDE DOWN

LINE RIBS UP HERE WHEN BUILDING WING RIGHT SIDE UP