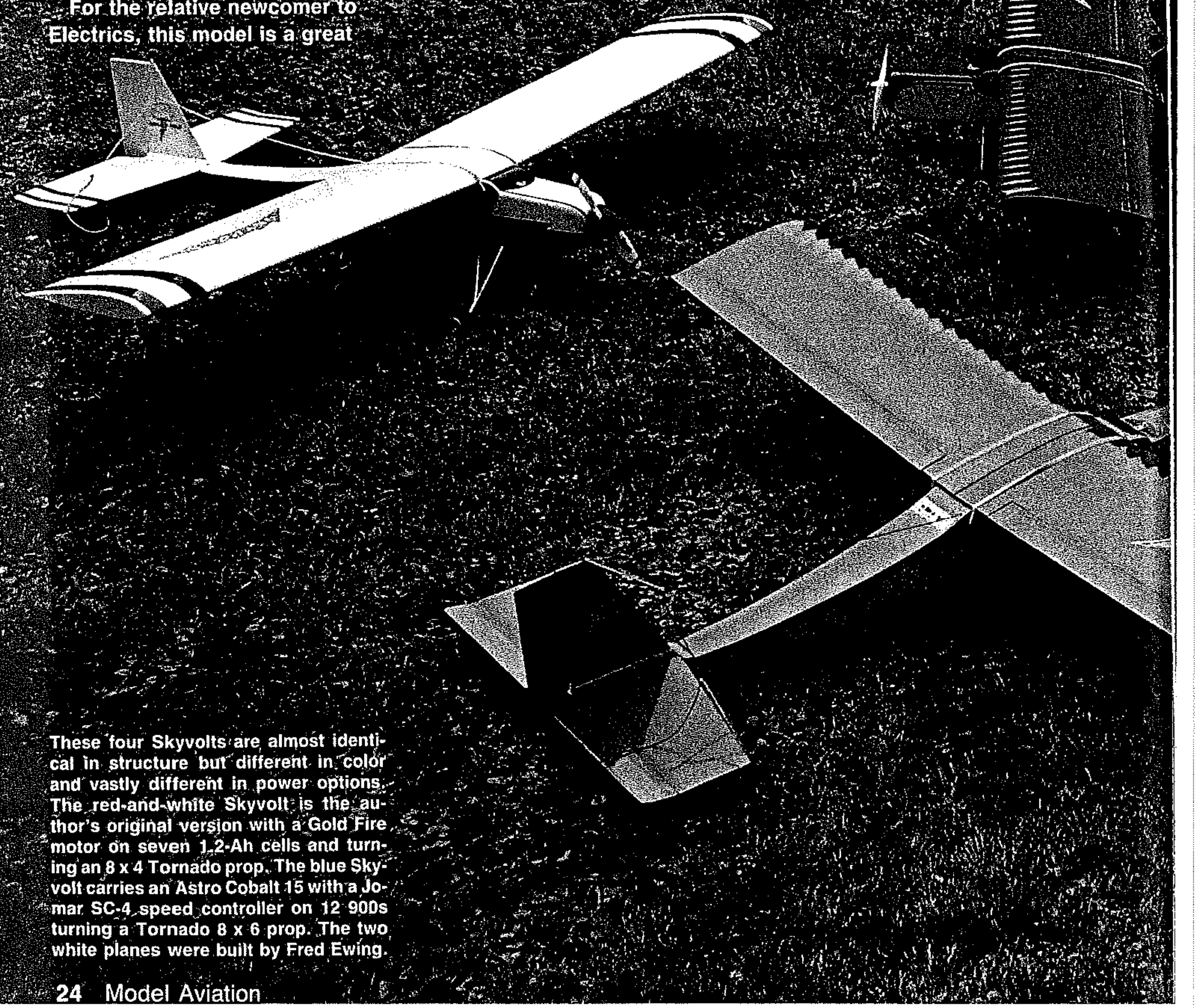
# SKYVOLT

**Ready to go a step beyond the usual Electric trainer? This aptly named sportster can take a wide variety of electric power installations, from a docile 05 to a high-performance 15 motor. It's appealing to the eye, relatively easy to build, and with its large and unique aileron design, it's fully aerobatic.**

**■Bob Kopski**

YOU'VE NEVER seen anything quite like this Electric before. Skyvolt is a unique and versatile design that juxtaposes a high level of performance and fun with a stylish, compact airframe.

For the relative newcomer to Electrics, this model is a great answer to "What's next?" When you've used up all the fun afforded by many of the Electric trainers presently on the market (Amptique, PT Electric, Mirage, Aero-lectric, etc.) and are ready



These four Skyvolts are almost identical in structure but different in color and vastly different in power options. The red-and-white Skyvolt is the author's original version with a Gold Fire motor on seven 1.2-Ah cells and turning an 8 x 4 Tornado prop. The blue Skyvolt carries an Astro Cobalt 15 with a Jomar SC-4 speed controller on 12 900s turning a Tornado 8 x 6 prop. The two white planes were built by Fred Ewing.

for a performance step beyond, Skyvolt may be just what you need. It's also a good choice for the experienced modeler of the wet power persuasion who'd like to try quiet power.

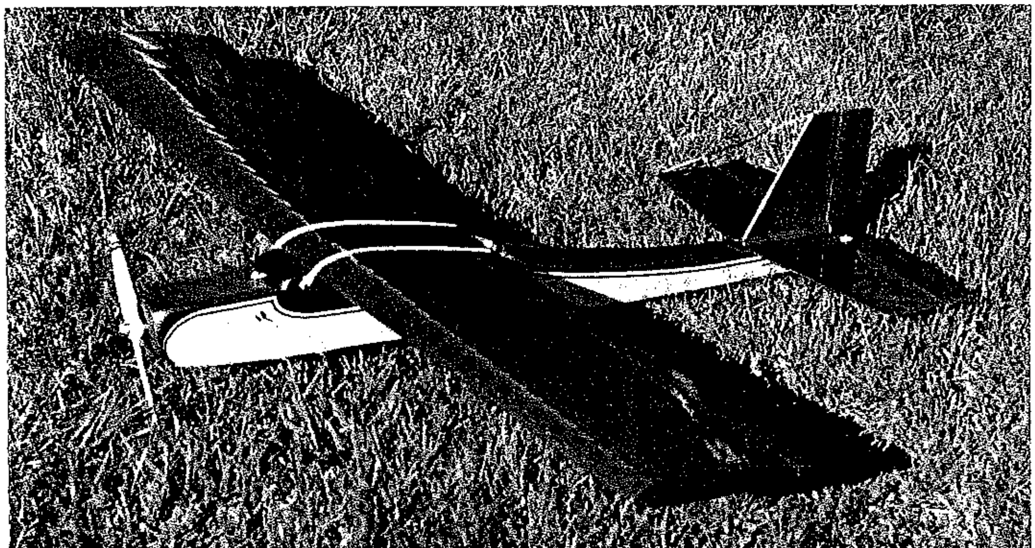
Skyvolt gradually evolved in my mind's eye during many years of flying my earlier Spectra Stunt (November 1984 *Model Aviation*). Much as I like the Spectra, I wanted a somewhat more stylish version that would also ground handle and accommodate a wide range of power systems. Skyvolt emerged over a two-year period—first conceptually, and then in reality. It has easily met the design intent and in many ways exceeded it.

This is a capable, aerobatic model that follows well-proven design guidelines. Flying on a NACA 2412 airfoil section, Skyvolt has a strong, light structure, sturdy landing gear, and steerable tail wheel. It's designed for three or four channels, with one channel always reserved for ailerons. Rudder (and tail wheel steering) may be omitted if desired. Nominally a "three-pound plane," depending primarily on the power system chosen the finished model will weigh 48 oz., give or take a few ounces either way.

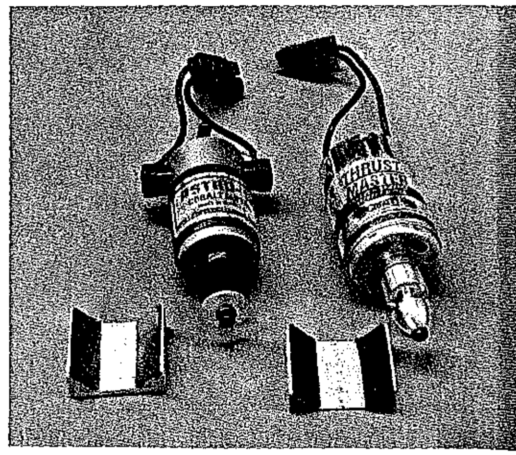
**Suitable power systems** for Skyvolt include some of the more spirited economy "can" motors on up to cobalt 15s, using batteries of 7 to 12 cells. In effect a "125- to over 200-watt plane, it flies comfortably at the lower end of the power spectrum but really comes alive with the high-end systems. With the versatile mounting scheme shown on the plan, the motor mount area will nest anything from the small cobalt 05 to the rather bulky ferrite 15. If any other Electric offers this much designed-in versatility, I'm not aware of it.

Skyvolt was intended primarily for direct-drive installations. Among the systems used in the prototype are the economy Gold Fire and Kyosho 360 ST, the ferrite 15, and the cobalt 15. The first two motors have worked well with 8 x 4 nylon props and seven 1.2-mAh cells. The 15s have been used with 8 x 6 nylons on 10 900-mAh cells and 8 x 4 nylons on 12 900s. An especially nice combination is the geared cobalt 05 on eight 1.2-mAh cells turning a Kyosho 9 x 8 prop. This impressive installation requires a somewhat enlarged nose block opening to clear the higher thrust line.

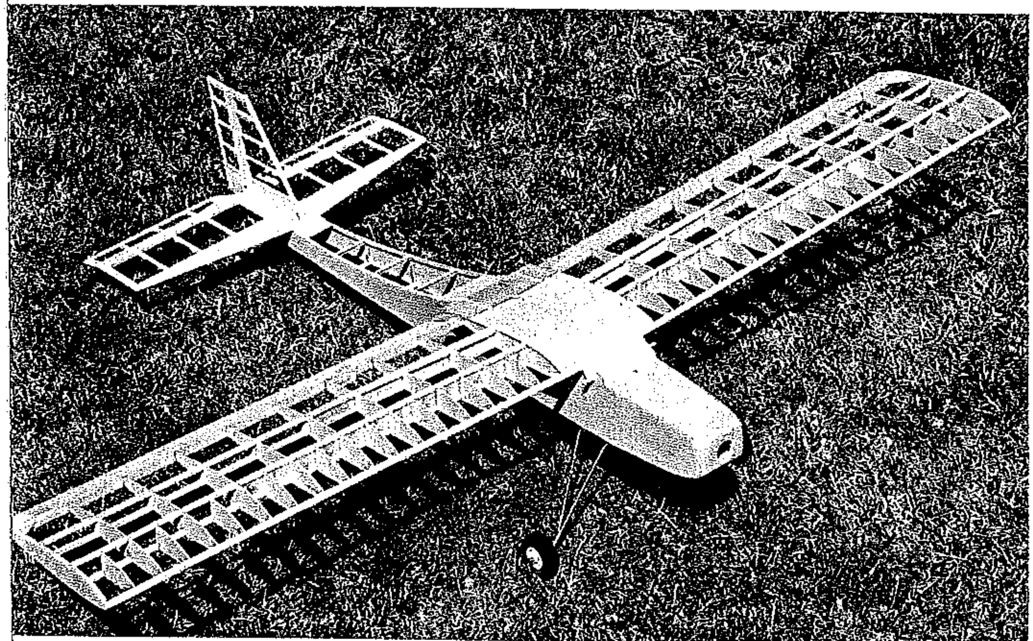
While the Skyvolt's flight performance capability varies with the power system chosen,



Close-up shot of the author's original Skyvolt. Its structure is basically identical to later versions even to the point where wings and power systems have been interchanged. Note the aerodynamically clean lines of this little sportster. It'll handle power variations from 05 to 15.



Two different-sized motors accompanied by their V-block cradles. These blocks can be glued onto the motor mount plate or interchanged with motors. They have two strips of sandpaper attached to the bottom to prevent slipping. Use 1/16-in. single-sided foam tape on the cradle edges for a soft motor set.



Skyvolt in its bare bones showing all the sticks it takes to put it together and keep it together. At this stage of construction, with no equipment installed, it should weigh 10 to 11 ounces.

you'll get very satisfying results even with the economy installations. The large ailerons permit easy consecutive rolls. Inside loops are a piece of cake, and with a little care and a slight breeze the model will even execute outside loops. The airplane takes a definite, directed attitude in moderate winds, handling them easily. Just a touch of *down* stick is all you need for sustained inverted flight, and it'll climb from this attitude into a light breeze.

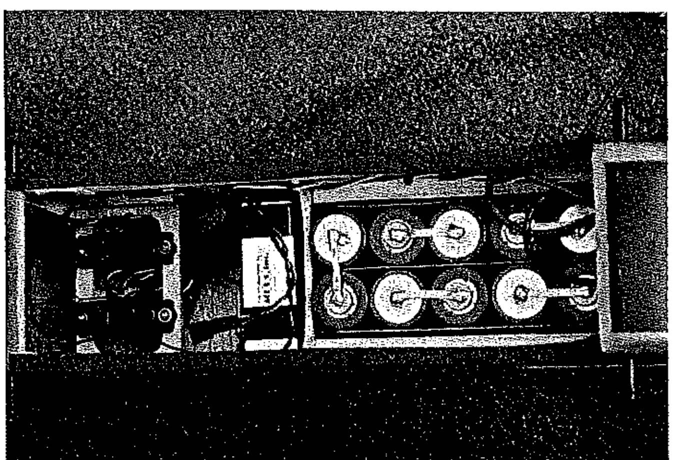
Performance is well beyond the trainer envelope. The model does spins and snaps. It has quite a wide speed range, and Landings are very controlled. Given some head wind, takeoffs on short grass are possible even with the low-end power systems. I'm biased, but I think the Skyvolt is a terrific flier.

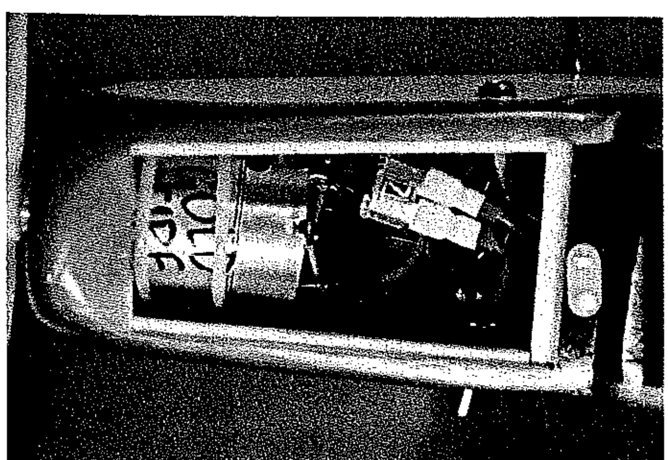
As you'd expect, installing the cobalt 15s further augments performance. Feed in anywhere from 150 to over 200 watts of power, and you've created a whole new machine. At the higher power end the airplane is faster, takes off and does touch-and-goes more easily, and executes very impressive square inside loops. There are sure to be maneuvers within the model's range that I have yet to try.

Whatever power combination you choose for the Skyvolt, remember that everything works much better with a speed control. Don't build the model without one.

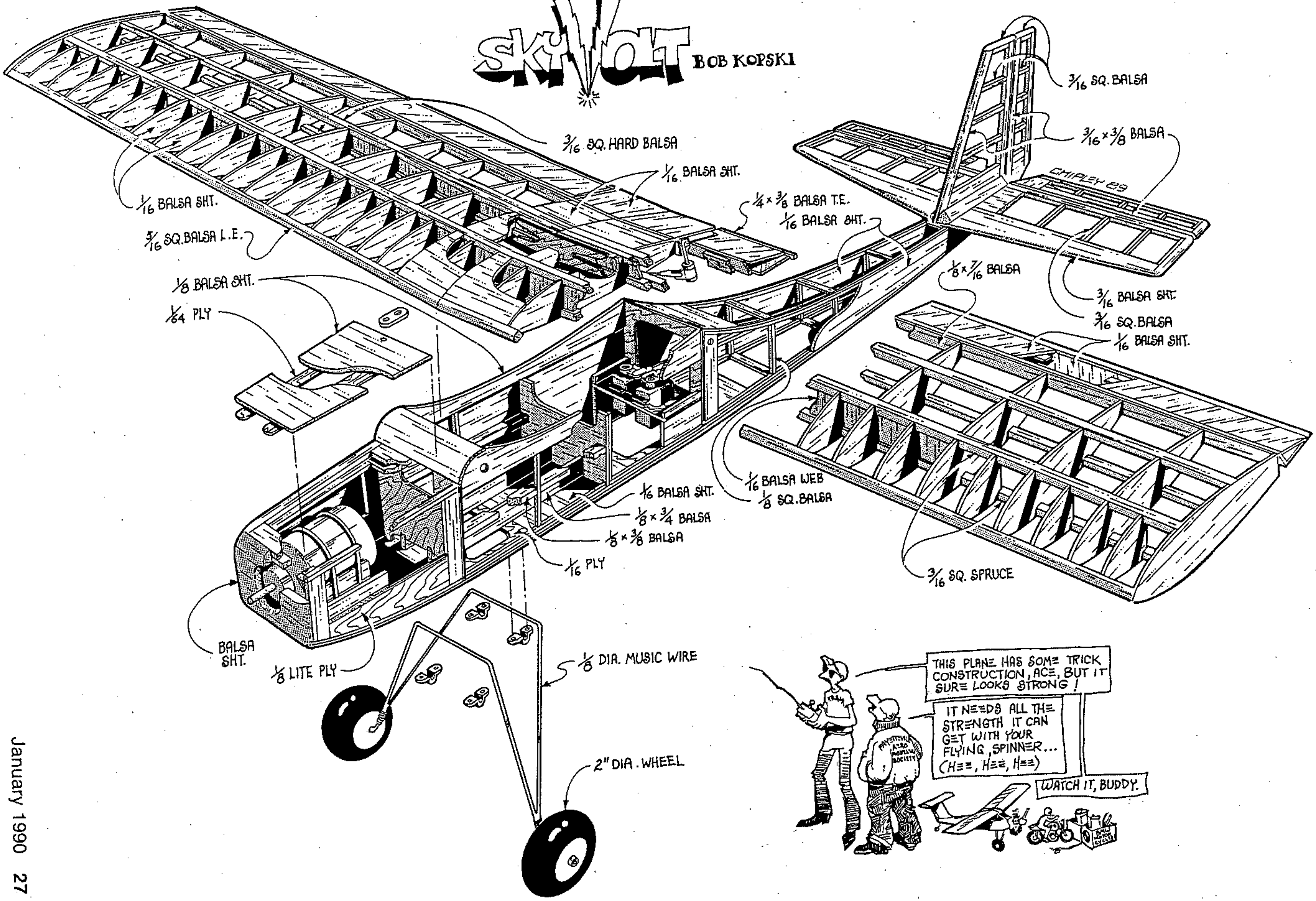
### Construction

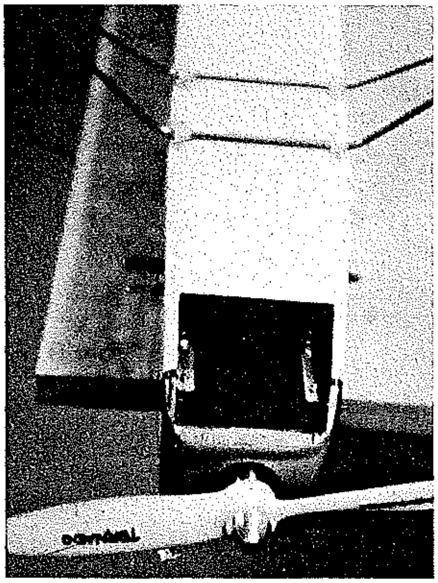
**As with any good Electric,** this structural design emphasizes strength where needed and light weight everywhere. Building techniques, generally familiar and straightfor-



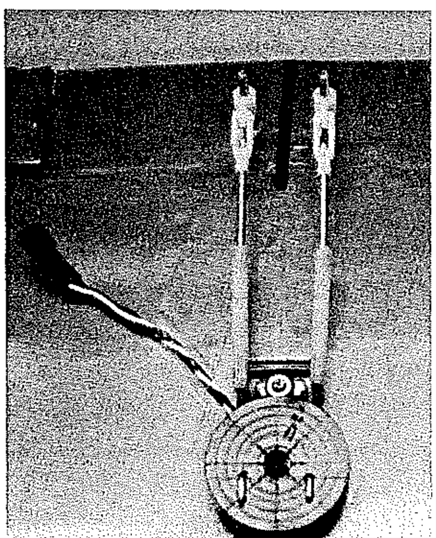


Left: A peek inside the cabin of Skyvolt showing 10 of the 12 900-mAh cells in position (two are hidden under the windshield). The receiver is double-sticky Velcroed to former F3. The 250-mAh receiver battery pack is Velcroed to the floor under the receiver. Right: Great Planes Gold Fire motor shown strapped in place. Note the fuse visible behind the motor. The speed controller is mounted deep down against the floor.

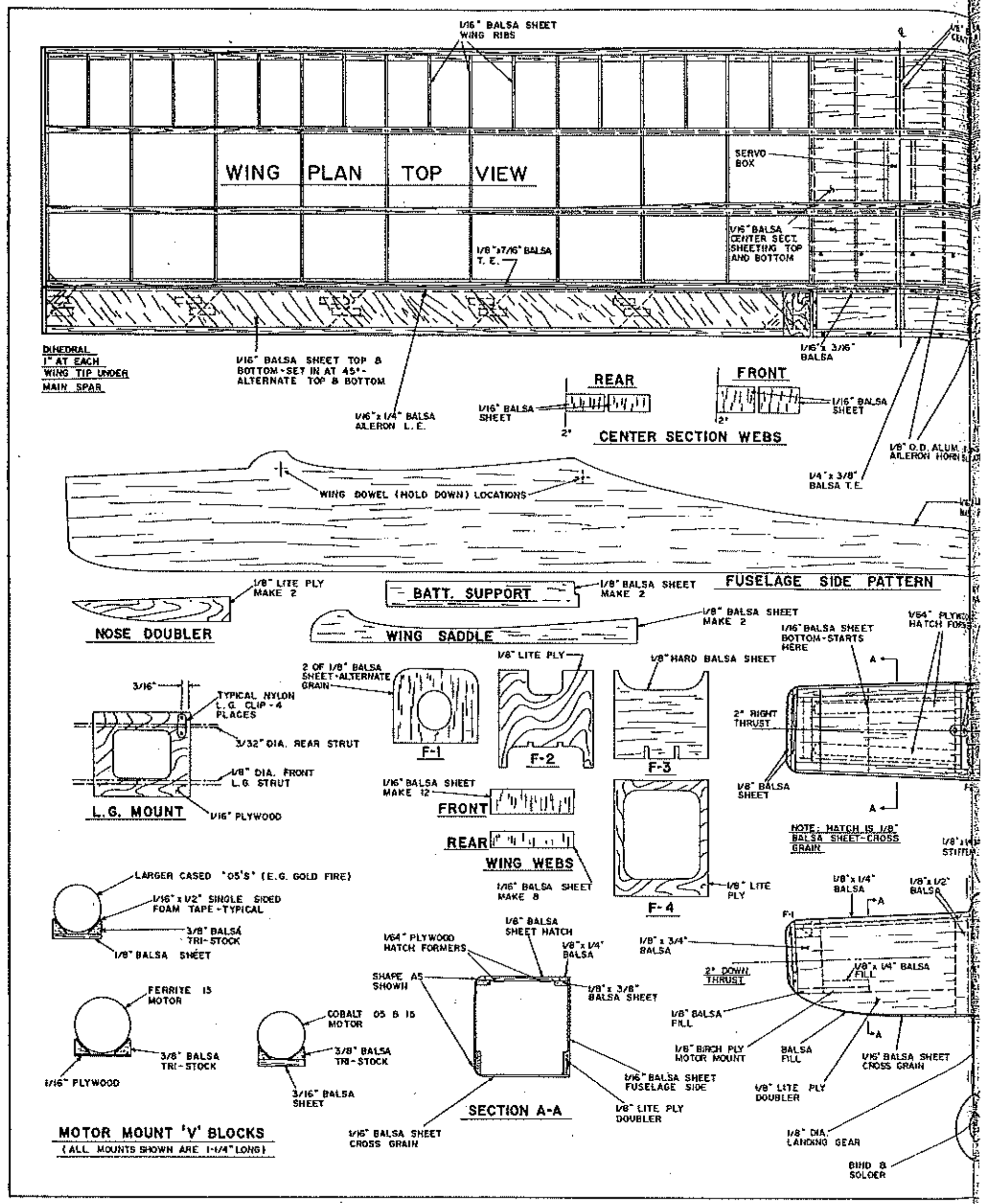

SKYVOLT
BOB KOPSKI
3/16 SQ. BALSA
3/16 x 3/8 BALSA
3/16 SQ. HARD BALSA
1/16 BALSA SHT.
1/16 BALSA SHT.
1/4 x 3/8 BALSA T.E.
1/16 BALSA SHT.
3/16 SQ. BALSA L.E.
1/8 BALSA SHT.
1/64 PLY
1/8 x 7/16 BALSA
3/16 BALSA SHT.
3/16 SQ. BALSA
1/16 BALSA SHT.
1/16 BALSA WEB
1/8 SQ. BALSA
1/16 BALSA SHT.
1/8 x 3/4 BALSA
1/8 x 3/8 BALSA
1/16 PLY
3/16 SQ. SPRUCE
BALSA SHT.
1/8 LITE PLY
1/8 DIA. MUSIC WIRE
2" DIA. WHEEL
THIS PLANE HAS SOME TRICK CONSTRUCTION, ACE, BUT IT SURE LOOKS STRONG!
IT NEEDS ALL THE STRENGTH IT CAN GET WITH YOUR FLYING, SPINNER... (HEE, HEE, HEE)
WATCH IT, BUDDY.



Close-up of the details of the 0.016 x ¼-in. brass strip washer plates under 2-56 machine screws that thread into yellow inners of the Sullivan Golden Rod around the motor. This structure is the air intake as well.



The aileron servo linkage mounted in the wing shows a Futaba output wheel on an S-33 servo with the pushrods in the forward offset holes for differential aileron throw. This allows for more *up* aileron motion than *down*. Clear plastic tape holds the servo wire against the wing and out of harm's way.




ward, basically follow my construction guidelines for Electrics discussed in "All About Electrics," Part Eight, April 1984 *Model Aviation*, and in the previously referenced Spectra article. However, a few of the assembly procedures I've devised are unique to the Skyvolt.

**Tail surfaces.** I like to start off with these simple structures. They're built and assembled so quickly that you feel a lot has been accomplished in very little time.

Select straight, lightweight balsa for the edges. Note that the balsa edges of the rudder and elevator are taper sanded at the hinge line. Follow this procedure if you plan to use tape hinges as in the prototype (Scotch catalog #190 clear plastic tape, ¾ in. wide, at most hardware or stationery stores. See *Model Aviation*, April 1984.) If you prefer to employ conventional hinging techniques, sand the hinged edges accordingly.

Be sure to take into account the hinging method chosen when positioning the half-circle cutout in the rudder to clear the spruce elevator joiner piece. Also, be sure to pencil in guide marks on the stabilizer assembly. These are necessary for mounting the fin/rudder to the stab assembly, and the latter to the fuselage.

Mark and drill $\frac{3}{32}$ holes for the horn mounting screws in the rudder and elevator as shown. The completed tail structure should weigh about ¾ oz. uncovered.

**Fuselage.** Begin by selecting two pieces of $\frac{1}{16}$ x 4 x 36-in. medium balsa. Together these should weigh about 1.5 to 2.0 oz. After joining the sheets with double-sticky tape in three or four places (Scotch brand #665 double-stick transparent tape or a similar product), I trim one edge of the stacked sides straight using a metal straightedge as a guideline. Each straight-cut balsa side edge becomes a fuselage bottom edge.

Outline the fuselage profile on the balsa (I prefer using Pilot brand precise rolling ball extrafine pens) and cut the side edge to the fuselage profile size and shape. A finished pair cut to outline typically weighs about 1¼ oz.

Mark and drill the $\frac{3}{16}$ wing hold-down dowel holes using a sharpened brass tube of the same dimension. Separate each of the two side edges, remove the tape residue, and lay the side sheets accurately over the plan side view, bottom straight edge to bottom straight edge. Using a ruler, mark the sheet sides with vertical lines, using the plan phantoms to locate all the necessary former and upright positions as shown. This marking exercise greatly simplifies fuselage construction and significantly enhances the accuracy of alignment during assembly.

Glue in the ⅛-in.-sq. longerons and verticals, taking particular care to space them accurately at the former locations. (I use a scrap of the actual former material as a spacer-guide to position the gaps where the formers will be placed.) Add the wider

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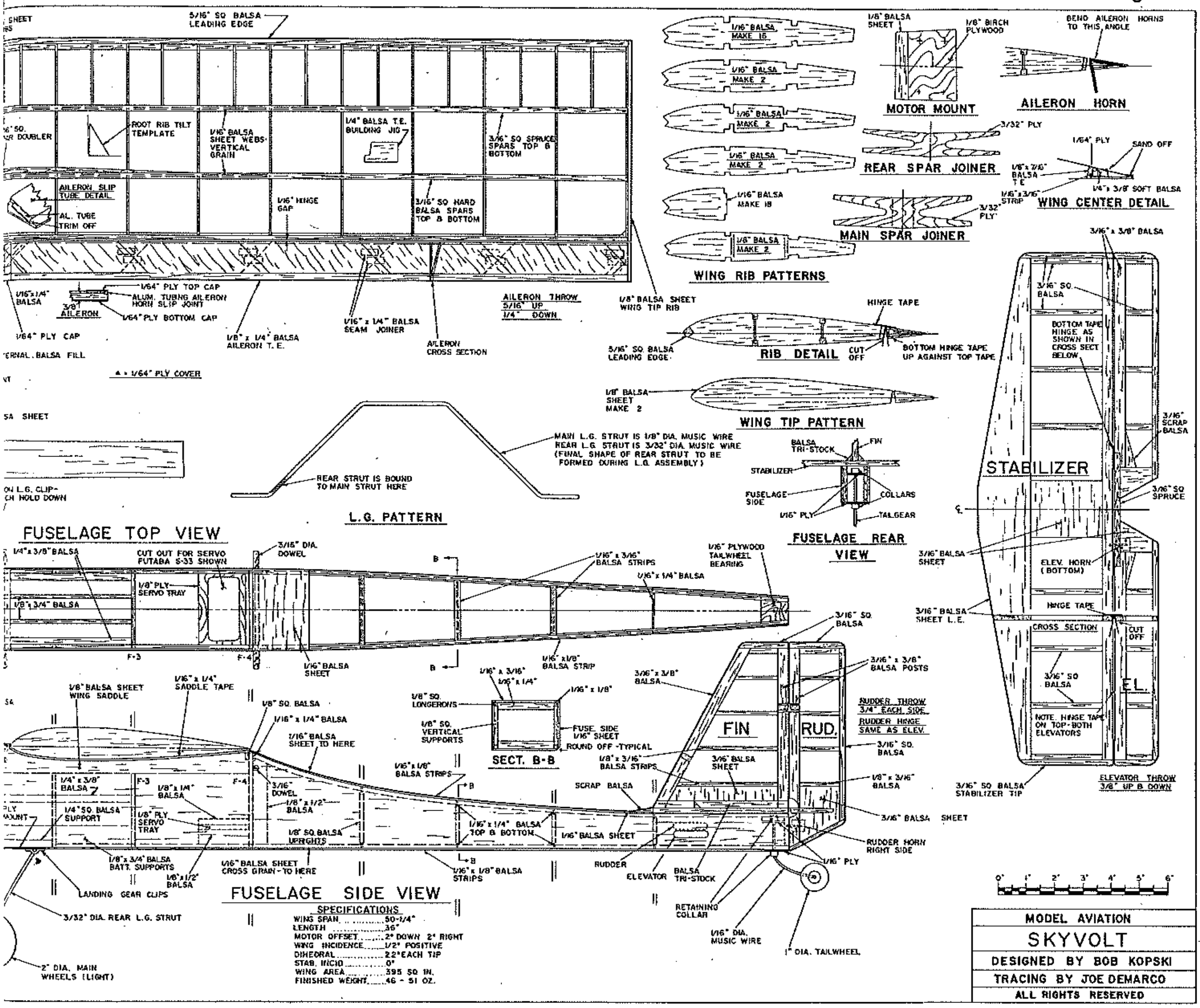
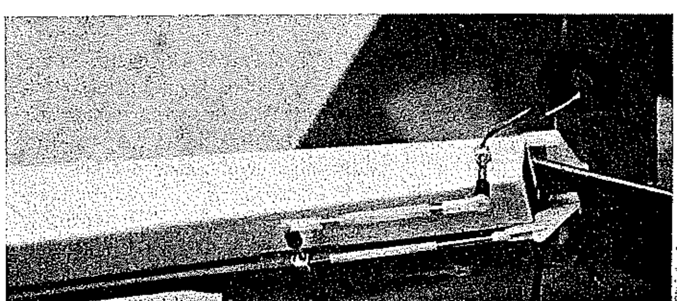


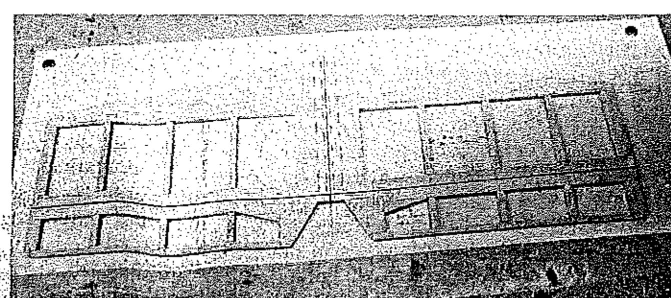

⅛-in.-thick strips and pieces, the undrilled ⅛-in. wing saddle doublers, and the ⅛-in. Lite Ply bottom nose doublers. Go over the entire structure with a sanding block to get rid of any bumps and irregularities.

Drill through the wing saddle doublers at the dowel locations using the holes in the side sheet as guides. Add the ¼-in.-sq. hard balsa pieces in the landing gear area, the ⅛ x ¼ and ⅛ x ⅜-in. strips in the hatch area, the front triangle fill stock, and the light balsa ¼ x ⅜-in. side battery guides as shown. Mark and cut out the pushrod exits. Block sand the edges of both sides to match.

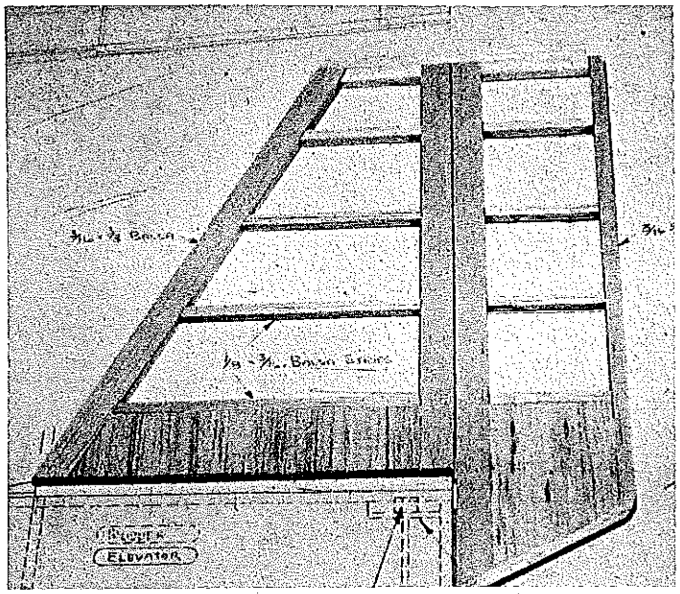
Cut out all the formers, servo tray, motor mount pieces, and landing gear plate from the materials indicated. If your servos are other than the S-33s shown, you'll need to modify the servo mounting plate accordingly. (Only microservos are recommended for this model.) Note that former F4 has some added balsa strip material in front and back at the top wing saddle V. The $\frac{1}{16}$ x ⅛-in. strip in back is depressed $\frac{1}{16}$ in. below the V to provide a rest for the fuselage top sheeting just aft of this former location.

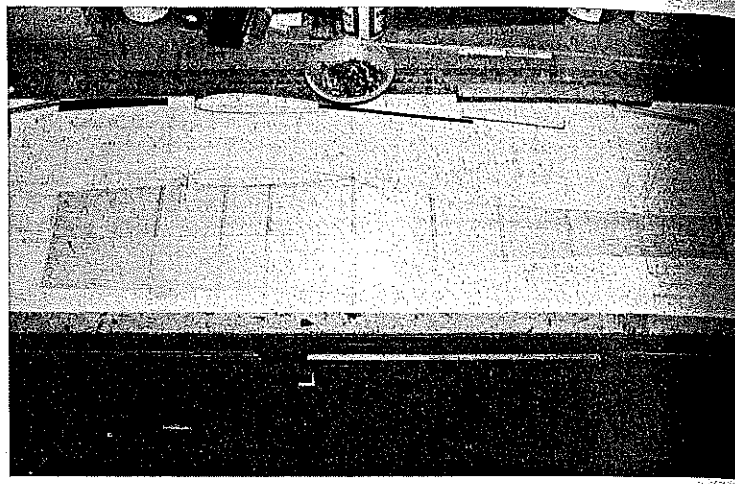
Begin boxing up the fuselage. The method described is one of several possible approaches. Position and glue in the formers on one side, using a small triangle to as-



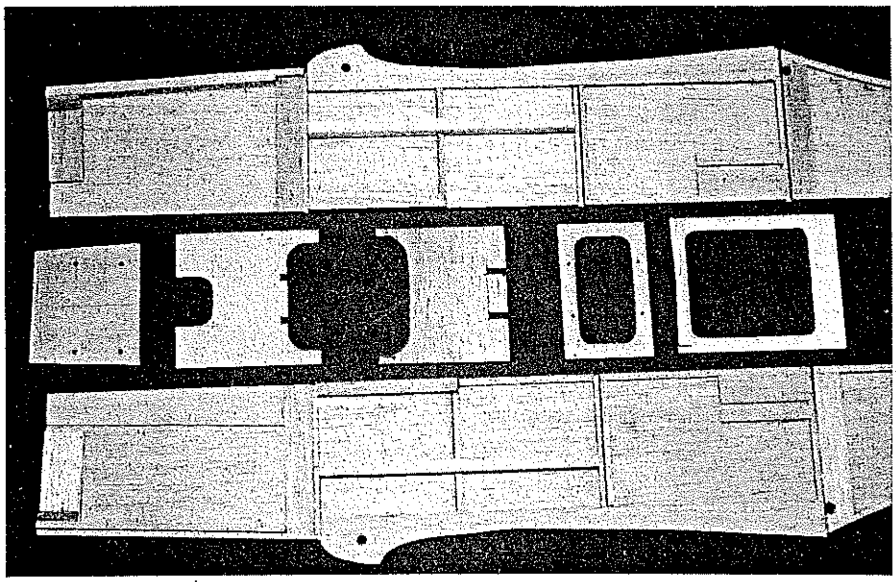


Left: Details of the tail wheel steering linkage. The pushrod goes directly to the rudder via a short Golden Rod psuedo turnbuckle. The wheel collar on the pushrod end "tee's off" the linkage with a 4-40 stud to bolt on the ball link. Another wheel collar, silver soldered to the tail wheel strut, has a similar stud/ball link arrangement. During final assembly just connect the two ball links as shown. Right: The finished stabilizer/elevator structure. Note the line marking to guide fin attachment after covering. Similar marks on the bottom will assist in attachment of the tail assembly to the fuselage. Make certain to remove any covering material that may have adhered between the line marks.

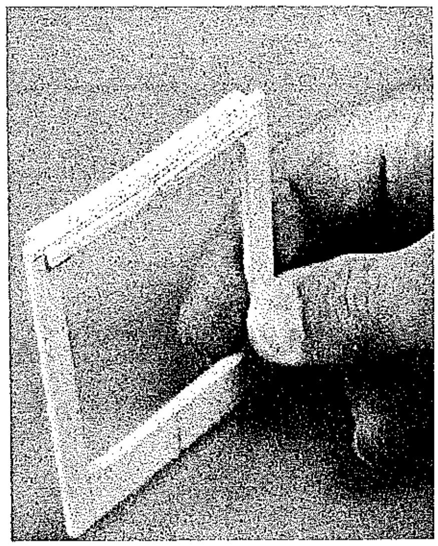




**Left: The completed fin and rudder framework. The triangle stock at each side of the bottom is yet to be added. Above: Initial steps in constructing the fuselage. The two side pieces, bottom-to-bottom, show location lines drawn in place. These lines make life a lot easier in positioning formers, accurate assembly, and structural alignment.**



**The finished fuselage sides and formers ready for assembly. The fuselage front bottom should also be shaped according to the plan profile before actual assembly is undertaken.**



**Details of the rearward side of F2, showing the 1/16 x 1/8-in. strip following the gentle V of the former top. This strip is set 1/16 in. below the former top. The strip on the front-facing side is 1/8-in. material. It provides more saddle area for the wing trailing edge to rest on.**

sure orthogonality. Bring the remaining side substructure into position against the formers, and clamp or rubberband as appropriate. When everything seems aligned, apply CyA (cyanoacrylate) in the appropriate places.

Install the 1/8 x 3/4-in. battery support strips between formers F2 and F3. These strips serve a dual function. First, they permit air scooped in under the motor mounting plate to pass through the lower cutout in former F2, flow up and among the battery cells, then pass over the top of former F3 and exit the rear opening of the fuselage. Second, they hold the battery pack upright in the fuselage to maintain a high center-of-gravity vertical location, which improves the execution of the roll maneuver.

With the battery support strips in place, block snad the fuselage bottom until flat, then install the 1/16 landing gear plate, gluing it well, and attach the bottom sheeting from former F2 to beyond F4 as shown.

Position the fuselage over the plan top view, and pin it securely. Use some scrap 1/16-thick pieces to block up the rear ends of the fuselage sides away from the building surface. Draw the sides together at the rear following the top view guideline.

Make the crosspieces. My favorite method is to cut a single strip of 1/16 x 1/2-in. balsa to length at each crosspiece location, then cut each of these in half lengthwise to make two 1/4-in.-wide crosspieces of equal length.

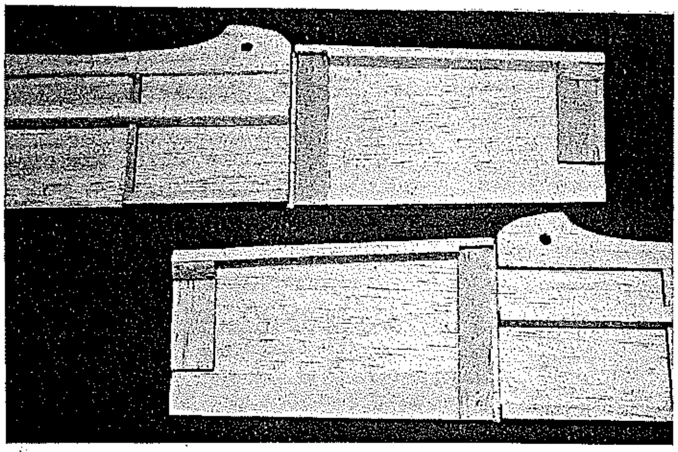
Install the crosspieces, top and bottom, in the locations shown. Remember to raise the bottom ones 1/16 in. Use a small triangle and clamps as necessary to assure fuselage squareness and integrity of assembly. Install the rearmost top ply tail wheel strut bearing plate as shown. Add the 1/16 top sheet and trailing edge stock at the stabilizer leading edge.

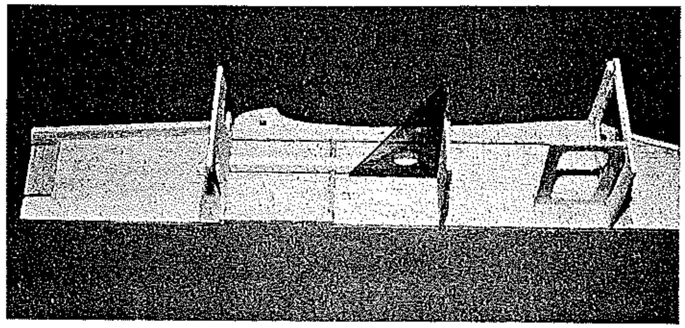
Add the top sheet just aft of F4, depressing it at F4 to form, when juxtaposed with the 1/16 x 1/8-in. strip previously placed on the former, a V shape, then blending it to a flat shape aft of this point. Add the top edge 1/16 x 1/8-in. longeron caps and the 1/16 x 3/16 crosspiece caps.

Lift the fuselage structure from the workbench, turn it over, and install the bottom tail wheel strut bearing plate. Add the bottom longeron and crosspiece caps. Notice how these balsa intersections form multisurfaced joints—an indication of exceptionally strong, light construction.

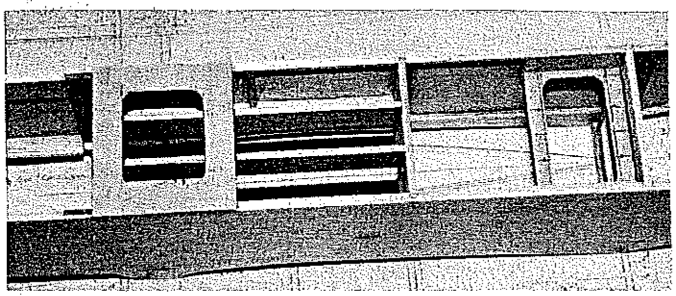
Make the rear hatch rest plate by adding the 1/8 x 1/2-in. balsa cross strip between the fuselage sides at the rear of the hatch opening and against F2 at the front. Install the balsa windshield using light, easy-to-form 1/16 A-grain sheet. Cut small notches, 1/16 wide and 1/8 in. deep, in the fuselage sides where the very bottom of the windshield will be inserted. Install the 1/8 x 3/16 fuselage crosspiece on top of the previously installed hatch rest and against the windshield front edge.

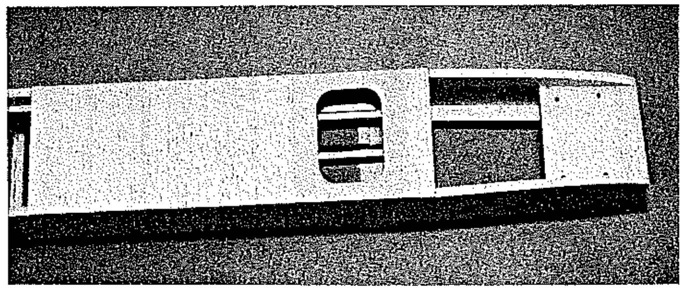
Trim 3/32 in. from the front edge of the right fuselage side. This sets up the nose to correspond with the two degrees of right



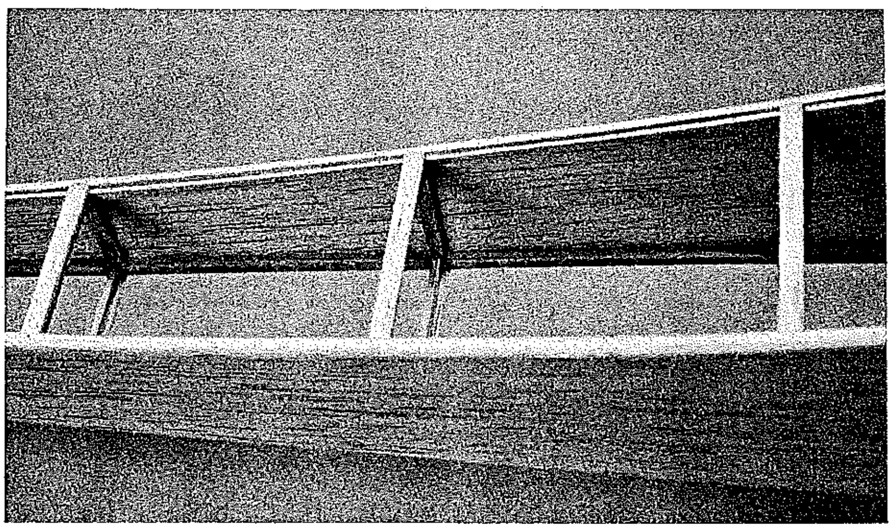


Left: Close-up view showing details of the fuselage side subassemblies from the nose back to former F2. Above: Fuselage begins to take shape. One way to assemble the fuselage is to install the formers on one side first. Be sure they are in proper position and square before installing the other side. Triangle ensures vertical alignment.

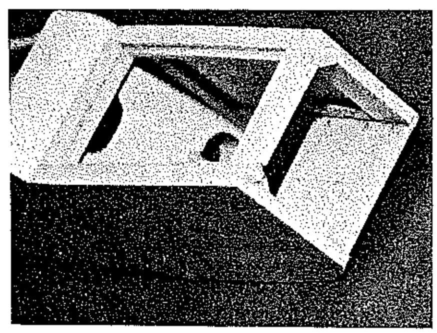




Left: A look at the upside-down fuselage during installation of the landing gear mounting plate. The servo tray has already been installed. Right: The fuselage sides have been pulled together at the nose and glued to the motor mount with a thin bead of CyA at the top and bottom.



A close-up view of all those fuselage sticks. Assembly is actually not as difficult as it sounds in the text. Multisurfaced joints are very strong. There's no need to sheet the top and bottom.



Details of the almost-finished fuselage nose section, ready for the nose block installation.

thrust as indicated.

Make up the appropriate V block to fit your particular motor, as shown on the plan. Loosely attach it to the motor mount plate with the proper amount of right thrust. Do this by spot gluing or using double-sticky tape. Minimal attachment allows easy removal and replacement, should you decide to change power systems at a later date. The motor clamps ensure secure location of the motor-holding V-blocks.

Pull the fuselage front sides together against the motor mounting plate with rubberbands or clamps. The latter should rest squarely on the top edges of the 1/8-in. Lite Ply bottom side doublers. Check out everything for alignment, then glue the motor plate in place.

Install the top 1/8 x 1/2-in. balsa front crosspiece, then the 1/8 x 3/4-in. topmost crosspiece. Block sand the very front of the fuselage, taking care to get all edges flat while preserving the side thrust dimension. Install the 1/4-in.-thick cross-laminated sheet balsa nose former F1.

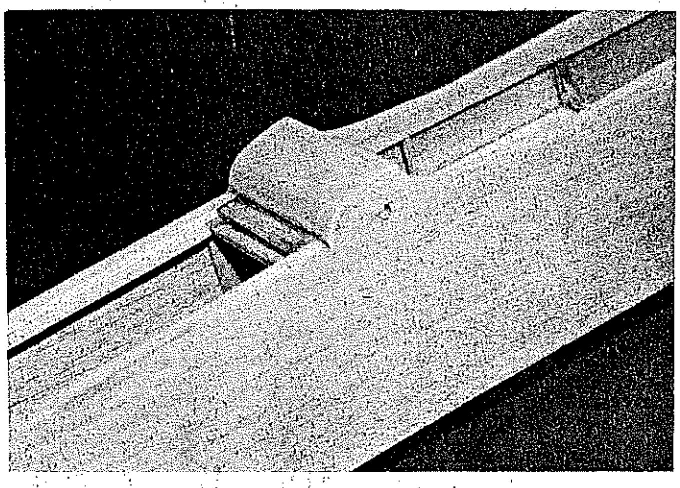
Complete the bottom fuselage sheeting in front of the landing gear plate. Note that the sheeting is continuous to a point slightly beyond the rear edge of the motor mount plate. Partial, narrow sheeting continues along the two lower fuselage edges well forward of this area, however, and is later sanded in to blend with the fuselage front.

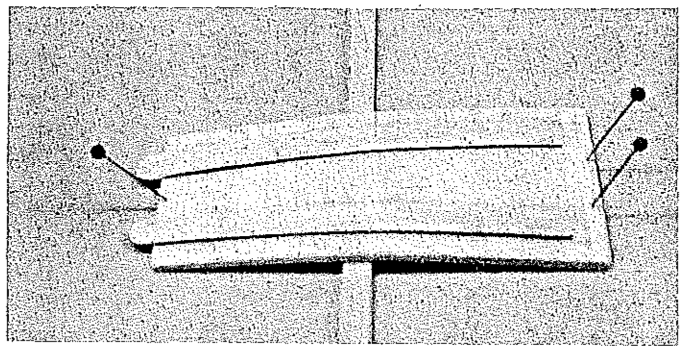
The simple hatch used in the Skyvolt has proven to be an easily made structure that functions very well at the field. Make the hatch from cross-grained, lightweight 1/8-in. balsa as shown, cutting and trimming it to fit neatly into the front top fuselage hatch recess. When it's just the right size and shape, bend it, upside-down, over a scrap 1/8-in. strip as shown in one of the photos.

Attach the two 1/32 ply strips as shown with CyA, making sure they extend about 3/16 past the front edge of the balsa hatch. Like projecting toes, these strips tuck underneath the uppermost forward fuselage 1/8-in. balsa plate. Note that the strips are also cut back from the rear edge of the hatch to clear the rear hatch rest plate. The rear of the hatch is held down in the hatch recess with a nylon landing gear strap which functions as a catch. The bowed hatch pops up when the catch is moved clear.

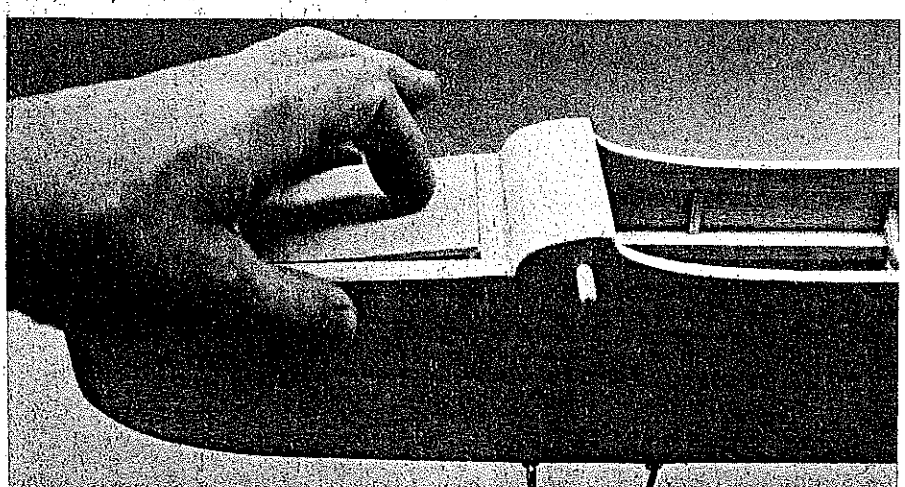
Give the completed fuselage a thorough sanding. Take the time to round all the corner edges, the nose former, etc, as generously as possible. You'll be laying the foundation for a very eye-appealing model when covered.

Assemble the landing gear, and trial fit it in place on the ply mounting plate. Use 3/8-in. No. 2 sheet metal screws in 1/16 pilot holes to secure the nylon landing gear straps. Be certain to drill the holes 3/16 in. in-

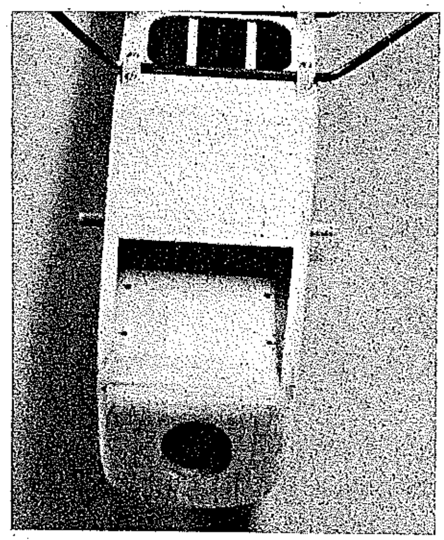




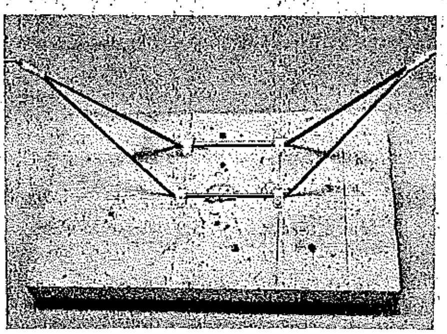
Left: Close-up of the windshield area. The hatch cover recess is visible. Follow the text and this photo to fashion yours the same way. Above: The simple but functional hatch cover. Pin cross-grained 1/8-in. balsa sheet over a 1/8 x 1/4-in. strip. Pin down the ends of the sheet. Add 1/32 x 3/8-in.-wide ply strips. CyA in position. Note extensions of the strips in front and cutbacks at the back of the hatch.



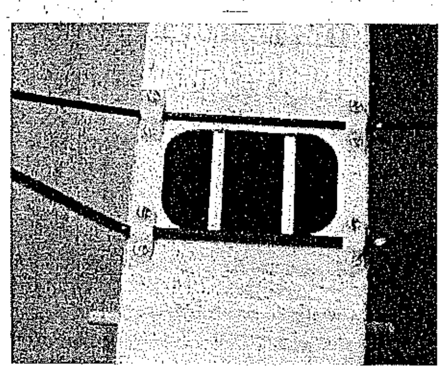
This photo shows how the springy hatch cover is tensioned in place. With the plastic landing gear hold downs (yet to be installed), it makes for a simple and positive hatch installation.



A look at the air scoop structure formed by the bottom of the motor mounting plate. The bottom sheeting is faired in to the curved fuselage sides. The nose block is fashioned by laminating two pieces of 1/8-in. balsa cross-grain and then sanding it to final shape.



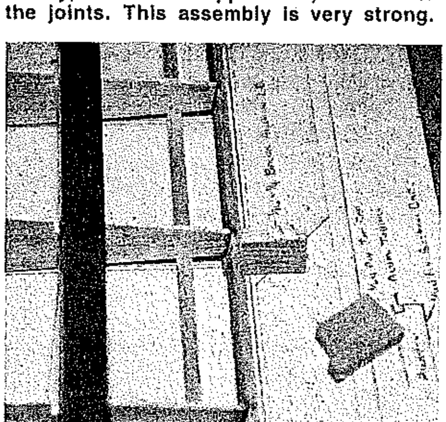
The landing gear is made up from 1/8-in.-dia. music wire. Locate the straps in the same dimensional relationship on the building block as on the fuselage. The front wire should be vertical. Bring up the rear strut, bend as necessary, bind with copper wire, and solder the joints. This assembly is very strong.



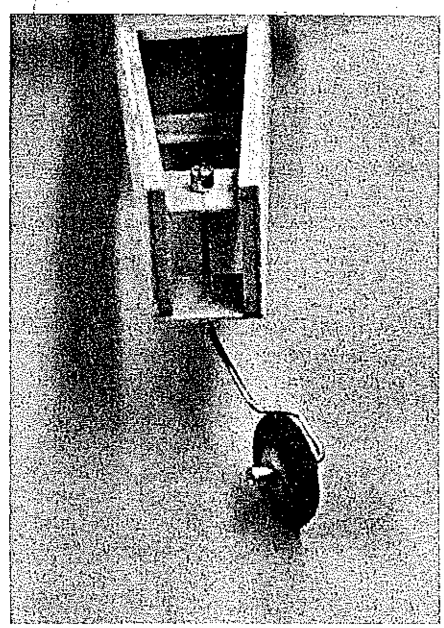
Trial fitting the landing gear. Use 1/8-in. gear straps on the front strut and 3/32-in on the rear struts. Use #2 x 3/8-in. sheet metal screws set 3/16 in. inside the fuselage surface. Epoxy fiberglass matting over the gear mounting plate. Cut out the lightening hole when the epoxy is set, and before final assembly of the gear. The visible structure inside the fuselage is the battery support rails.

ward of the outside fuselage dimensions so that they meet the center of the 1/4-in. hard balsa strips underneath the ply plate.

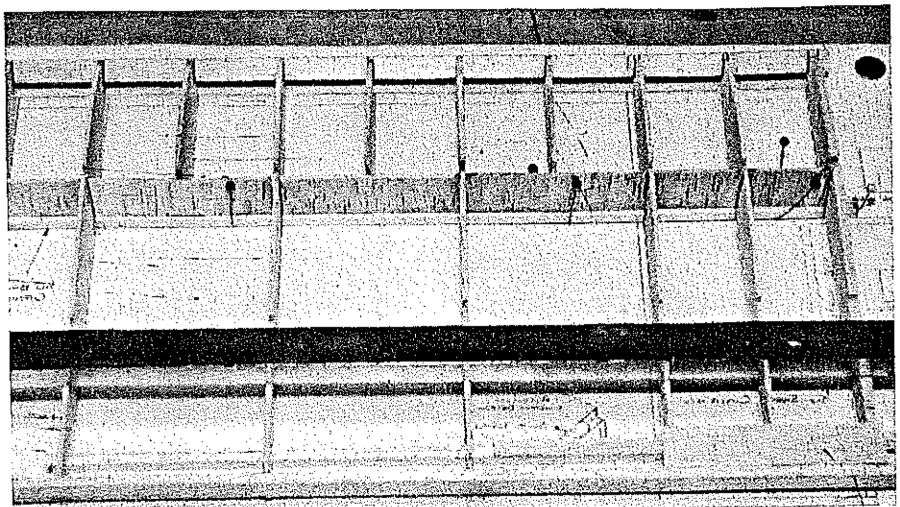
Bend and install the tail strut in centered 1/16 bearing holes in the top and bottom ply plates as shown.



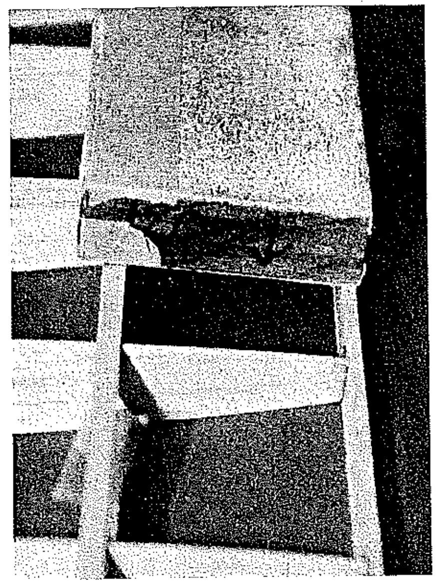
The rib-to-trailing-edge assembly. Use 3/16-in. stock under the ribs and a piece of 1/2-in.-sq. steel key stock to weight down the structure as it's assembled. The pictured TE jigs (shown on the plans) help in supporting the trailing edge as it's CyA'd to the ribs.



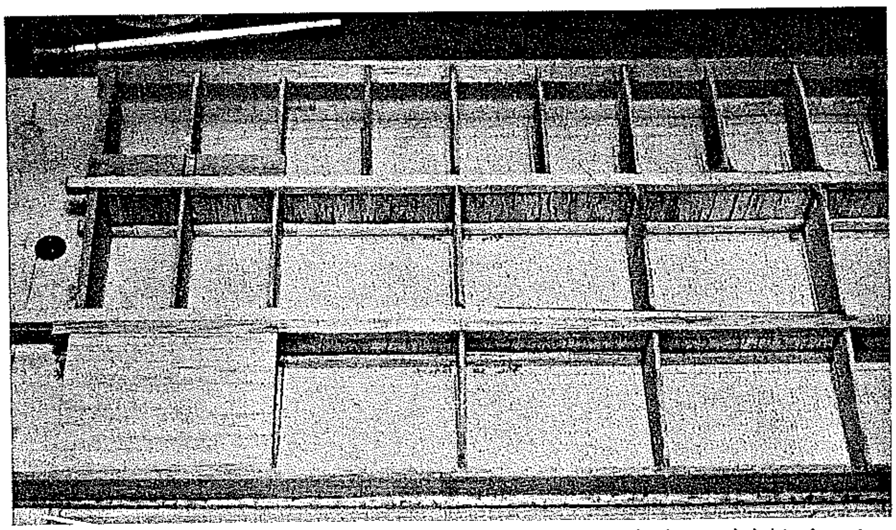
Details of the tail wheel strut assembly. Wheel collars on the top and bottom keep the strut in place. The top collar setscrew can be made accessible either through the rear opening or through a notch that may be cut in the fuselage side under the stabilizer.



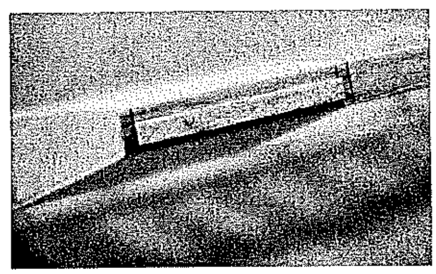
**The main spar webs being installed on the left wing. The 1/2-in.-sq. steel key stock bar weights down the structure against temporary 3/16-in. balsa strips under the ribs to negate warping.**



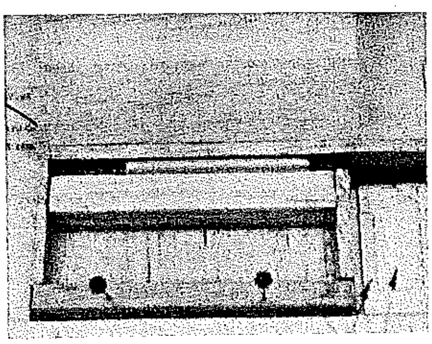
**The bottom trailing edge sanding operation as described in the text. A 1/16 x 3/16-in. temporary balsa strip is double-sticky-taped over the bottom rear spar. The sanding block has a tape cover where it rides on this strip during sanding. This simple step raises the sanding block high enough to be clear of the ribs while fairing in the trailing edge.**



**Details of the wing structure during assembly. The major part of the internal right wing structure is completed in this photo. Note that the tapered spruce rear spar doubler is in place.**



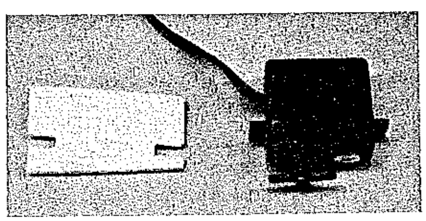
**This is a close-up shot of the 1/16 x 3/16-in. strip that is the initial step in building the rear wing center structure. Its location is critical, so position as accurately as possible.**



**Assembly of the rear center structure is underway. A piece of 1/8-in. tubing is placed temporarily here to establish the location of the 1/4 x 3/16-in. strip behind it. The tubing rests on the previously installed 1/16 x 3/16-in. strip on the outside of the trailing edge strip.**

Trial mount the servos, then make the rudder and elevator pushrods. Remove all trial-fitted hardware, and put a drop of thin CyA in the screw holes to harden the threads. Final sand the fuselage, and set it aside for covering. At this point the structure should weigh very nearly 3 1/2 oz.

**The ailerons** incorporate some unusual construction techniques that deserve some detailing here. I like to build them before constructing the wings. They're fun to assemble.

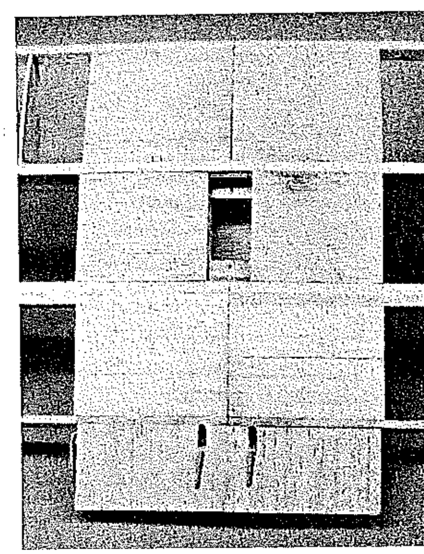


**Wing center short rib with notches for the servo rails. Use actual servo as a notch guide. Locate servo deep in wing to allow for motor battery clearance with wing in place.**

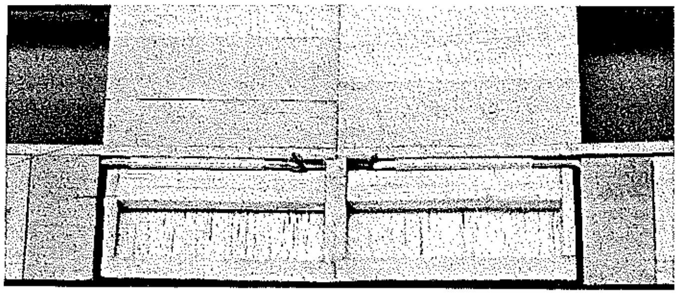
Since these ailerons are relatively large in area, they'd be heavy if built out of solid chunks of wood the conventional way. I gained the needed lightness by making them hollow. The ailerons are designed to be very strong and twist resistant as well.

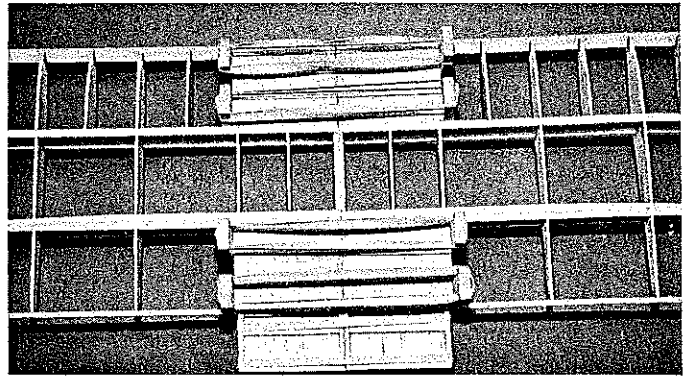
The ailerons require less than two full sheets of 1/16 x 3 x 36-in. balsa (I prefer C-grain sheets). Alternatively, you can use 4-in.-wide stock. At any rate, choose the *lightest* wood you can find.

Study the photos well. Begin by cutting a Lite Ply template 1 3/32 wide and about 6 in. long. Cut one end of the balsa sheets at a 45° angle, and then proceed to slice off pieces using the template and a stop block pinned to the work surface as shown. Cut off the necessary number of pieces so that, when laid end to end, the total length will be enough to make *one* surface (the bottom) of *both* ailerons.

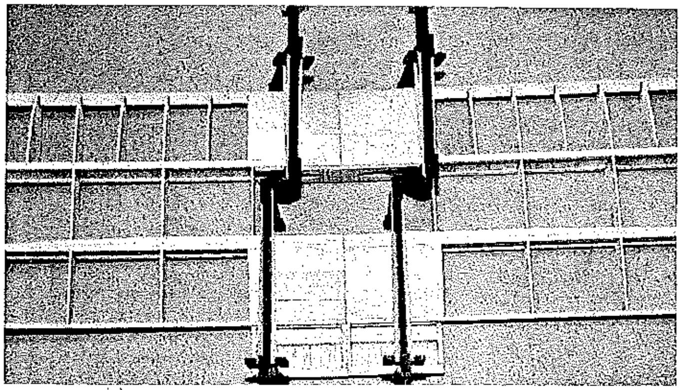


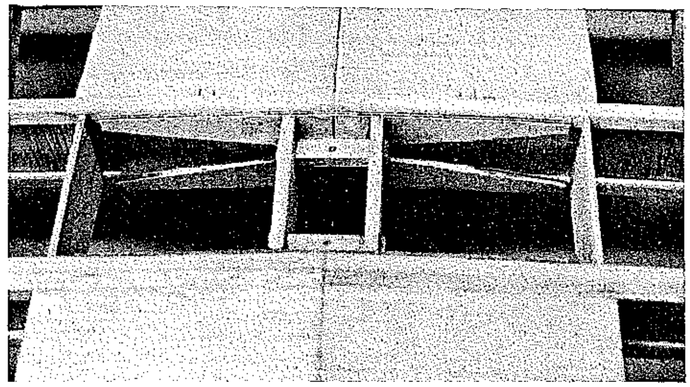
**This is the bottom view of the completed wing center section. Note the aileron servo cutout and the installed aileron torque rods.**



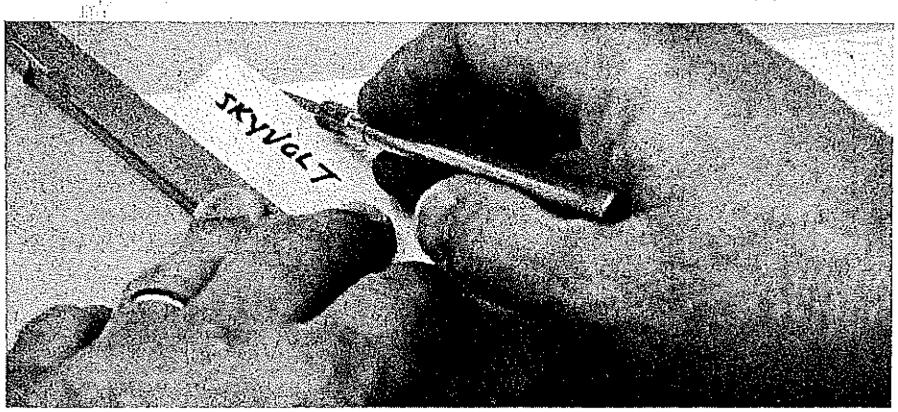


Left: The aileron torque rods installed in their 1/8-in.-O.D. aluminum bearings. Position these tubes carefully, and temporarily tape the ailerons in place for correct alignment. Right: The wings being joined together with epoxy at the dihedral joint. Use rubberbands while the epoxy sets.

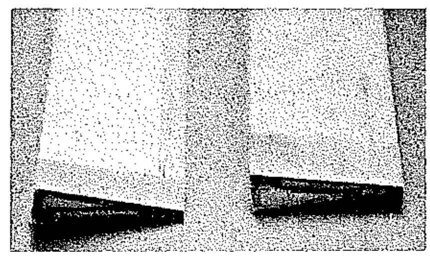




Left: The plywood wing dihedral joiner being epoxied in place. Clamp firmly in place until the epoxy sets. Right: Here is the dihedral bracing and servo box structure as detailed in the text. There is also a similar 3/32-in. plywood dihedral brace on the inside surface of the rear spar.




A template for accurately slicing the aileron sheeting at 45°. Butt the sheeting against the block, and let the template guide the knife. Top sheeting is wider than the bottom. See text.



Root-end shot of the completed ailerons with the slip tubes in place. Note the 1/64-in. plywood reinforcements at top and bottom.

Since the top surfaces must be a little wider than the bottoms, they're made a little differently. Add a 1/16 wood or wire spacer between the template and the stop block when cutting the second sheet. This results in the 1 5/32-wide sheets which will be used on the aileron top surfaces.

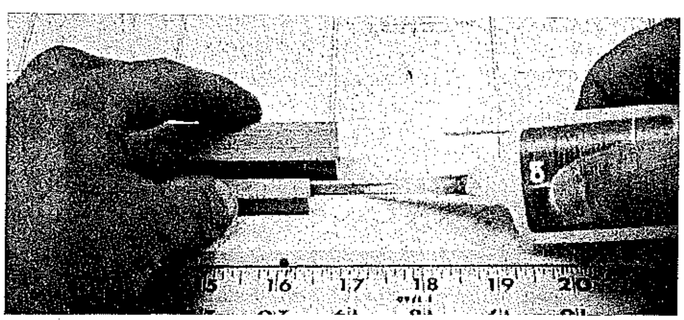
Pin a metal straightedge in place; then position the 1/8 x 1/4-in. balsa aileron trailing edge (TE) cap against the straightedge, and pin the strip in place every four inches or so. Be careful to note the grain direction for each aileron. Begin by placing the *narrower* bottom balsa sheets (the ones you cut first) against the trailing edge stock as pictured.

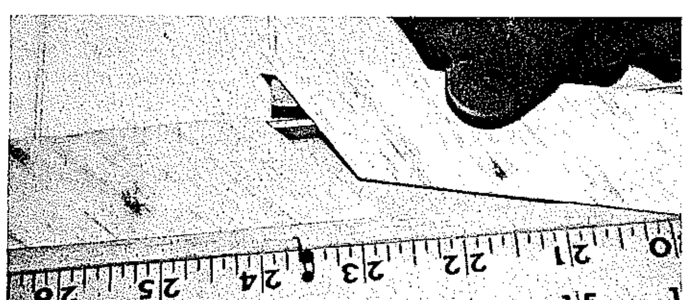
Sand as needed for a good fit all around. Using a piece of wood, hold the small sheets tightly down against the building surface one at a time, and run thin CyA along the sheet/TE-strip joint.

Don't glue the mating edges of the sheets together; this generally makes a CyA mess underneath! Instead, use short lengths of 1/16 x 1/4-in. stock and thick CyA as shown to connect the sheets to each other. Be sure these joiners are located *off* the fore/aft center as shown, so that they won't interfere with similar pieces to be installed underneath the top sheets later.

If the front sheet leading edges are ragged along the aileron length, remove this subassembly from the board and carefully sand them smooth with a long sanding block. Af-

*Continued on page 135*





Left: Attaching the aileron leading edge 1/16 x 1/4-in. hardwood strip. The wood blocks hold the strip vertical while CyA is applied. Move along entire length of aileron in this manner, being careful not to glue the blocks. Right: Top aileron sheeting being installed. Note short 1/16 x 3/16-in. balsa toe on sheet being installed. The sheeting goes against the trailing edge and on top of the leading edge. Note that the top and bottom sheeting is cross-grained. Use thick CyA on the balsa toes and leading edge and thin CyA where the sheeting attaches to the trailing edge.