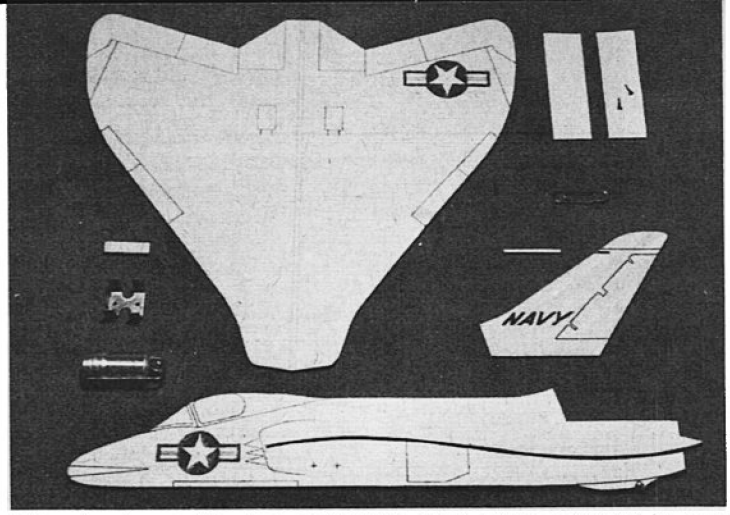
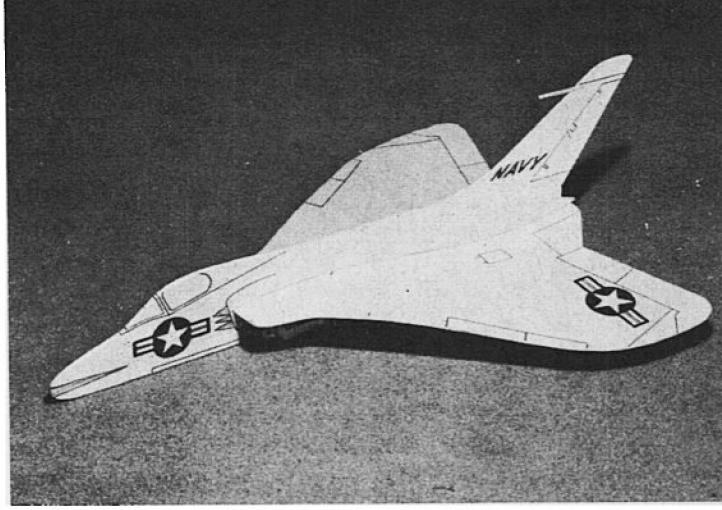


Although only a profile, there is delightful air of realism, enhanced by some careful detailing of the control outlines, insignia, and so on, with a soft pencil.

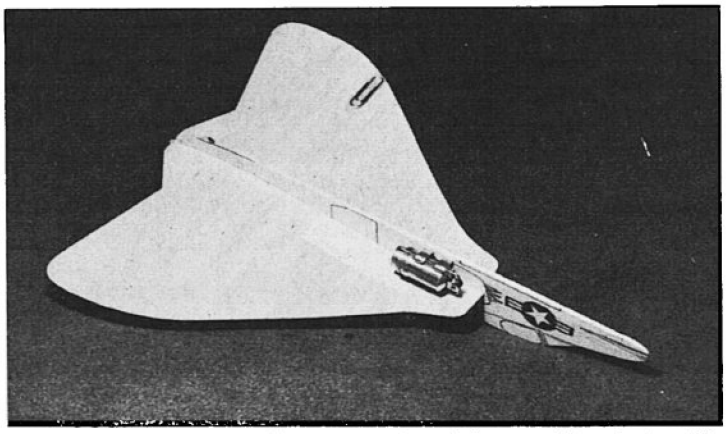


Novel S-shaped airfoil section has proved best for this type of ship. Sheet wing slides into slot in fuselage and assumes proper shape.

SKYRAY

By BILL DEAN

This profile bat wing really gets moving on its Jetex .50 powerplant. The accompanying plans are full size. Two hours' working time but many hours of fun flying.



Underneath view showing off-center mounting of Jetex and its asbestos strip. The paper clip counterweight to the motor indicates the size of the finished model.

Pretty in flight is the tiny Skyray here held as for launching by Val Mason. Odd fact about deltas is their stability without dihedral. Sweepback has same effect.

▸ Soon after the existing world air speed record of 753.4 mph was notched up by the famed Douglas F4D Skyray, we decided to make a simple all-sheet replica of this unusual bat-winged aircraft. Chet Miller, Douglas public relations manager, kindly provided three-views, photos and other data on which we were able to base our plans. Previous experience with similar deltas had shown us that no dihedral was needed and an 'S' shaped airfoil was best—and in this case we found that scale fin area was exactly right. The correct balance point was located by shifting the Jetex .50 backward and forward along the fuselage until a smooth glide resulted.

As luck would have it, the prototype had a natural turn to the right and this effectively canceled out the left-turning tendency under power caused by the side-mounted (on right) power unit. Minor trim adjustments were effected by bending the wing trailing edges and the flight pattern consisted of a steady climb curving slightly to the right, followed by tighter right circles on the glide.

Stability is as good as any conventional design and stall recovery is much, much better. Glide ratio is slightly inferior to the usual wing-and-tailplane type, but the sight of a scale Skyray wheeling gracefully overhead is ample compensation. You might expect this to be a tricky little ship to fly, but in actual fact the F4D proved to be one of those "naturals" for model building, just like a Piper Cub or a Fokker D-8!

Now let's turn to the construction notes. Start by joining three pieces of medium-soft 1/16 in. sheet (3 in. wide), edge to edge, pinning them down flat on the building board (see dimensioned sketch on left of plan). Trace the actual outline of the wing (A) onto these joined pieces of sheet and cut out.

Trace the fuselage (B) onto medium-hard 1/8 in. sheet and the fin (C) onto medium-soft 1/16 in. sheet, noting the wood grain direction. Cut out these parts, then pierce two holes in the fuselage to take the screws for the Jetex mounting clip and cement a rounded match-stick in the upper fin slot. Now trace the markings—such as the canopy, insignia, U/C doors and control surface outlines—with a soft pencil. Go over the pencil lines with a ball point pen, using a straight edge as a guide where possible.

Mark the fuselage location on the wing with two soft pencil lines (top and bottom), then cement the wing in the 'S' shaped fuselage slot. Make sure the wing squares up with the fuselage in the front view and hold the two parts together with pins until the cement dries. Cement the fin to the fuselage, making (*Continued on page* 51)

PLANS ON FOLLOWING PAGES

Skyray

(*Continued from page 19*)

sure that it is quite upright.

Cut a 1 in. length of hard balsa 1/4 x 1/8 in. and cement this to the left side of the fuselage, over the mounting clip holes. Now screw and cement the clip to the right hand side, so that it is parallel to the lower edge of the fuselage. The version in the photograph has clip on other side, in which case opposite turn adjustments should be made. Cement strips of asbestos paper to the fuselage and the wing, back of the mounting clip, to prevent these parts from becoming scorched.

Cement a paper clip to the underside of the left wing tip as indicated to counterbalance the side-mounted power unit. Push a pin into the top of the fuselage, 1/16 in. behind the first join in the wing sheet. With a loaded motor in place, the model should balance levelly at this point. If tail heavy, unscrew the mounting clip and move it forward slightly. If nose heavy, move the mounting clip back slightly.

Test glide from shoulder height in the usual way, bending the wing trailing edges up or down for trim adjustments. Make the model circle gently right by bending up the right trailing edge a little. Leave the fin at neutral. When you are satisfied with the glide, light the fuel igniter wick, wait for several seconds for the thrust to build up, then launch smoothly on a level keel. A shallow climb to the right should result, followed by a slightly tighter circle in the same direction after the charge is expended. Avoid flying over wet grass as this will cause the wing to warp and spoil the trim.