#169

Dee B. Mathews

Dennyplane

Text and Photos by Larry Kruse

HERE'S A CHANCE for you gas model fans to see the job that has stolen the show in the gas model field.... You'll admire the graceful lines, the smart appearance, the flyability, the speed and the power of the 'Denny Jr.' You will know why our friends are so enthusiastic in their praise....

So read the splashy full-page ad which appeared in the May 1937 *MAN*, complete with the grinning visage of Reginald Denny and a full-length photo of a youthful Jane Withers, long before she was thought of selling soap on T.V.

And in truth it was quite a plane for its time. Although it retailed for an exorbitant ten dollars, it included a spun cowl, a finished propeller, cut-out ribs, wheels, motor mount, and all necessary cement, silk, and dope—all the earmarks of a deluxe kit. You could even get it with a Gwin Aero or Mighty Midget motor for a mere twenty-five bucks, if your Brown Jr. was on its last legs. And while it compared favorably with the best-forgotten Selley-Tex series and the GHQ Sportster, it was destined for obscurity when placed along side Megow's Quaker Flash and Berkeley's Super Buccaneer, two of its better-known competitors.

It is, however, a generously proportioned craft with pleasing semi-scale lines, not entirely typical of planes of that era—certainly worthy of resurrection for RC.

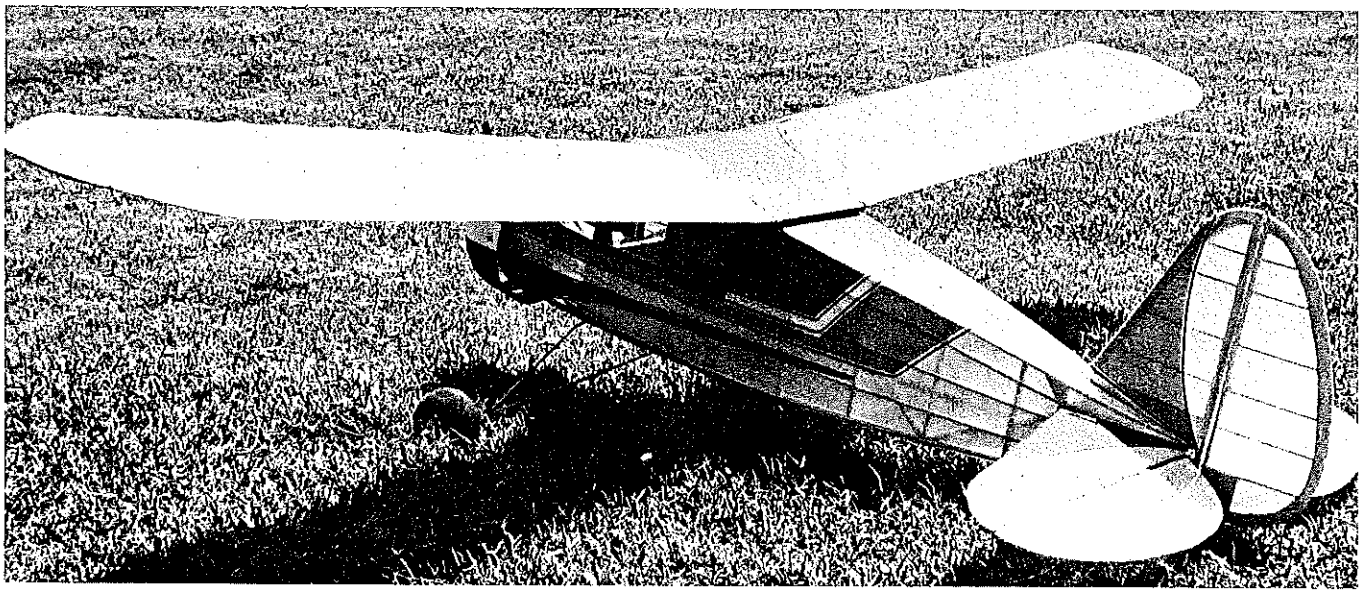
Construction

The first step in construction is to lay out all sheet parts from the plans. This task is best accomplished by tracing patterns from the plans, spraying the wood with 3M Sprayment 77, and attaching the patterns. After the parts are cut out, the paper patterns can then be peeled off and discarded.

Lay out both fuselage sides of 3/16" spruce, one on top the other, using Saran Wrap underneath and between the two layers to prevent them sticking together. Let the two sides dry thoroughly overnight, then place the sides upside down—wing mount against the building board. Using a triangle or carpenter's square, make sure the two halves are vertical to the building surface and epoxy in bulkheads B and C. Add the two front bulkheads NB1 and NT1 by cracking the longerons and pulling the fuselage front together to install bulkhead A. Masking tape and clothes pins work rather well in keeping everything in a bunch. The cabin bottom (now the top since everything is upside down) is of 1/16" ply and finishes the initial fuselage construction stage.

Scribe a straight line as a reference line down the center of the fuselage on the building board itself. Now pull the rear of the fuselage together over the reference line and epoxy it inserting the necessary vertical members. Re-align and re-check everything with the triangle or square and install the remaining bottom bulkheads and Sig landing gear blocks. Bend the gear out of 3/32" music wire and strap it down with Sig landing gear clamps.

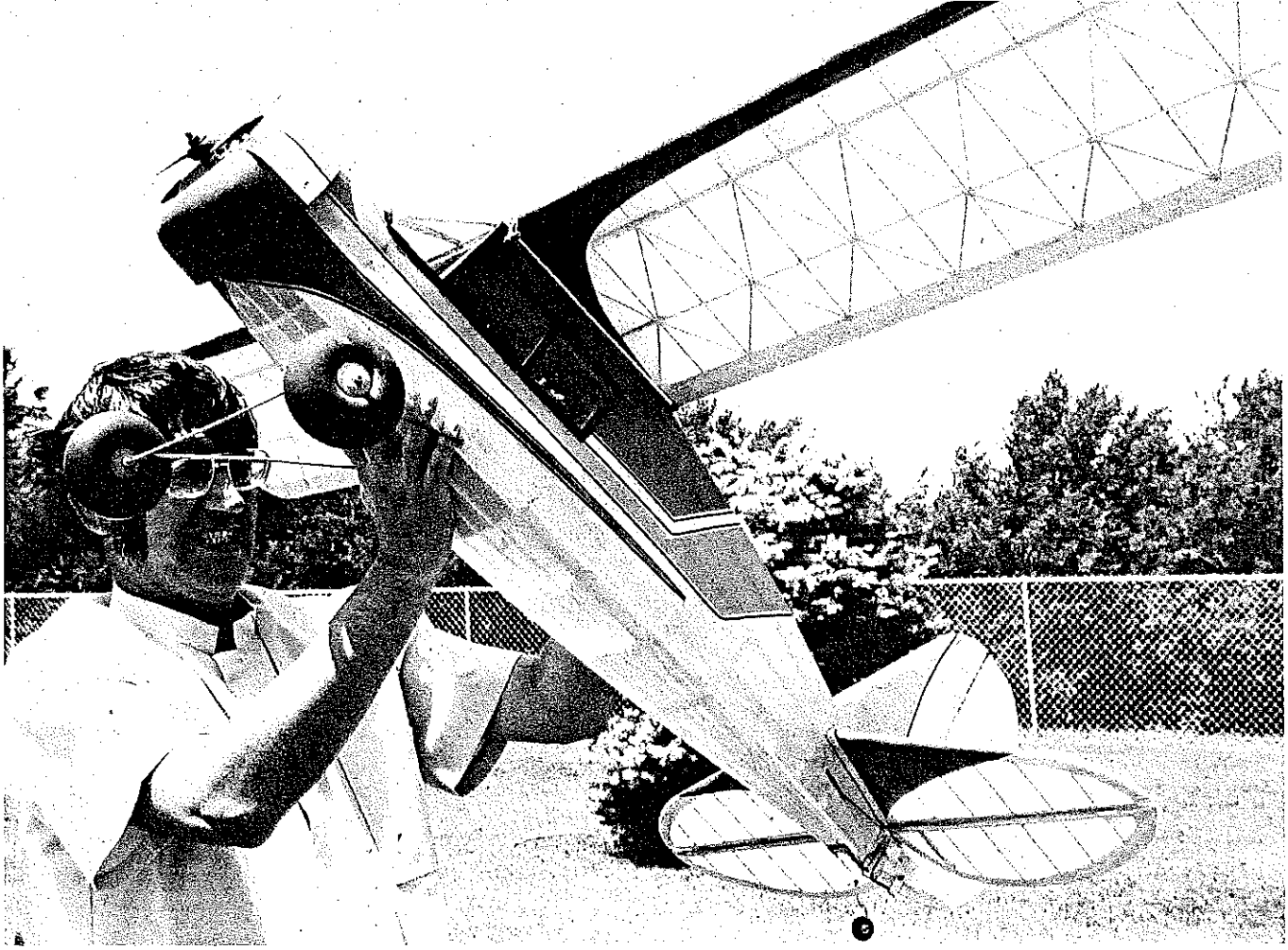
The fuselage framework is completed by adding top and bottom stringers. Place the stringers over the bulkheads, hold them in place with tape, and mark the locations.



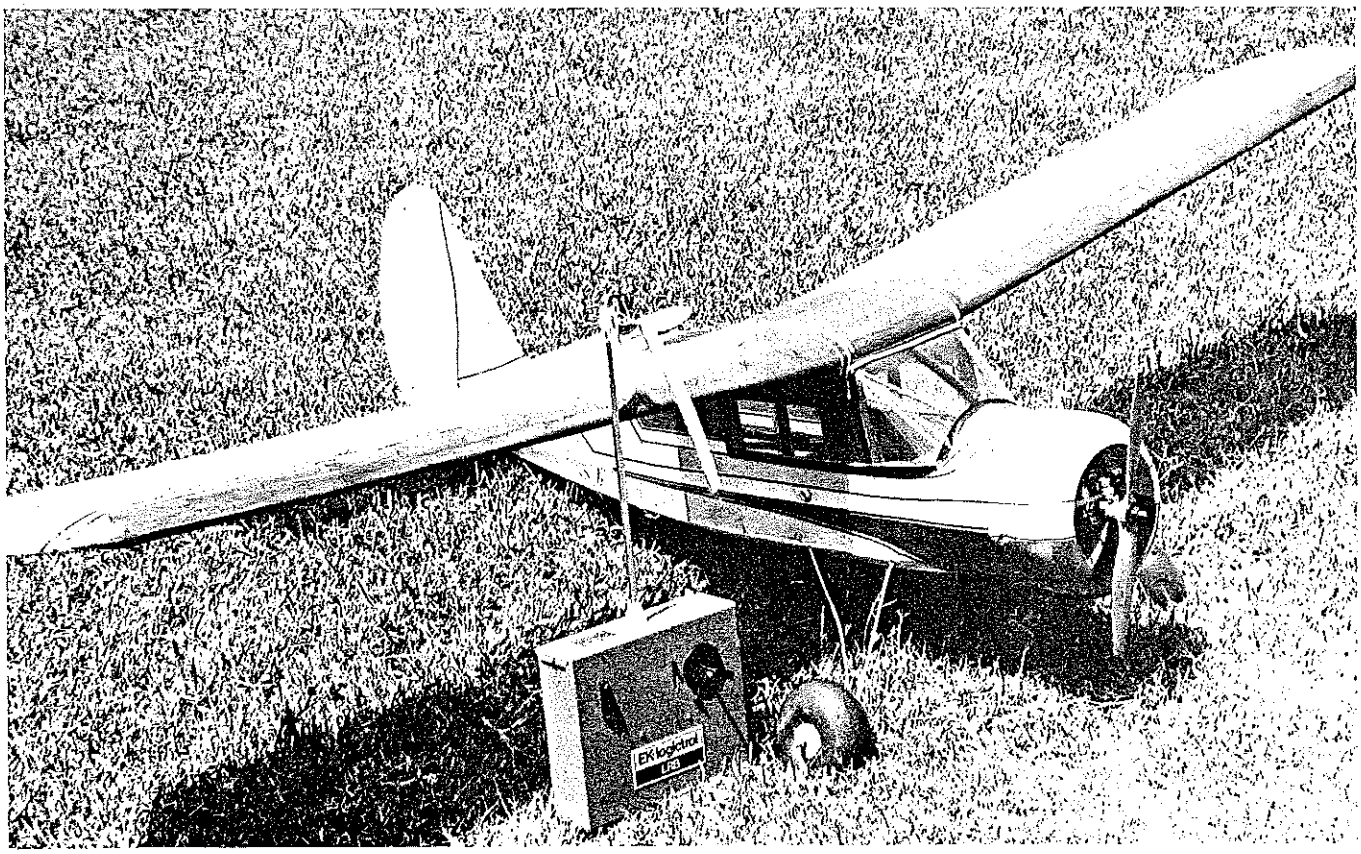
Something about a rear-quarter view that brings out the realism in any plane, real or a model. The Dennyplane looks a lot like a full-scale cabin job of the Twenties. The kit price was antique, too—ten bucks, including prop, wheels, spun cowl, all cement, dope, and silk!

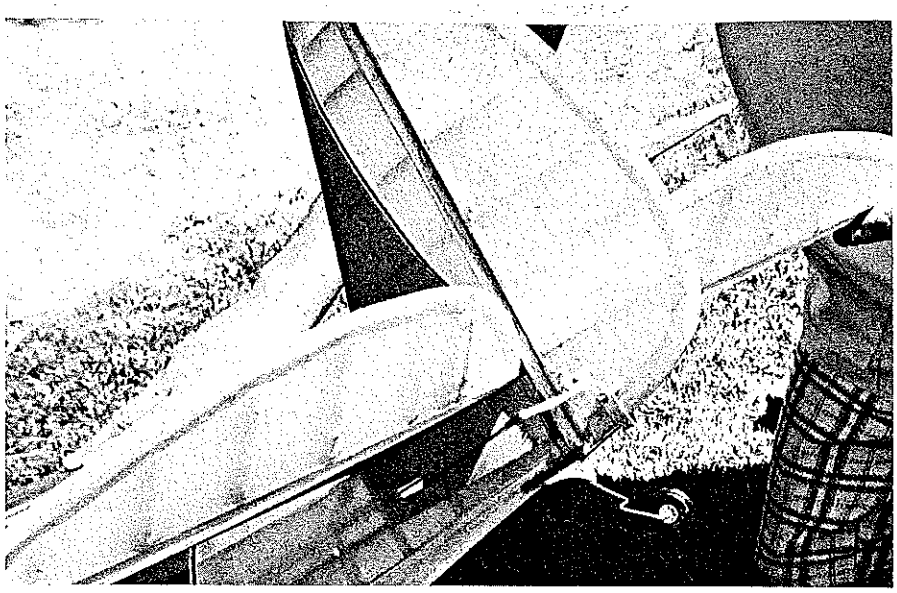
Opposite page, top: Here's "Doc" Mathews himself with a couple of handsful of airplane. He says a .19 is about ideal—can you imagine?

Opposite page, right: Round engines are always fascinating, but there's always that cowl. In this case we lucked out. The cowl coincides with VK's ABS plastic Nieuport Cowl and it is available from that source. No telling, tho, what can, pot, pan or container may work out.



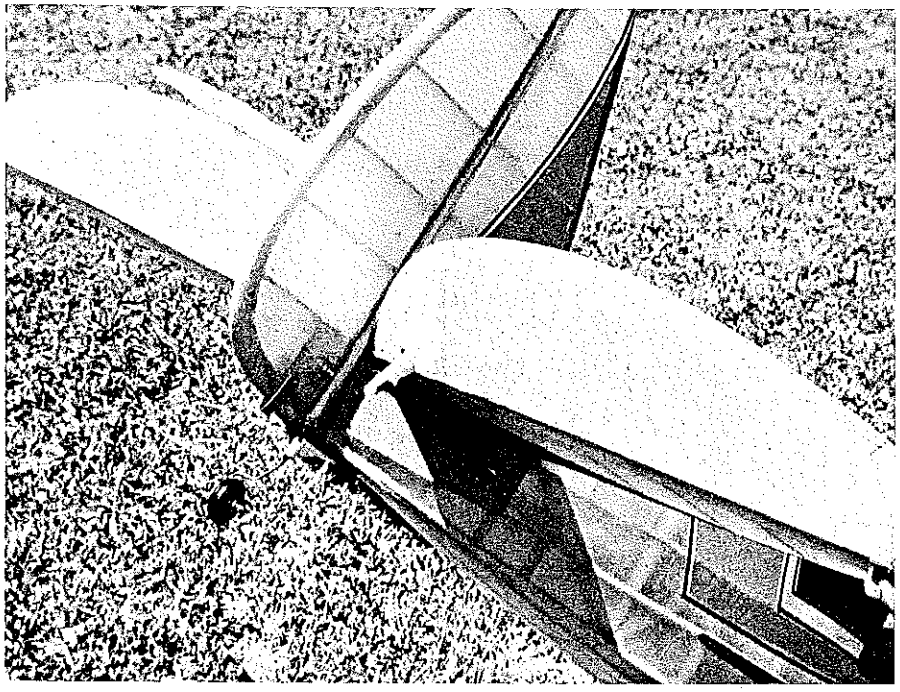
Glamourous Antique makes a stable RC sport job on .15 to .25 power.





Right: Typical tail-dragger linkage. Pushrod goes to outer hole of long rudder horn; rudder movement swings tail wheel axle extension to provide a steerable tail wheel action. Author's model was wet-covered with silk—he wished to be authentic. Or you can go Monokote, etc.

Below: Those flippers may seem huge but we note that elevator pushrod is in one hole from the end. Plane is stable enough to be used for a trainer. It's surely a great Sunday sport job.



Now notch the bulkheads to fit. Run the first stringer to match the centerline, then the others can follow the fuselage contours. This method gives much straighter longerons than pre-notching the bulkheads. The front top and side stringers are ⅛ × ¼" balsa, the bottom is ⅛" sq. spruce. After the entire assembly is dry, it can be sanded to contour.

The cowling is a fortunate accident. In all probability, one of the reasons the Dennyplane has not been a particular favorite over the years has been the cowl and the difficulty of reproducing it. However, the ABS plastic Nieuport cowling from VK Models is exactly right and is available at nominal cost from VK. It is held in place by four brackets, as noted on the plan, tapped for 4-40 bolts.

Trexler G-II wheels available from Sig and a Fox 50203 motor mount are the remaining pieces of hardware needed to complete the fuselage.

Horizontal and vertical tail surfaces are built by cutting outline pieces of ¼" hard balsa. The ¼" outlines are shimmed ⅛" and all surfaces are built flat on the plans. All ribs and posts are sanded to an airfoil section blending into the ¼" trailing-edge outlines. Careful sanding in the direction of the grain should minimize breakage. Add the stab and rudder hinges before preparing the surfaces for covering.

Start the wing by notching the TE and pinning it to the building board. Position the bottom spars and notch the leading edge. Ribs are glued in place next; tilt the ribs at the dihedral break to match the necessary dihedral. Wing tips should be placed over the bottom spars with top spars tapered on the bottom side and pulled onto the tips. Pleasing tip contours can be obtained by filling the top area with scrap balsa and sanding to shape.

The dihedral angle is obtained by pinning down the center section and joining both left and right halves to it with epoxy. Each tip is blocked up 4". After the epoxy is cured, all dihedral braces should be added, along with the 1/16" music wire to keep the trailing edge from being notched by the wing hold-down rubberbands. The wing is completed by sheeting the center and sanding everything smooth in preparation for covering.

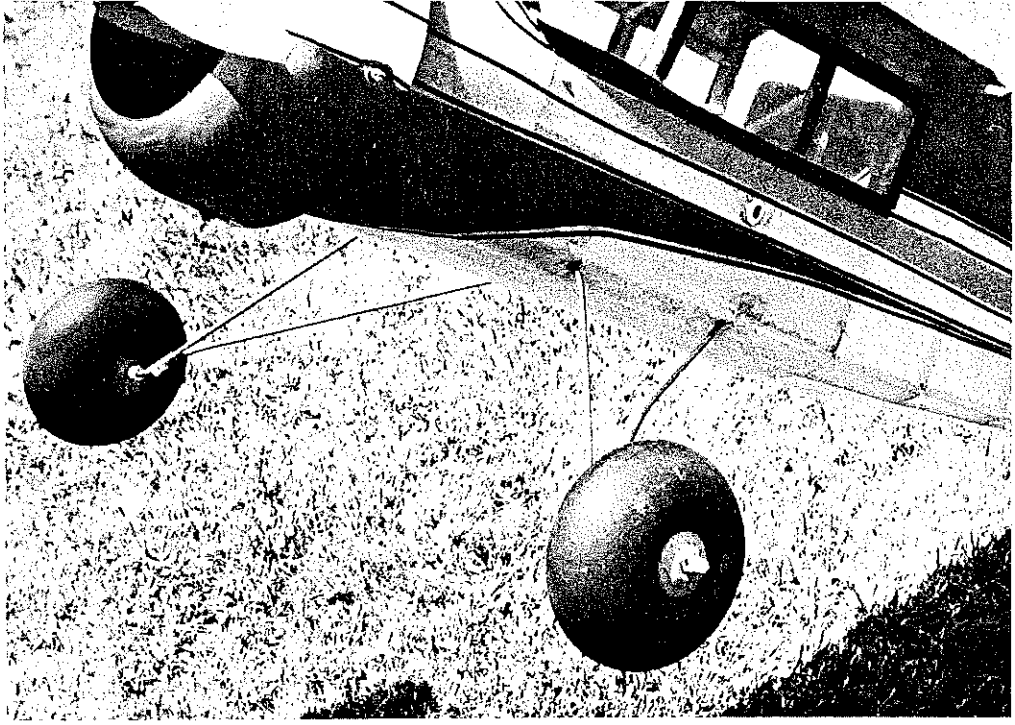
Covering and Finishing

If you want to go the easy way as far as covering is concerned, the shiny Mylar stuff is the best direction. However, if authenticity is your thing, get out the silk. The prototype was wet-covered with silk after three coats of sanding sealer had been applied to the framework. Now brace yourself. After the silk dried, the entire plane was "painted" with a coat of Knox unflavored gelatin, mixed according to package direction. Such treatment turned the whole project into a very large prune, but after it dried the wrinkles disappeared and the silk weave was filled.

The gelatin trick saves a considerable amount of dope (and weight) and also stops the annoying dope run-throughs that give you a "striped" silk finish even with numerous coats of clear.

The tail surfaces should be covered prior to assembly and then set together after the initial coat of gelatin is applied. Additional coats of clear can now be brushed or sprayed on until the finish is slick, shiny and fuel-proof. Celluloid windows can be carefully glued in place after the dope is dry. A neat trick is to use black vinyl tape cut to 3/16" width to outline the windows and cover the windshield joints.

Many options are available when it comes to mounting the RC gear. The fuselage is nothing, if not cavernous. One thing to especially watch, though, is that the gear is mounted *behind* the CG since the plane with its short tail moment tends to build



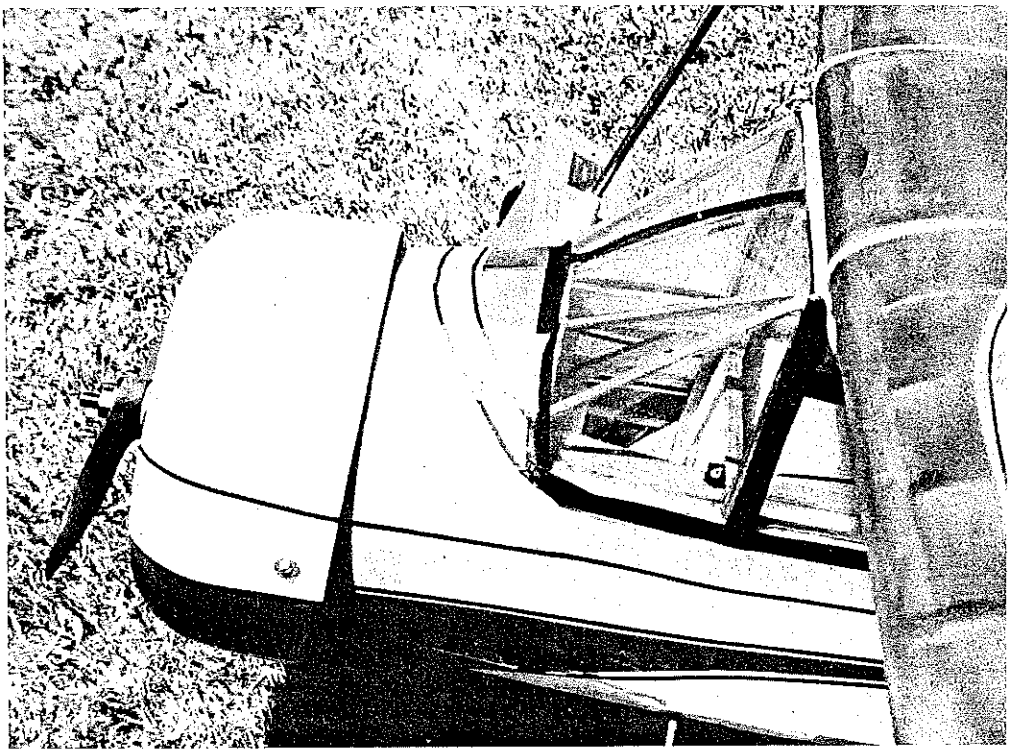
The landing gear is typical old-style for free flight of the Thirties—the Trexler airwheels were a big deal in the "good old days." In the picture, front struts were bolted to the cabin bulkhead, but plans show simpler arrangement using two hardwood mounting blocks running across fuselage. Strap-on fittings used. For bumpier landings, we'd suggest that 1/8 music wire be substituted for the 3/32 on the plan.

nose heavy. Plan the radio installation to allow for that tendency. Large Sig control horns and Nyrods make up the auxiliary control devices. Although the surfaces are huge, the plane flies slowly and is not particularly sensitive to over-control.

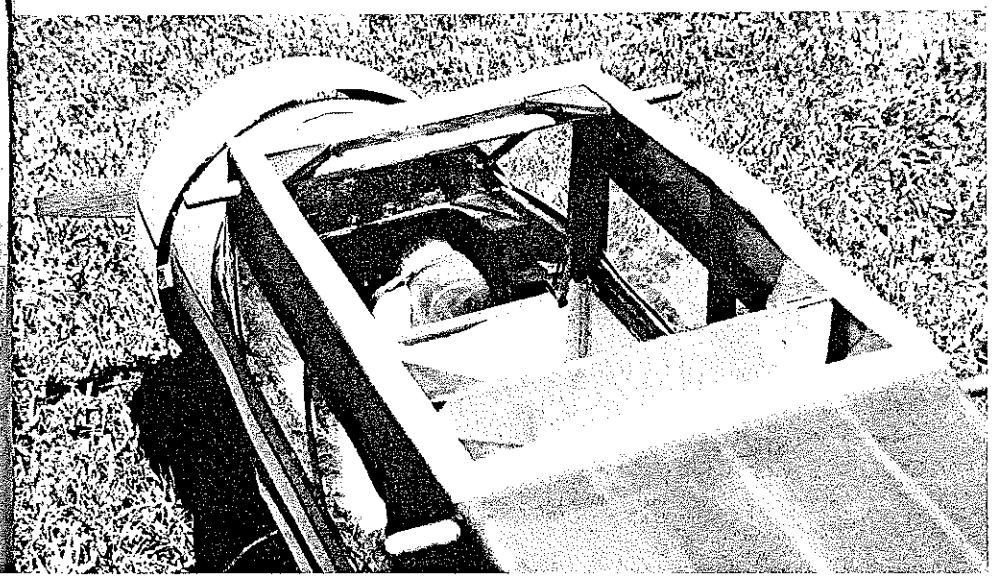
Flying

Motor control is not really needed, but it is handy to be able to shut the thing down when you need to do so. A .25 is plenty of power (verging on excess) and a .19 would work as well. If you built lightly, a .15 might even be sufficient. If you don't use throttle control, two ounces of fuel will be about right. The tank can be mounted in a hole cut through the bulkheads, a saddle mount ahead of the firewall, or a scrap plywood mount installed just in back of the firewall.

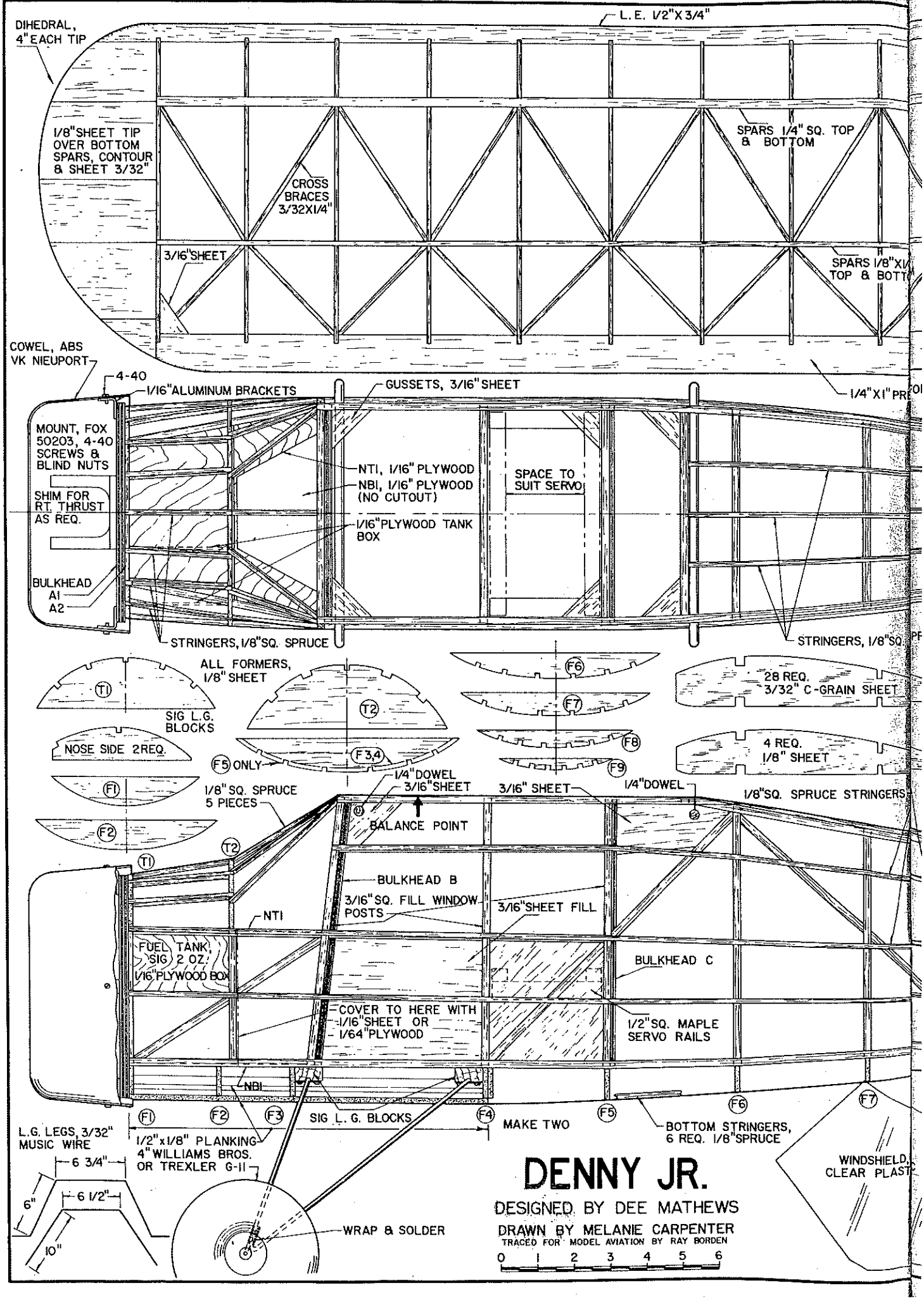
The Dennyplane is mostly a free-flight model with radio assist. It is stable enough to be used as an RC trainer or sport model for the Sunday flier. Whatever its use, it's an interesting link with the past and will prove a real conversation piece on the flying field. As the original ad suggested you might even find out "...why our friends are so enthusiastic in their praise."

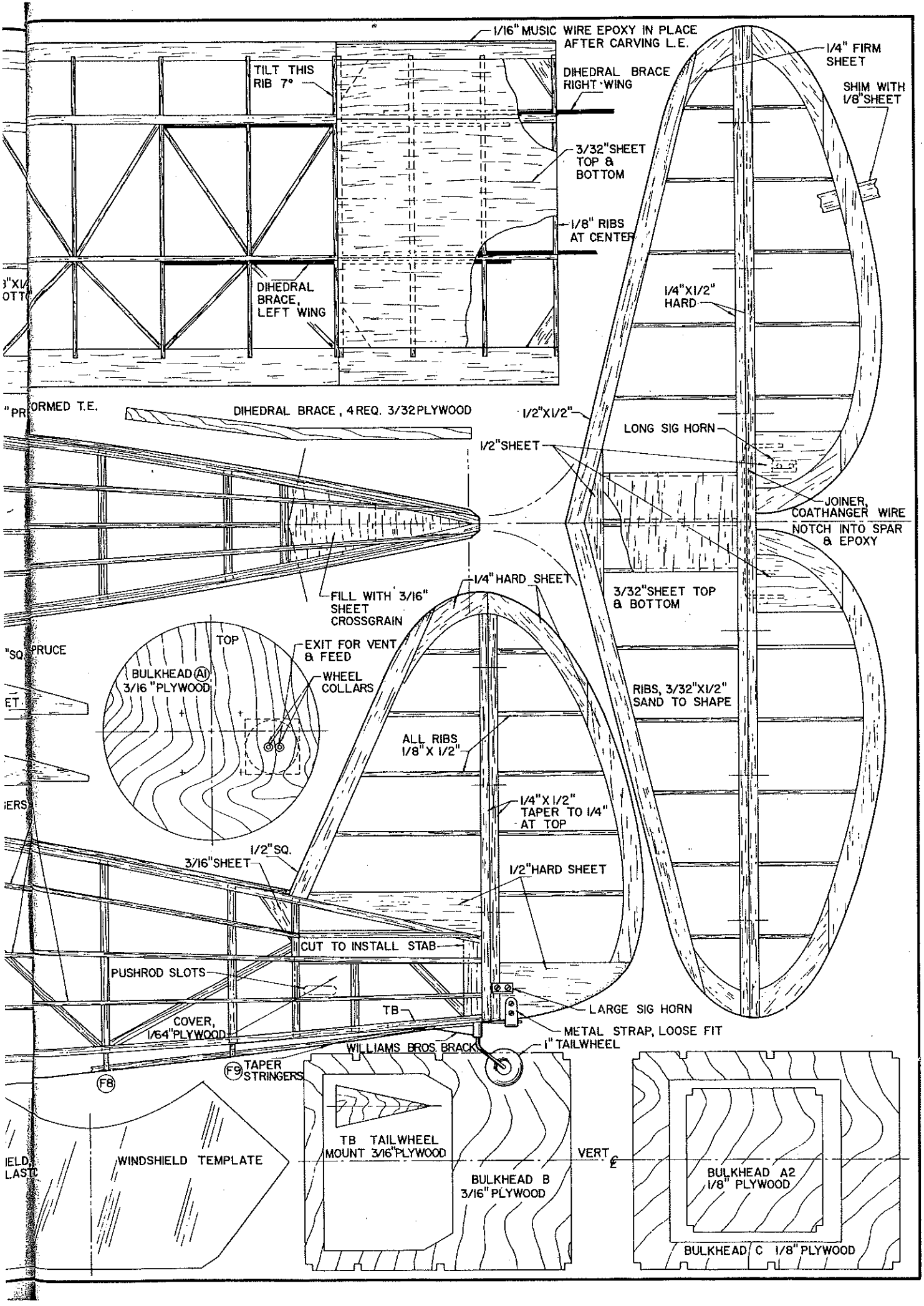


Right: Close-up of windshield area clarifies positions of supporting pieces. The cowl held in place by four brackets tapped for the 4-40 bolts. Wheels (Trexler G-11) are available from Sig. Fox 50203 motor mounts fits well.



Since the typical magazine presentation always brags about "roomy" cabins and accessibility, this barn takes the cake for space—even the tank can be removed via the cabin. The wing is rubberbanded on to the dowels shown. Maybe not as neat as nylon bolts, but it sure saves on wear and tear. Ship flies slowly and is not especially sensitive to over-control.


DIHEDRAL, 4" EACH TIP
L.E. 1/2"X 3/4"
1/8"SHEET TIP OVER BOTTOM SPARS, CONTOUR & SHEET 3/32"
CROSS BRACES 3/32X1/4"
SPARS 1/4" SQ. TOP & BOTTOM
3/16"SHEET
SPARS 1/8"X1/
TOP & BOTT
COWEL, ABS VK NIEUPORT
4-40
1/16"ALUMINUM BRACKETS
GUSSETS, 3/16" SHEET
1/4"X1" PRE
MOUNT, FOX 50203, 4-40 SCREWS & BLIND NUTS
SHIM FOR RT. THRUST AS REQ.
NTI, 1/16" PLYWOOD
NBI, 1/16" PLYWOOD (NO CUTOUT)
SPACE TO SUIT SERVO
1/16"PLYWOOD TANK BOX
BULKHEAD A1 A2
STRINGERS, 1/8"SQ. SPRUCE
STRINGERS, 1/8"SQ
ALL FORMERS, 1/8" SHEET
T1
T2
F6
F7
28 REQ. 3/32" C-GRAIN SHEET
SIG L.G. BLOCKS
NOSE SIDE 2REQ.
F3,4
F5 ONLY
F8
F9
4 REQ. 1/8" SHEET
F1
1/8" SQ. SPRUCE 5 PIECES
1/4"DOWEL
3/16"SHEET
3/16" SHEET
1/4"DOWEL
1/8"SQ. SPRUCE STRINGERS
BALANCE POINT
F2
T2
T1
BULKHEAD B
3/16"SQ. FILL WINDOW POSTS
3/16"SHEET FILL
NTI
FUEL TANK SIG 2 OZ. 1/16"PLYWOOD BOX
BULKHEAD C
COVER TO HERE WITH 1/16"SHEET OR 1/64"PLYWOOD
1/2"SQ. MAPLE SERVO RAILS
NBI
F1
F2
F3
SIG L. G. BLOCKS
F4
MAKE TWO
F5
F6
F7
BOTTOM STRINGERS, 6 REQ. 1/8"SPRUCE
L.G. LEGS, 3/32" MUSIC WIRE
1/2"x1/8" PLANKING
4" WILLIAMS BROS. OR TREXLER G-11
6 3/4"
6"
6 1/2"
10"
WRAP & SOLDER
WINDSHIELD, CLEAR PLAST
DENNY JR.
DESIGNED BY DEE MATHEWS
DRAWN BY MELANIE CARPENTER
TRACED FOR MODEL AVIATION BY RAY BORDEN
0 1 2 3 4 5 6


1/16" MUSIC WIRE EPOXY IN PLACE AFTER CARVING L.E.
TILT THIS RIB 7°
DIHEDRAL BRACE RIGHT WING
3/32" SHEET TOP & BOTTOM
1/8" RIBS AT CENTER
DIHEDRAL BRACE, LEFT WING
1/4" FIRM SHEET
SHIM WITH 1/8" SHEET
1/4"X1/2" HARD
DIHEDRAL BRACE, 4 REQ. 3/32 PLYWOOD
1/2"X1/2"
LONG SIG HORN
1/2" SHEET
JOINER, COATHANGER WIRE
NOTCH INTO SPAR & EPOXY
1/4" HARD SHEET
FILL WITH 3/16" SHEET CROSSGRAIN
3/32" SHEET TOP & BOTTOM
TOP
EXIT FOR VENT & FEED
BULKHEAD A1 3/16" PLYWOOD
WHEEL COLLARS
RIBS, 3/32"X1/2" SAND TO SHAPE
ALL RIBS 1/8" X 1/2"
1/4" X 1/2" TAPER TO 1/4" AT TOP
1/2" SQ.
3/16" SHEET
1/2" HARD SHEET
CUT TO INSTALL STAB
PUSHROD SLOTS
TB
LARGE SIG HORN
COVER, 1/64" PLYWOOD
METAL STRAP, LOOSE FIT
WILLIAMS BROS. BRACKET
1" TAILWHEEL
F9 TAPER STRINGERS
F8
TB TAILWHEEL MOUNT 3/16" PLYWOOD
VERT ℄
BULKHEAD B 3/16" PLYWOOD
BULKHEAD A2 1/8" PLYWOOD
BULKHEAD C 1/8" PLYWOOD
WINDSHIELD TEMPLATE