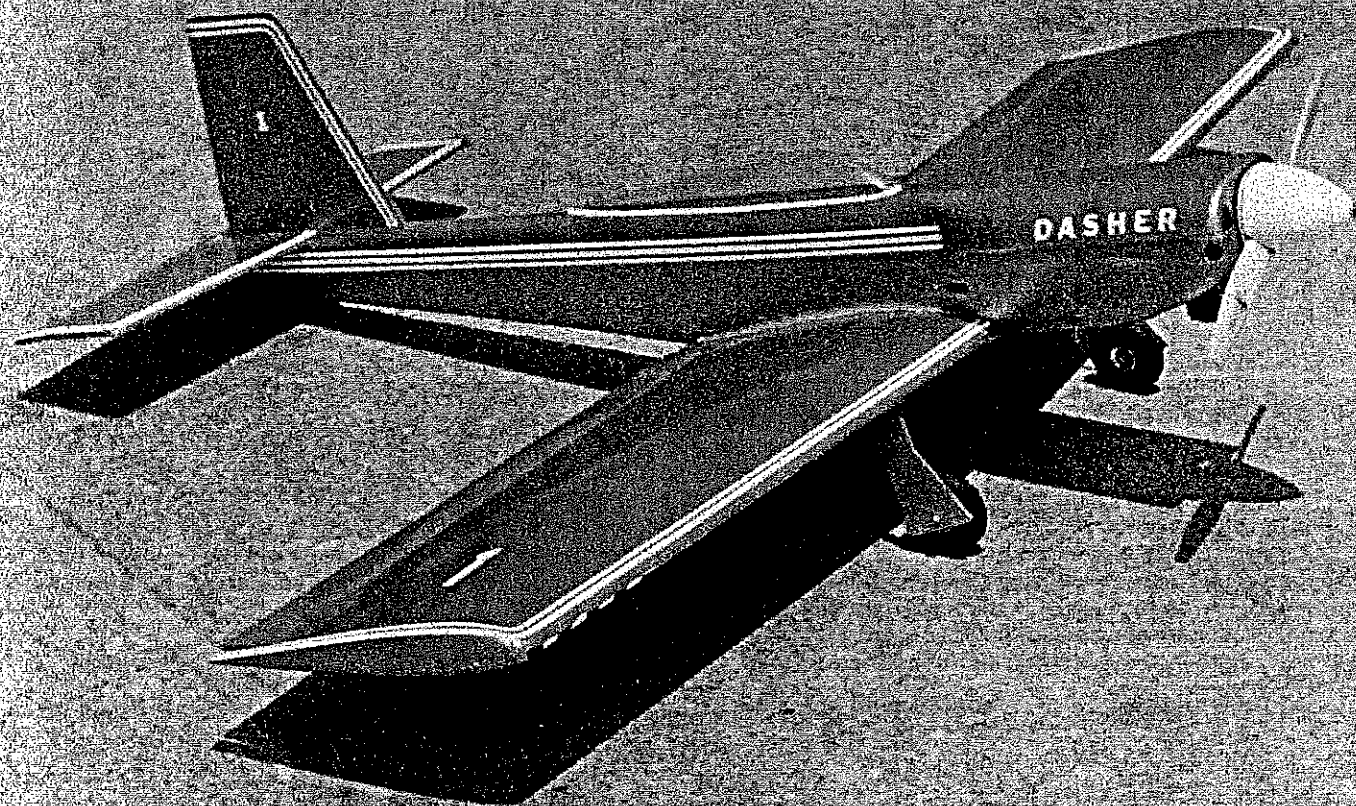


# DASHER 40

A Californian group has been flying 40-powered Dashers in 'Rap Sessions'—Race and Precision event flown around pylons. That takes a going, aerobatic machine. So if you are an adept stick twaker, Dasher will add zest to your sport flying. ■ Bill Evans



**T**HE DASHER is different in two ways: appearance and performance. At first sight, the cowl cheeks and canopy smack of Goodyear racer lines. Look again, and the P-51 gear doors stand out. The wing taper shows some Me 109. Finally, the large spinner and lower engine cowl say Spitfire. Dasher has a bit of several favorites.

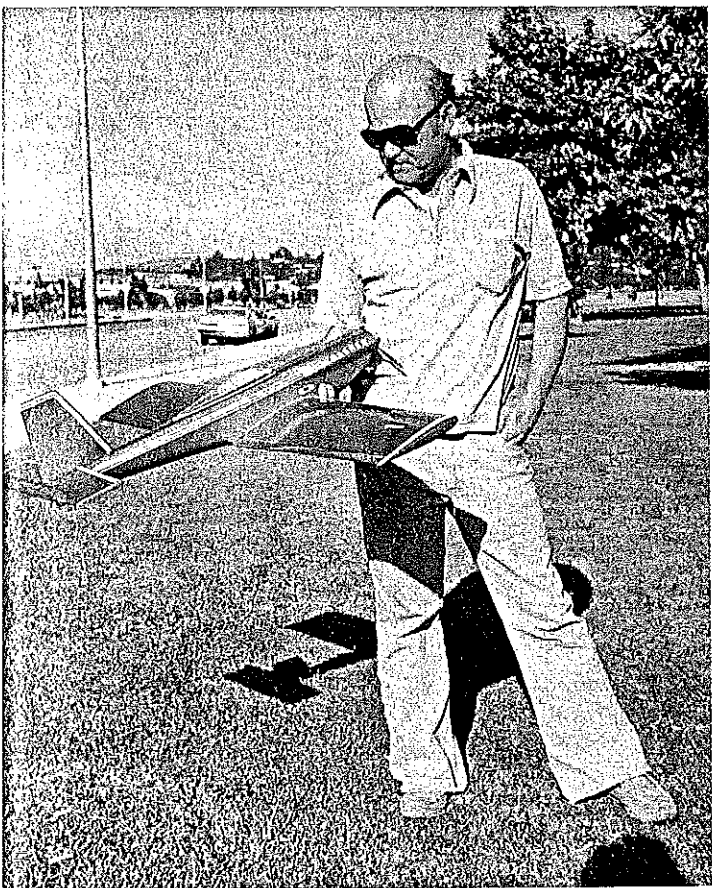
Dasher was designed with both speed and pattern precision in mind, small and clean for speed, and just enough area and control surface for maneuvers.

For some time, a group of California fliers has been fun-

flying the Dasher around pylons for racing AND pattern flying in what we call the RAP (Race and Precision) session (Event).

The RAP session includes five laps around pylons in which each of the two legs of a lap involves a straight flight leg for speed, and a precision leg (loop, roll, etc.). Overall scoring includes one-half point for each mph averaged for the total five laps, and a possible 10 points score for each of five maneuvers. Using this scoring with near-equal weighting, winning cannot be through either precision or speed alone.





Left: Bill and the Dasher—local Rap Session races combine Racing and Pattern, so it is agile. Right: A good picture is worth a thousand words, as they say. For its design requirements—pep and maneuverability, the proportions and areas would seem to be “right on.”

During the RAP session, a round includes each flier alone flying five laps. As mentioned, the flier is scored for each of the five aerobatics maneuvers, which are performed on the back side of each lap. An example scoring is: five-lap, average speed 86 mph, equals 43 pts; inside loop, 8 pts; roll, 9 pts; inverted pass, 9 pts; outside loop, 6 pts; spin, 10 pts. Total points are 85. One, two, three, or even more, rounds can be flown. The winner is the flier with the highest number of points for any round, not the average for several rounds.

Since we are all flying K&B 19-powered

Dashers, no one has bothered to write out any rules. We agree beforehand to the number of rounds we will fly. Just one more bit of information. One of the maneuvers must include reversing course, and one maneuver must be one vertical in nature (as a spin, spiral, or roll).

Sound like fun? It's meant to be... and is!

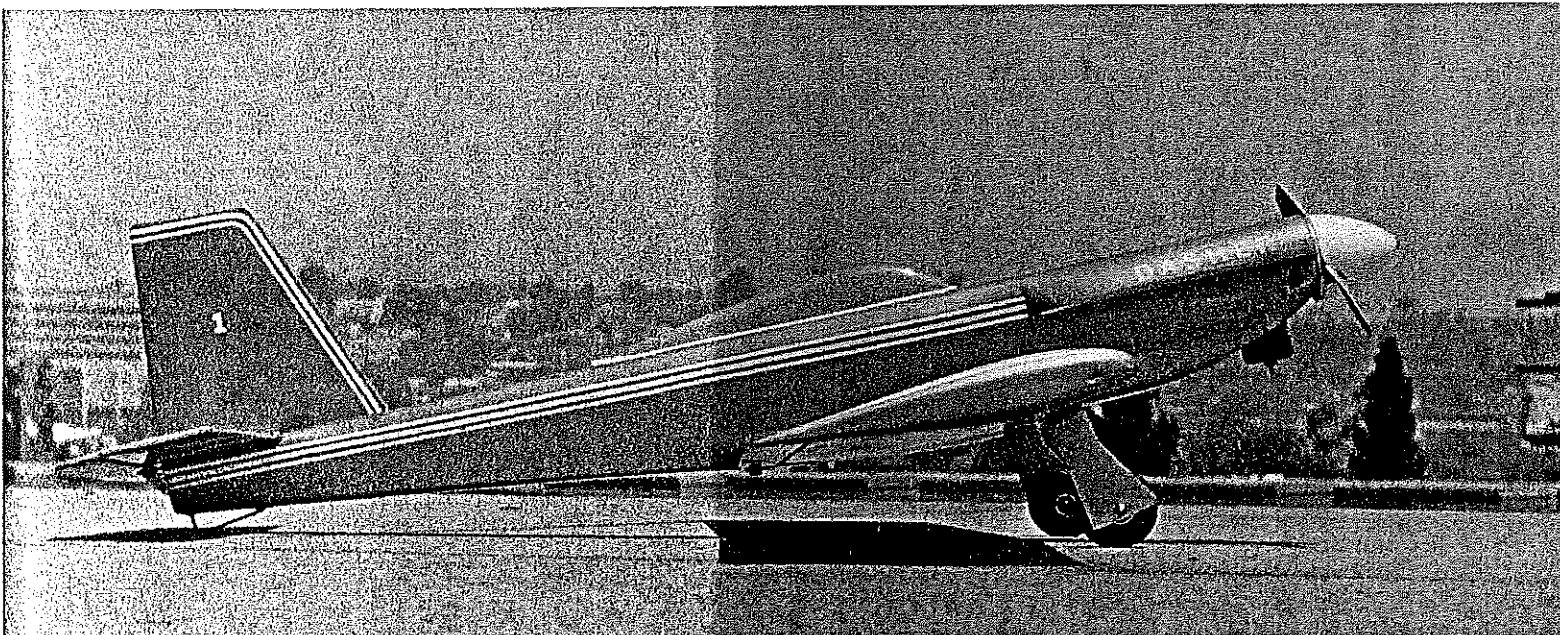
As you can see from the plans, Dasher construction was engineered to keep it uncomplicated and very straightforward. The fuselage is a box type, built upside down on a flat working table. Once all

the parts are cut out, the fuse itself can be completely assembled, and left to dry, in less than 30 minutes.

The wing cores are sheeted with 1/16" balsa, or 1/32" balsa, or 1/64" ply, all of which work very well. Choice is a matter of your preference.

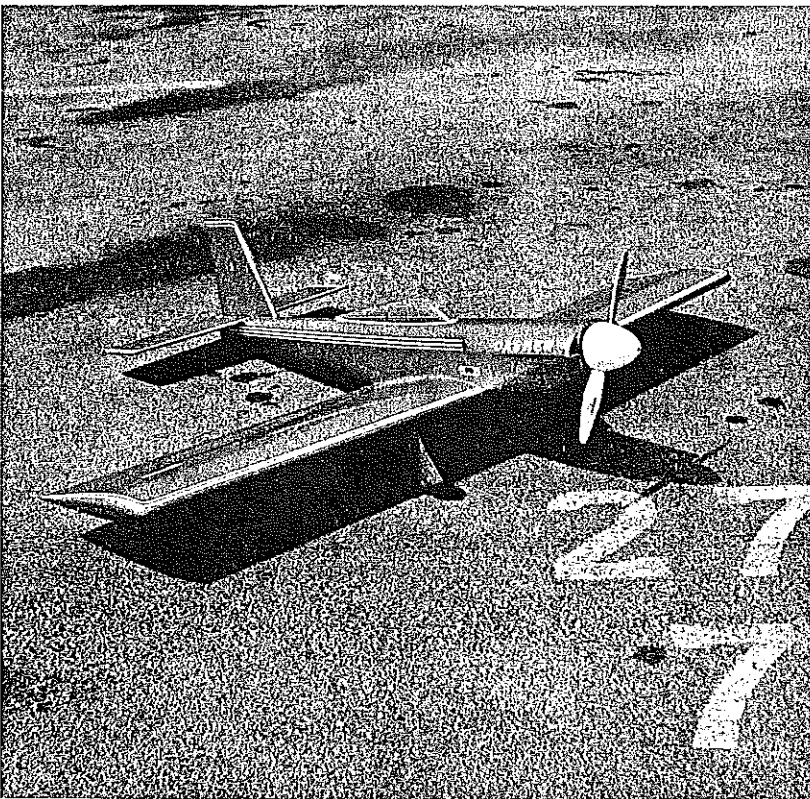
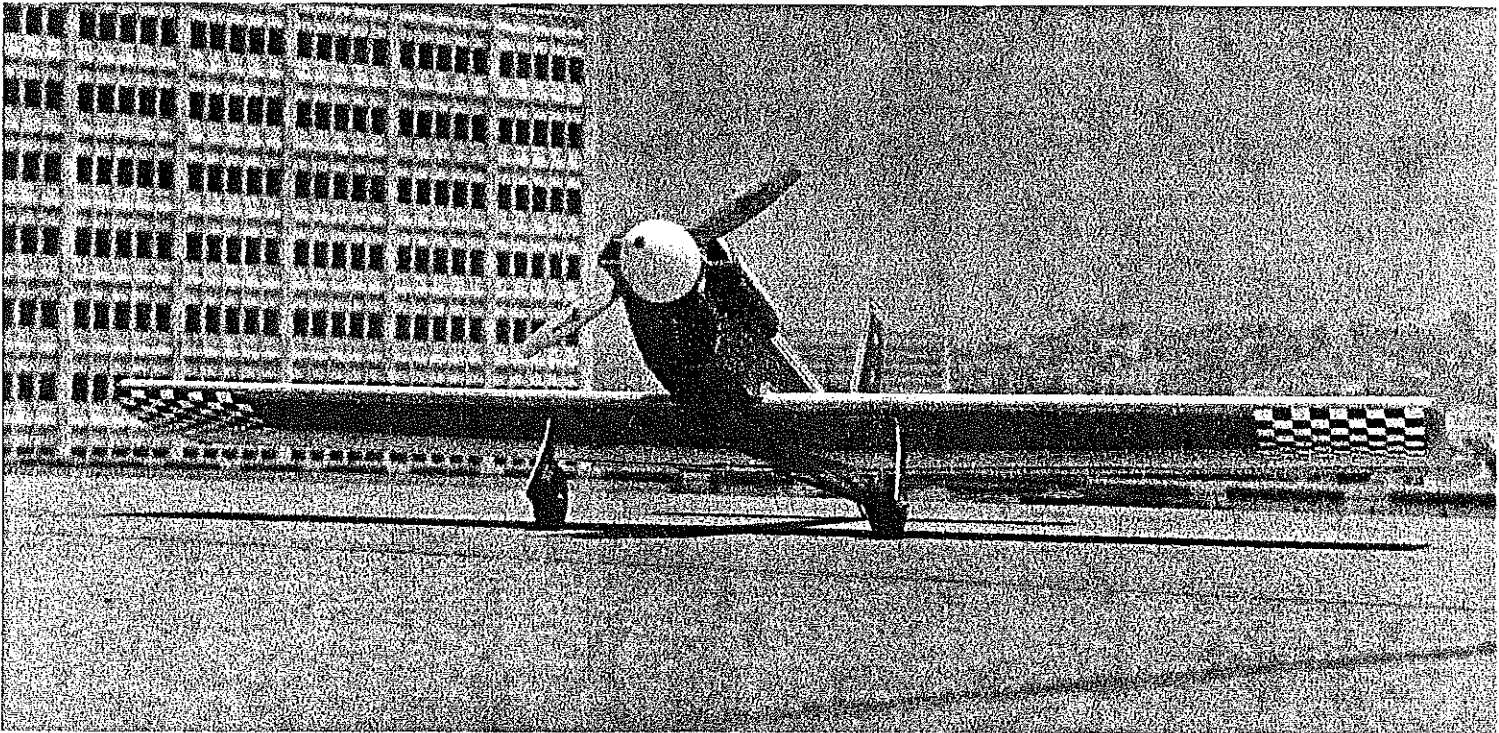
In place of the landing gear system shown, you may choose to install conventional torsion gear using 5/32" wire and hardwood blocks. Or, as some fliers have done, you may install a pair of the new light-weight retracts.

Material List: 8—1/16 × 4 × 36" balsa,









Left: Depending on the viewing point, Dasher gives one that "haven't I met you somewhere before" feeling—it could be one of those Thompson Mustangs in this shot. Right: Perched on the author's field box, the aircraft seems compact and business-like. Mostly straight lines.

3— $3/16 \times 3 \times 36$ " balsa, 1— $3/16 \times 4 \times 36$ " balsa, 2— $1/4 \times 3 \times 36$ " balsa.

Plywood:  $1/64$ " ply (optional for wing sheeting),  $1/8$ " ply (formers),  $1/4$ " ply (fire-wall).

#### Construction:

1) Read instructions several times so that you thoroughly understand them.

2) Cut four pieces  $1/2 \times 20$ " out of sheet

of  $1/4$ " balsa.

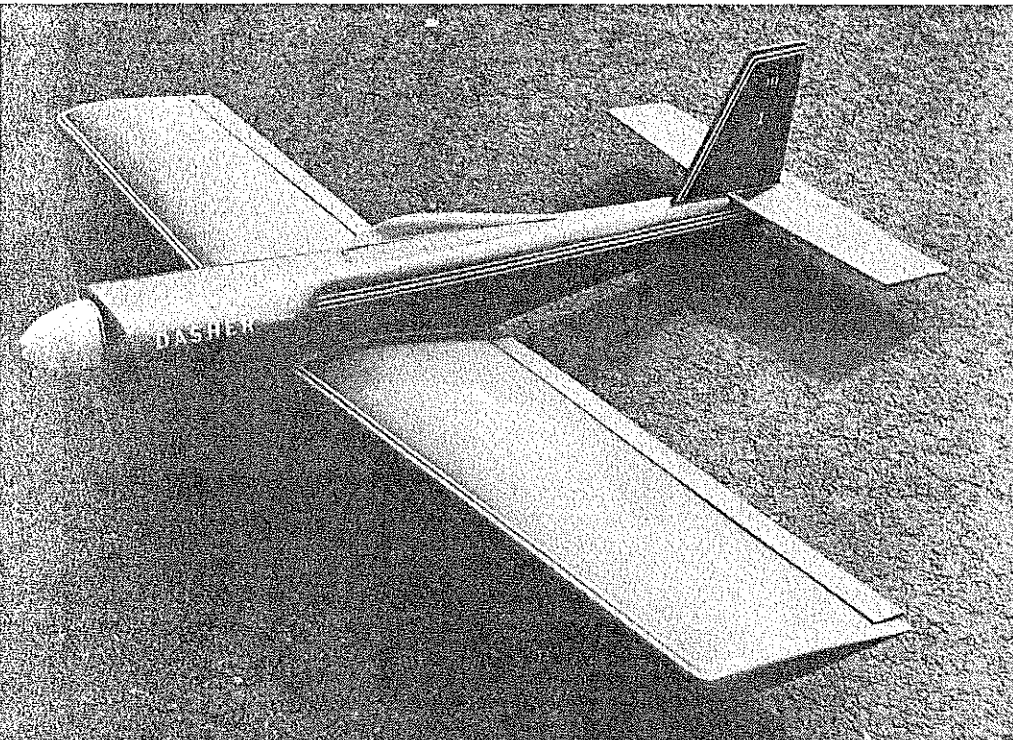
3) Glue and pin the  $1/2 \times 20$ " strips to the leading and trailing edges of the foam wing panels. Be sure to keep the panels from bending or warping when pinning on these strips. Set this assembly aside to dry.

4) Cut out fuselage parts: top, doublers, sides, formers, etc. Note that the fuse top is cut to shape as shown on plans.

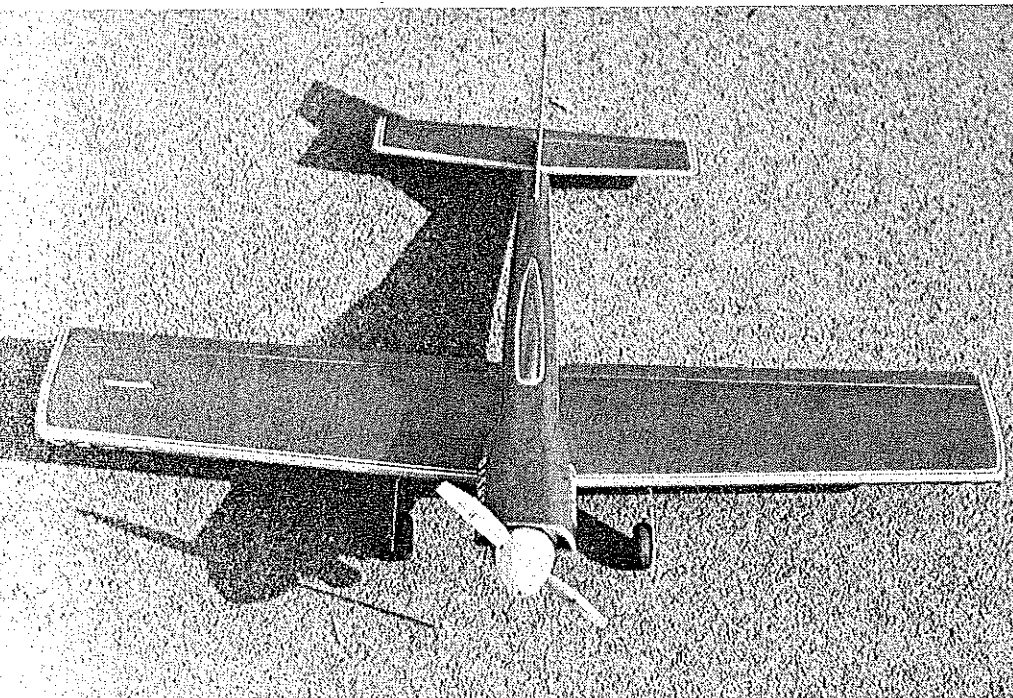
5) Lay fuselage top on flat surface and pin down.

6) Run a bead of glue on top inside edge of the fuselage sides and pin to the fuselage top.

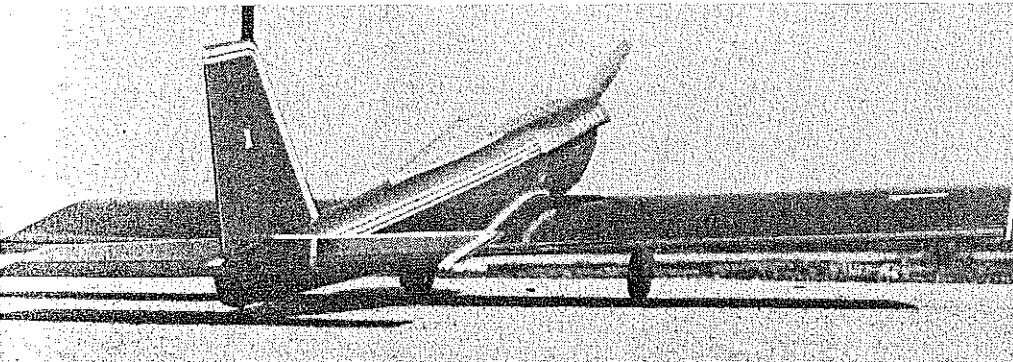
7) Glue and pin a length of  $1/2$ " triangle along the top inside edge of the fuselage. Push pins in at an angle from the outside of the fuselage. This will make it easy to



If you look at the Dasher from different views, you may be reminded vaguely of various real aircraft—there's a bit of a WW II fighter in this view. One-piece flipper simplifies things.



What you see is what you get. Compact, functional, powerful, the Dasher is a pilot's airplane.



If Bill goes in for taildraggers, it's because he undoubtedly thinks who needs the hassles of installing a trike. You'll need some skill to stay ahead of the Dasher anyway, so a two-wheeler is not a handicap. Nose design adds glamor to very functional, straight forward ship.

remove pins later.

8) Glue and pin in the two plywood formers and firewall.

9) Glue and pin in, from the outside of the fuselage sides, the  $\frac{1}{2}$ " triangle bottom corners. These run between the front edge of the fuselage and former #1 and from former #2 rearward from the wing trailing edge to the tail of the fuselage.

10) Glue and pin on bottom sheeting of the fuselage. Be sure that any pins left remaining through the fuselage top, on the inside, are removed.

11) Glue filler blocks and cowl checks into place as shown on plans.

12) Cut eight sheets of  $\frac{1}{16} \times 4$ " sheet to length of 20". Splice four of the sheets together using masking tape and either Zap or white glue. Same for the other four sheets and allow to dry.

13) Trim and sand  $\frac{1}{4}$ " wing leading and trailing edges so that the  $\frac{1}{16}$ " sheets will fit nicely over the cores and leading and trailing edges.

14) Cut the four pieces for the wing sheeting on a diagonal 9 to 7 inches (from the  $20 \times 16$  sheets).

15) Bond the  $\frac{1}{16}$ " sheeting to the wing cores with contact cement. I recommend Sig Core Bond. No matter what contact cement you use, test it first on a piece of scrap! (We also have used  $\frac{1}{64}$ " plywood for sheeting; it requires no splicing, and is stronger than balsa.)

16) Trim and sand wing panels to airfoil shape.

17) Cut two pieces from  $\frac{1}{4}$ " sheet, tapering from 1" to  $1\frac{1}{4}$ ". Trim and sand these pieces to shape as shown, for ailerons ( $\frac{1}{2}$ " dia. lightening holes on 1" centers are optional).

18) Join wing panels with 5-minute epoxy; place  $\frac{5}{8}$ " block under each wing tip for dihedral.

19) Install strip aileron links to ailerons and cut out center section blocks to allow for free movement of links.

20) Lay out  $\frac{1}{4}$ " plywood landing gear blocks, rout out wing, and 5-minute epoxy the gear blocks in place.

21) Cover wings and ailerons.

22) Cut out and bend dural gear, then use screws to attach gear to plywood blocks.

23) Install hinges and make aileron torque rods to fit aileron servo arms.

24) Carve and sand fuselage to shape.

25) The tail surfaces are cut from  $\frac{3}{16}$ " sheet balsa. Cut and sand to shape.

26) Apply your choice of covering; the original was covered in metallic green.

27) Make radio, engine, and tank installation, as shown on plans. Notice that aileron and elevator servos are offset to allow for clearance.

I hope you have as much fun and satisfaction from flying your Dasher in a RAP session as we have ours.

(Foam cores for the Dasher are available from Soaring Research, 19216 Calvert St., Reseda, CA 91335; \$8.00 plus \$2.00 shipping. Calif. residents add 6% state tax).