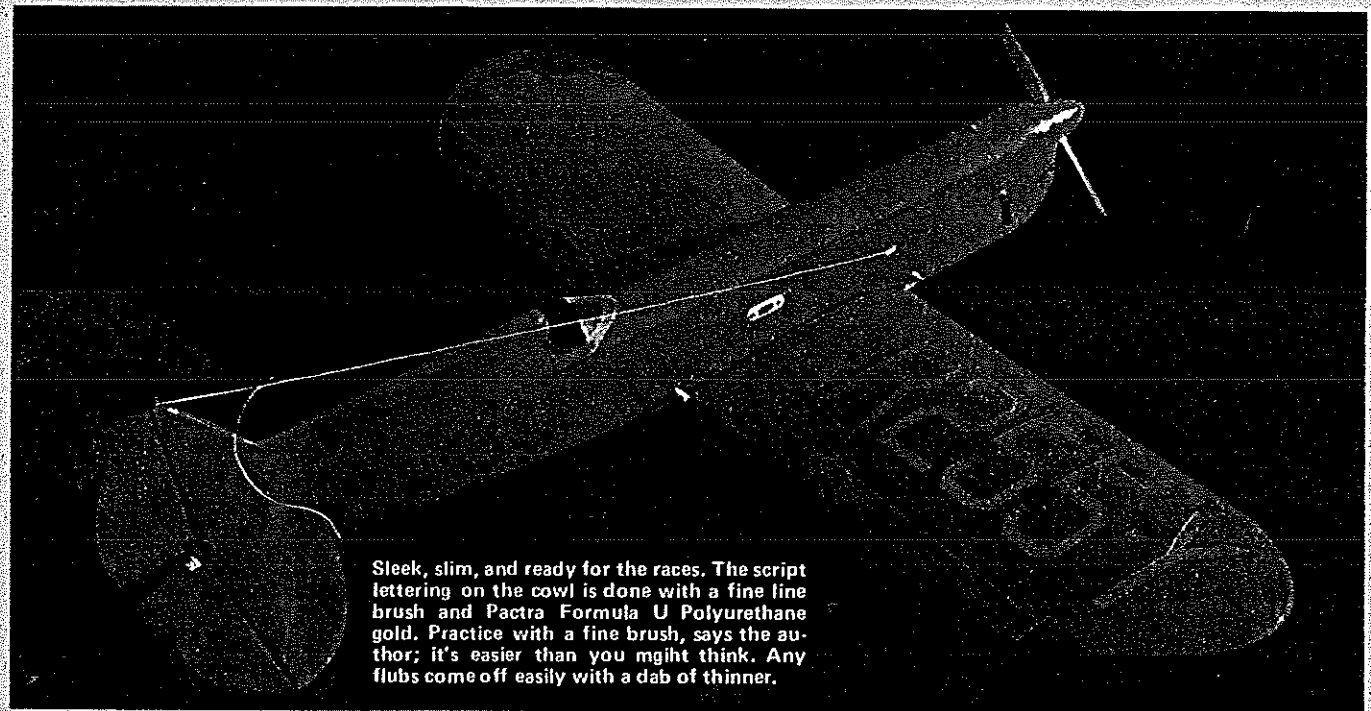
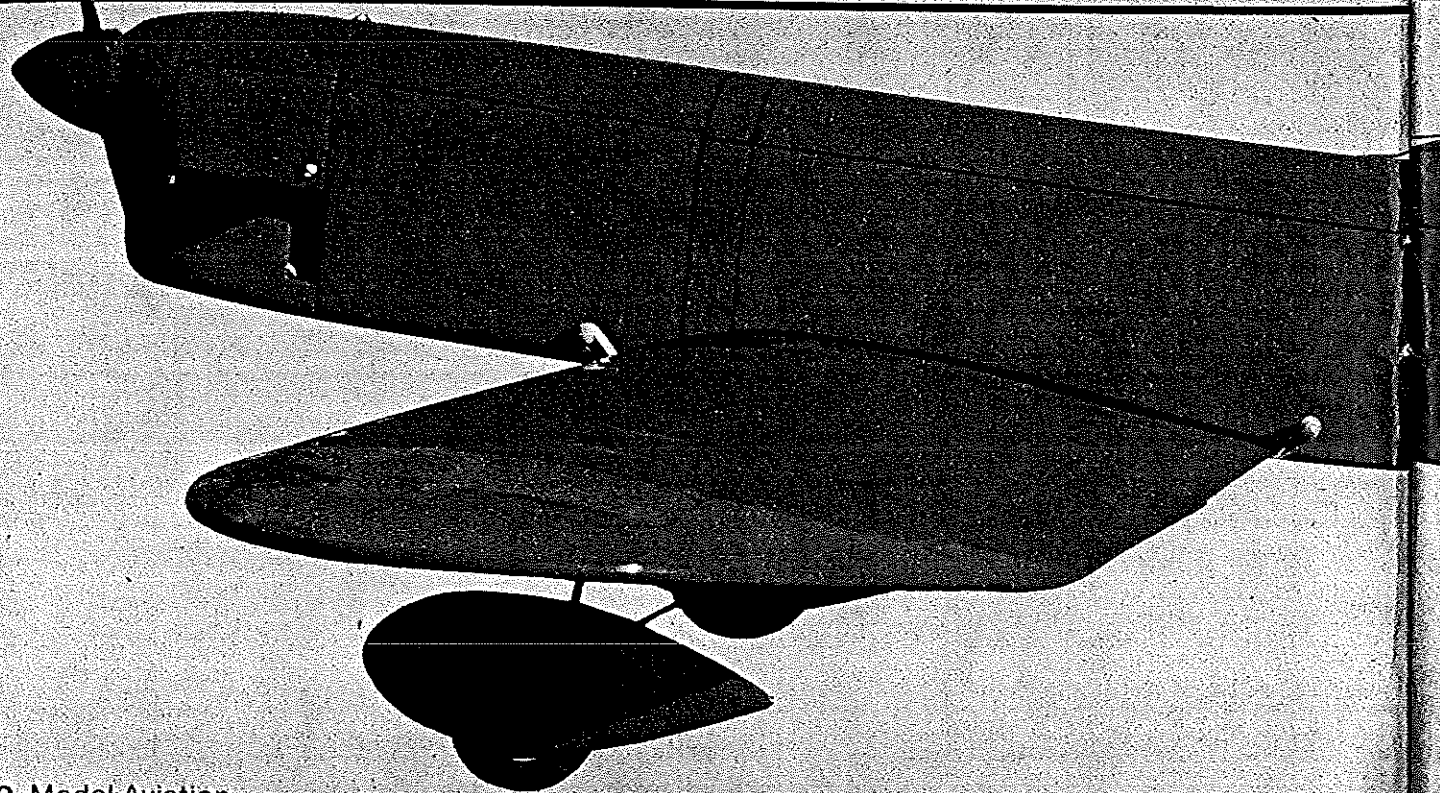


A four-channel RC sport flier for .19-.29 engines patterned after a plane which took on the Gee Bee and Wedell-Williams in 1934. When pressed into duty with a .25 engine as a Sport Pylon racer, it gives .40-powered Quickees a run for their money. It's straightforward to build—has nice flight traits. ■ Gary E. Brown #341



Sleek, slim, and ready for the races. The script lettering on the cowl is done with a fine line brush and Pactra Formula U Polyurethane gold. Practice with a fine brush, says the author; it's easier than you might think. Any flubs come off easily with a dab of thinner.

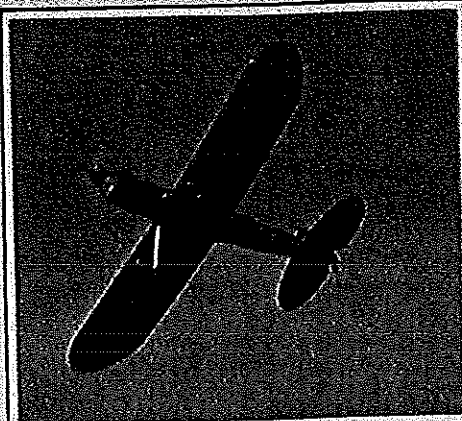
# Brown B-2 Miss



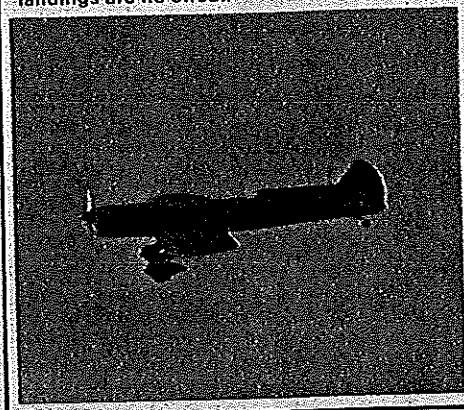
THE MISS LOS ANGELES was designed and built in 1934 by the Lawrence W. Brown Aircraft Company for pilot Roy Minor. Brown's plan was to compete with the high-powered Gee Bee and Wedell Williams by using a 300-hp Menasco engine in a smaller, lighter, and cleaner ship. He accomplished this with some measure of success.

Construction of the B-2 Miss Los Angeles was typical of the day. The slender fuselage consisted of welded steel tubing, while the wing was of wood and fabric. The fuselage top and turtledeck were of sheet aluminum; the rest of the fuselage was fabric covered. The B-2 spanned 19 feet and 3 inches, was 19 feet and 10 inches long, and had a gross weight of 1,300 pounds. Its lighter weight was claimed to give it an advantage over the heavier aircraft around the pylons.

The B-2's first year of racing, 1934, was probably its best. Roy



This bit of nostalgia really moves out! In the air she looks stretched, as if reaching for a finish line. The B-2 has lots of wing, so deadstick landings are no sweat.

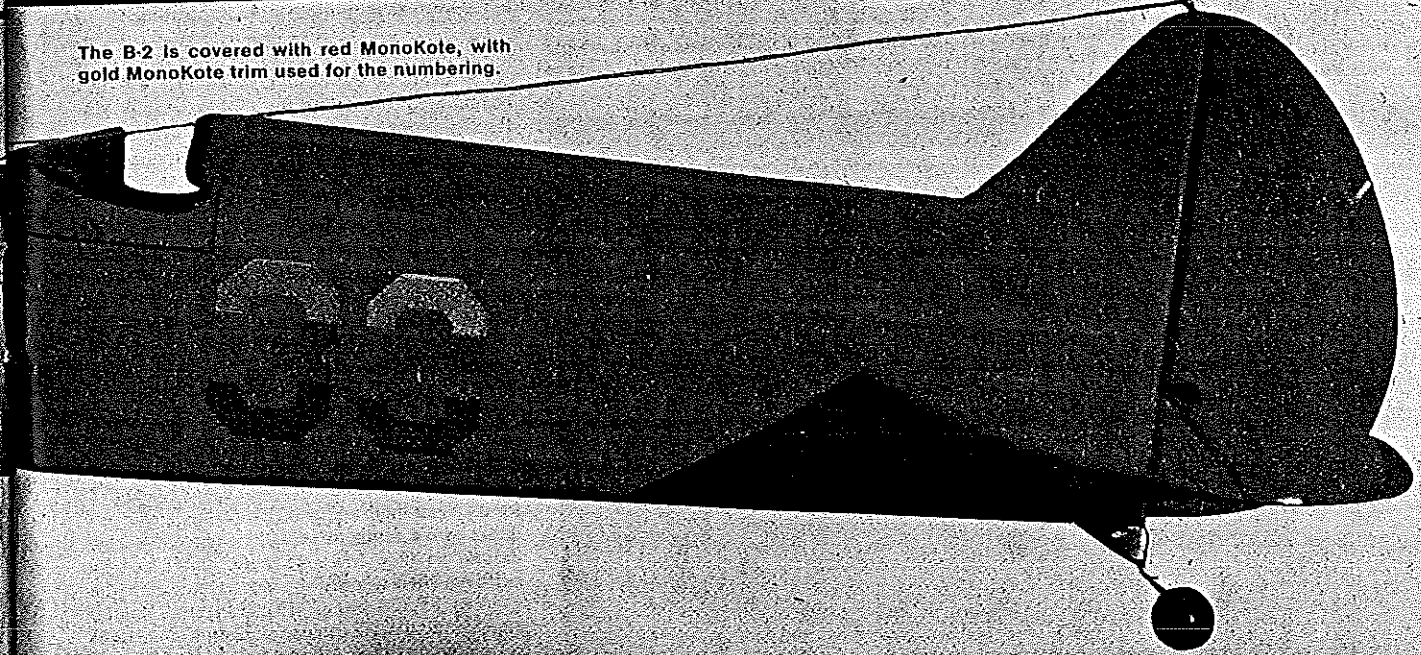


Minor, flying the B-2 in the Thompson Trophy Race, took second to Roscoe Turner, who was flying the Wedell-Williams No. 57, first in the 550 cu. in. event, and a fifth in the unlimited event of the Shell Speed Dashes. At the end of the 1934 season, the Miss Los Angeles was sold to Marion McKeen who piloted it to a sixth place in the 1935 Thompson and a fifth place in the 1936 Thompson, chalking up its best average time for a Thompson Trophy Race at 230.5 mph.

Later in its career, the Miss Los Angeles was fitted with retractable landing gear and a new set of plywood sheeted wings. These modifications did not significantly improve the B-2's performance to a point where it could successfully compete with the newer, higher horsepower aircraft. Finally, during the 1939 Greve Race, the end came hard and fast for pilot and plane as Lee Williams stalled the

# s Los Angeles

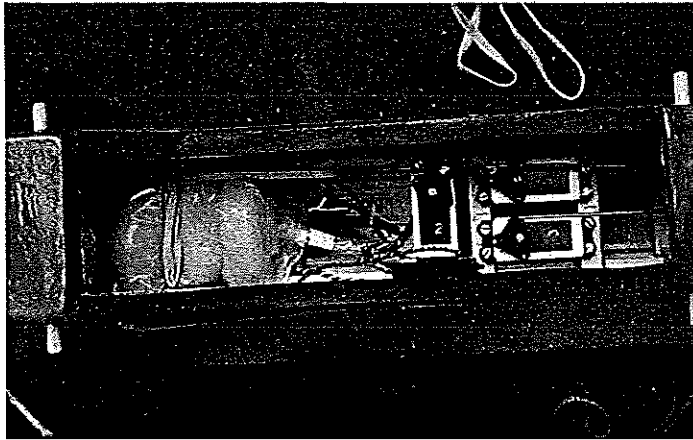
The B-2 is covered with red MonoKote, with gold MonoKote trim used for the numbering.







This is the best way to start an inverted engine, says the author. Cutouts in the engine cowling make last-minute needle adjustments a lot easier. Note the large space for cooling air to exit on the bottom; there are also slots on each side of the cowling.



Radio installation in the B-2 is straightforward. Not having a nose wheel keeps it simple. Pad the receiver carefully with foam—this is a racing plane, remember! The wing can easily be built for bolting on.

When you race, you expect a little of this sort of thing. Author's daughter Jolie shows off the results of a slight midair. That neat slice in the wheel pant was made by the other guy's prop. Damage doesn't seem to bother Jolie any! Both planes landed safely.



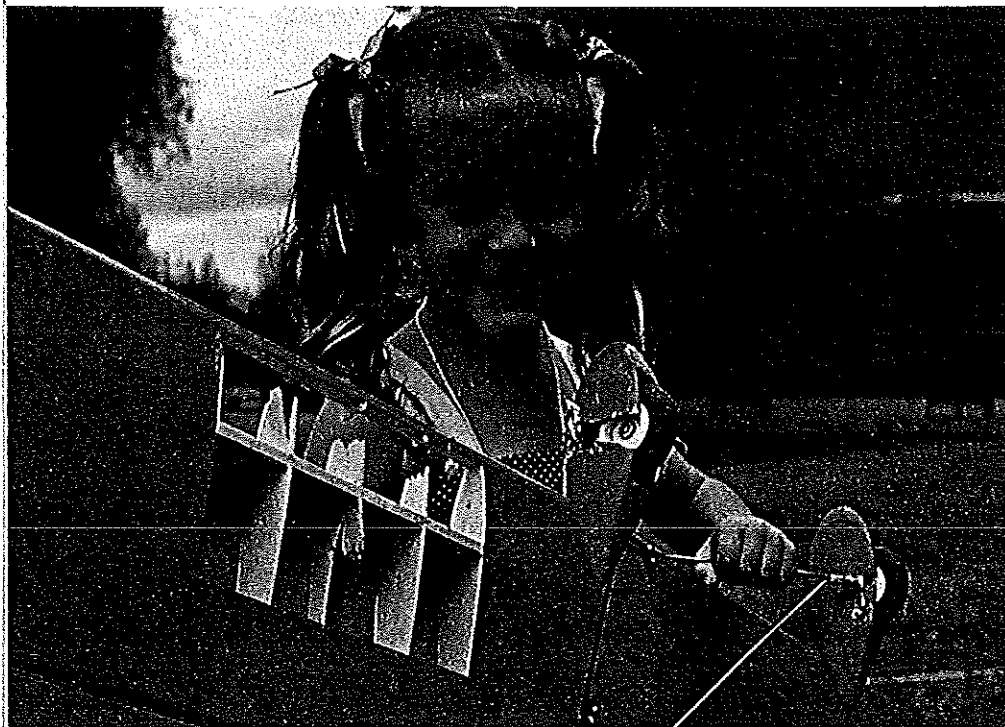
The engine installation. Note the triangular block behind the head for cooling air deflection. Du-Bro muffler minimizes hole in cowling.

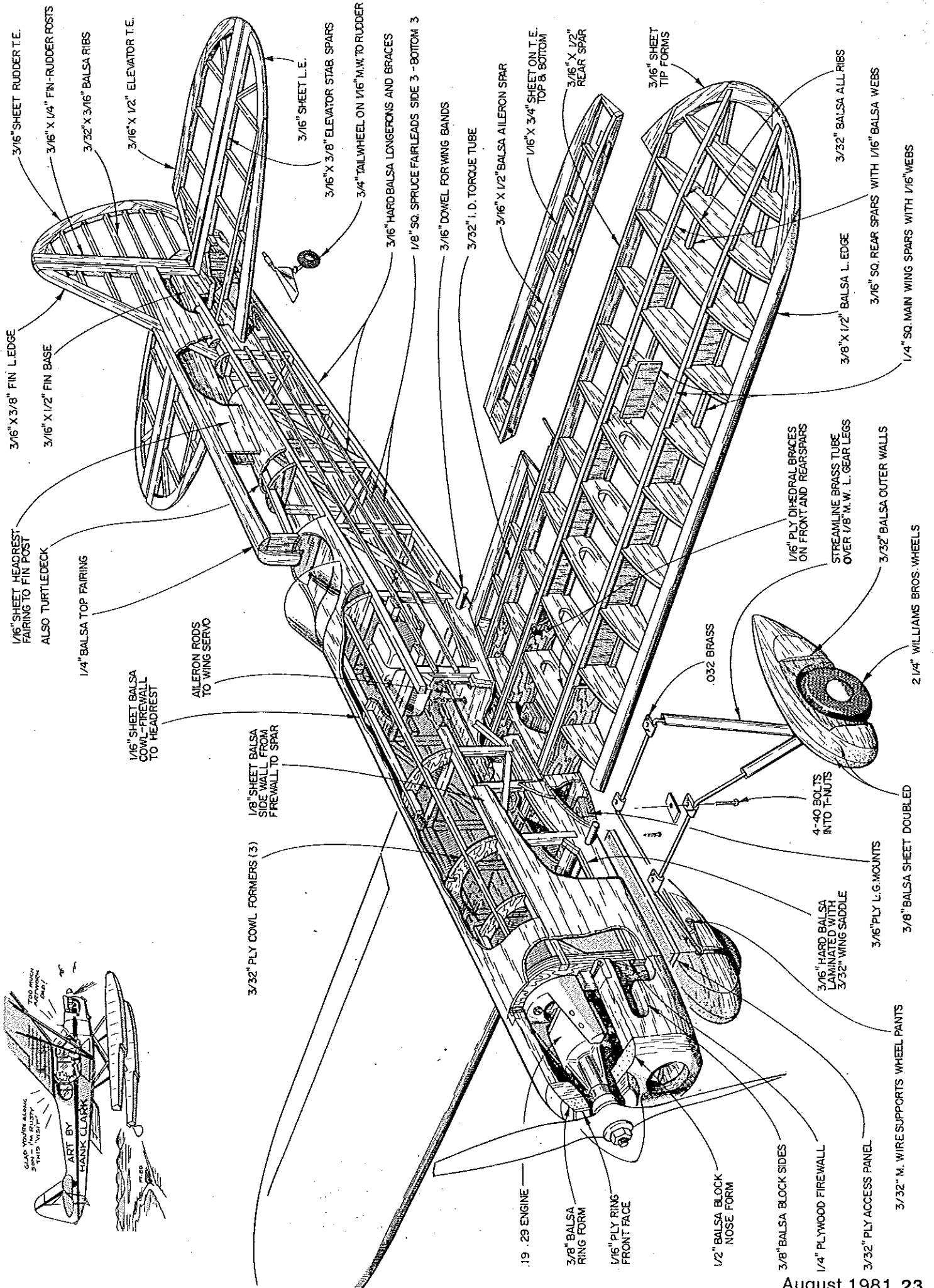
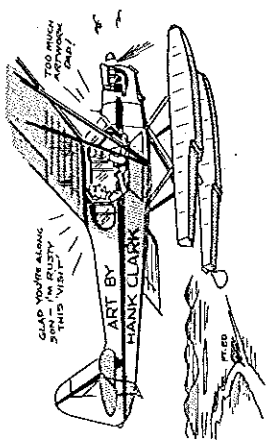
B-2 while rounding the scatter pylon.

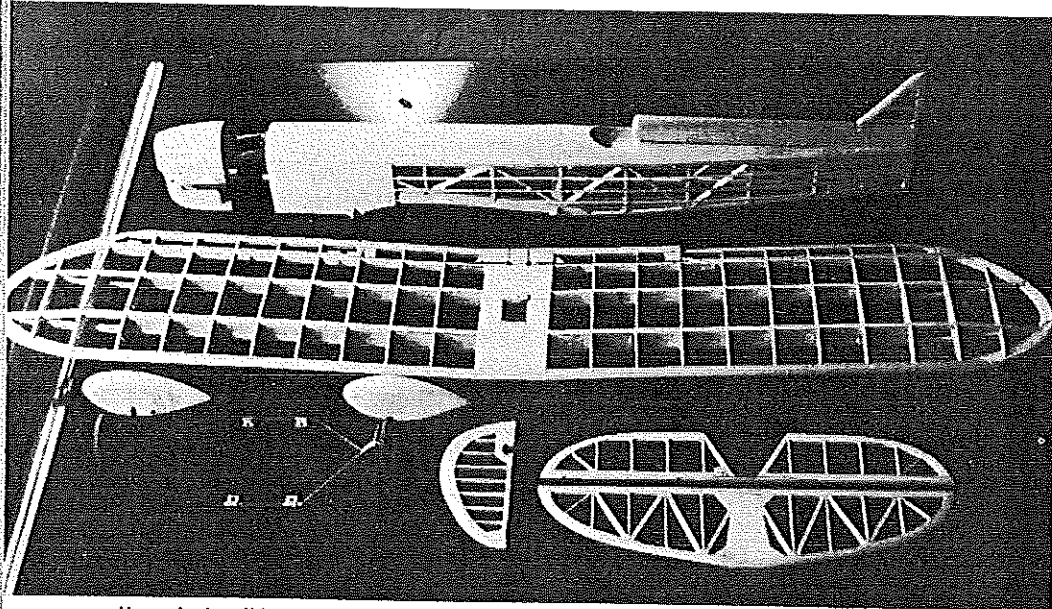
The death of the Miss Los Angeles was the beginning of the end of the Golden Age of Air Racing as we knew it in the United States. For the next six years the U.S. was to be involved in a different type of "air race" in the skies over Europe and the South Pacific. At the end of the war the Thompson Trophy competition started again, but it was never the same. Gone forever were the Browns, the Keith Riders, the Wedell-Williamsses and the Gee Bees. In their places were the products of wartime technological advancements: the Mustangs, the Bearcats, the Corsairs, and the Lightnings.

The design. I had been mulling over several designs for Sport Pylon competition when I decided to take the same approach to racing that Lawrence Brown had in 1934. I selected the B-2 for its clean lines and good proportions. Since I didn't own a competitive .40, I elected to design around an O.S. Max .25 FSR that I had by building slightly smaller and lighter than the average 15-500 design. Hopefully the smaller engine and plane combination would prove to be competitive with a .40-powered 15-500.

As it turned out, I did not achieve my goal exactly as planned, but I wasn't far off. The B-2 is quite fast, and it did manage to best several Quickees, but on average it is about 10 seconds slower than a .40-powered Quickee. As was







Here she is, all framed up. Note the vertical grain webbing between the spars, front and back. The tabs on the landing gear are made from sheet brass. All photos are by the author.

often the case with the original full-size B-2, my model of the prototype was never far behind! And that's not a bad showing for pitting a .25 against a .40!

If it's not the world's best racer, the B-2 has proven to be a great sport flier. Its light wing loading and good proportions make it stable and easy to fly. It has never demonstrated any tip stall tendency, even at less-than-reasonable landing speeds. It is not a "lead sled" that has to be landed at 79 mph to avoid a nasty fall. If you like the lines of the early air racers but are a little skeptical of their sometimes scanty wing areas, try the Miss Los Angeles. I'm sure you'll enjoy it as much as I have.

**Construction.** Before beginning, please study the plans thoroughly, so that you know where, why, and how each piece fits.

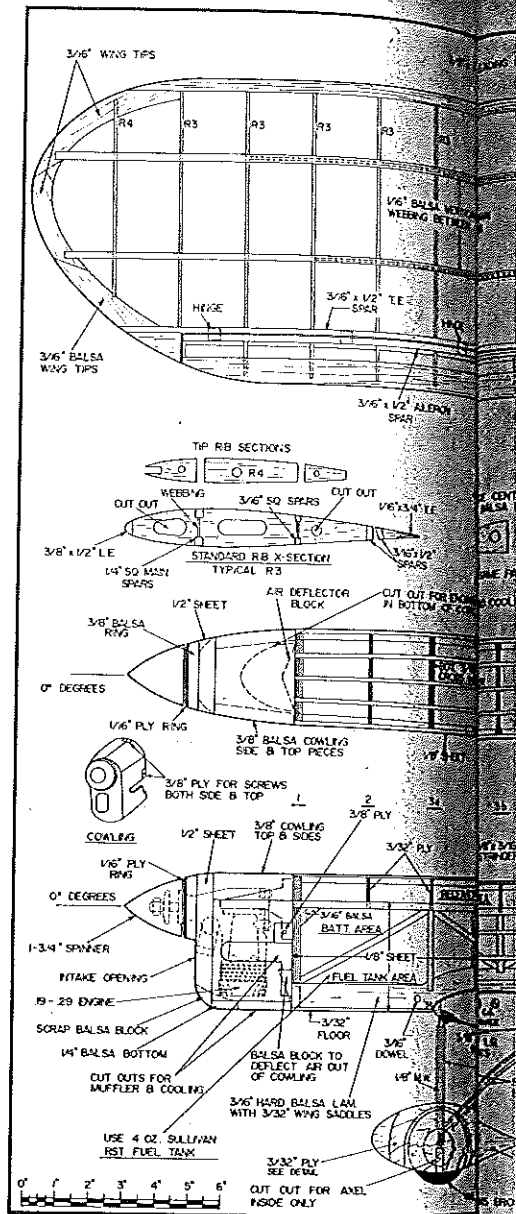
The wing is typical rib-and-spar construction, with 1/16 balsa sheet webbing (vertical grain) between the top and bottom spars, joined in the center with plywood dihedral braces. Note the 3/16 plywood pieces mounted across the bottom of the center section for the landing gear mount. Begin by cutting out and sanding to shape the

ribs and tip pieces. Glue the ribs to the bottom main spar over the plan. Add the bottom rear spars, being sure to keep the ribs square to the spars. Glue the top spars in place along with the leading edge and the 3/16 x 1/2 trailing edge spar.

Assemble the three tip pieces as one unit. When they are dry, glue them to the centers of the leading and trailing edge spars. Complete the tips by gluing the tip ribs in place and joining the top and bottom spars at the tip. Add the 1/16 vertical-grain spar webbing as shown on the plans. Join the right and left wing panels with the plywood dihedral braces, and construct the center section with the remaining rib pieces. Don't forget the 1/8-in. dihedral under each wing tip. Note that the servo box is constructed of two center rib sections.

Build the ailerons and the wing trailing edge inboard of the ailerons. Finally, add the plywood landing gear mounts and aileron torque tubes. Sheet the center section top and bottom. I would suggest using 4-40 bolts and blind nuts to mount the landing gear, so be sure to install the blind nuts before sheeting the center section.

Add about 1/4 in. of washout in the wing tips (a twist with the leading edge lower than the trailing edge) at the very end of each aileron. Recheck the

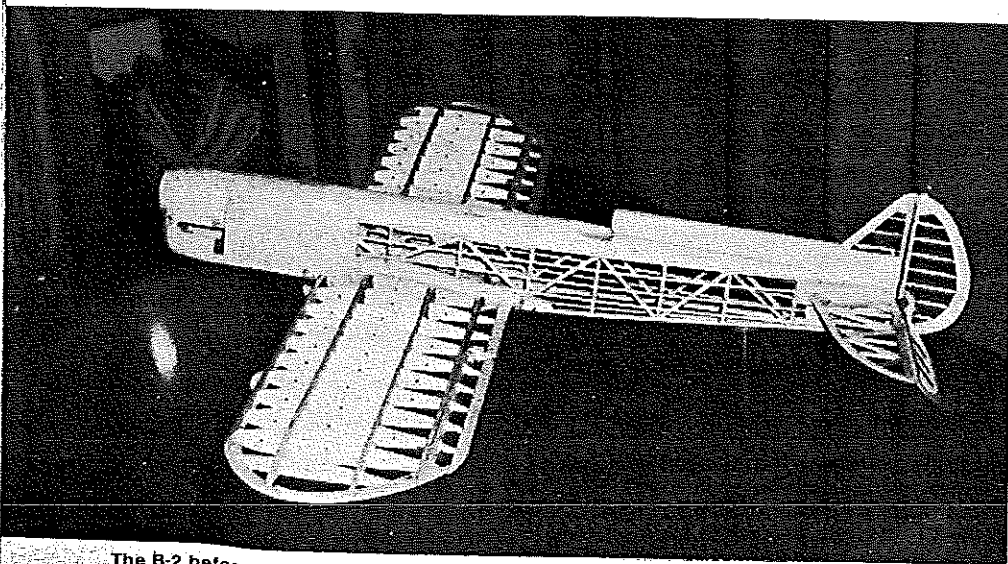


washout if, after test flying, your ailerons trim out very far off center.

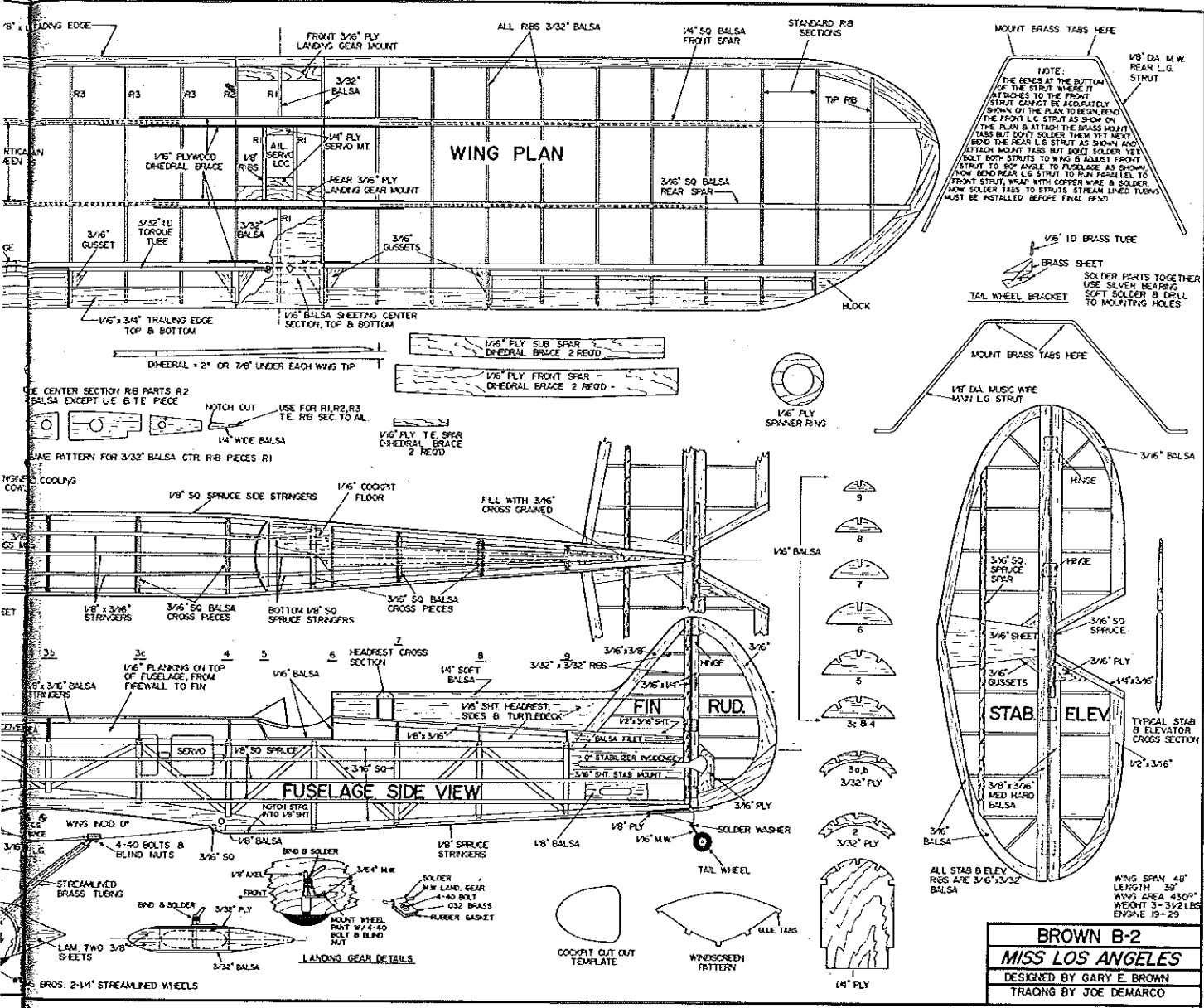
The fuselage is a built-up box structure of 3/16 sq. balsa sticks. Build one side over the plans—and the second side over the first—to ensure their sameness. Add the diagonals to each side. Join the sides with the various formers and 3/16 sq. crosspieces. Be careful to keep the sides vertical and square to each other. Add the 1/4 plywood firewall, and draw the tail together by adding the 3/16 crosspieces from the cockpit rearward. Glue the 1/8 x 3/16 balsa stringers to the top forward fuselage, and sheet the turtledeck and sides ahead of former 3B. When the stringers are dry, sheet the top of the fuselage forward of the cockpit. Glue the 3/16-in. stab mounts in place at the tail, and add the head rest from the cockpit to the fin. Finally, add the 1/8-in. sq. spruce side and bottom stringers.

Note the holes for the 3/16-in. dowels for the rubberbands. This is an optional method of wing attachment. You can easily use nylon bolts if you prefer.

The engine cowling is constructed of sheet balsa and carved internally to fit the engine and muffler. Depending on your skills with the material, fiberglass would make an excellent substitute for balsa. If you do use balsa, I highly recommend



The B-2 before covering. According to the author, the holes you see in the ribs are to allow air to escape while the MonoKote is shrinking. The stringer construction of the fuselage shows up well here; traditional construction methods allow you to keep the tail nice and light.



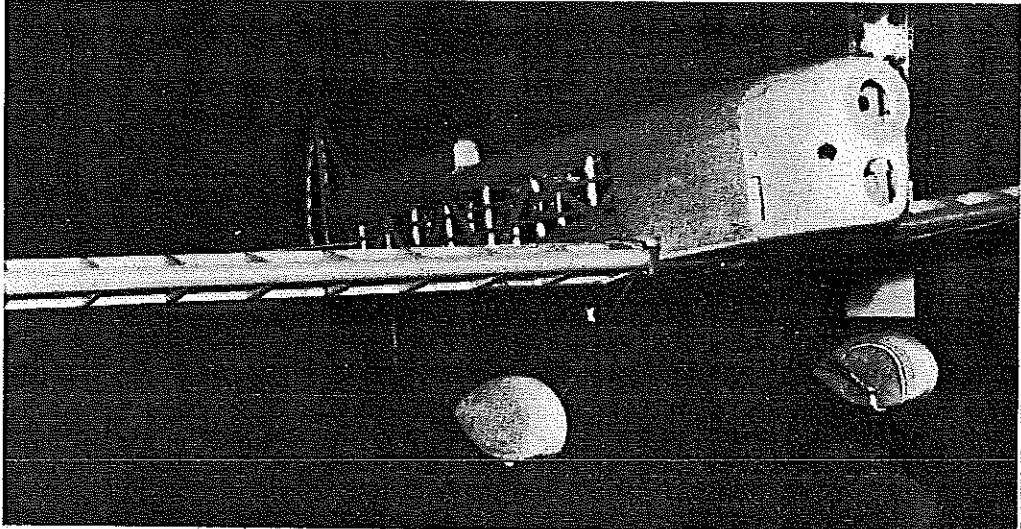
the use of resin and glass to line the cowling for added strength and protection against vibration-induced cracks. Be sure to remove about two-thirds of the bottom of the cowling around the engine head for adequate cooling and to allow access to the glow plug without removing the cowling. The Goldberg 90-degree nylon brackets work well for fastening the cowl at each side. Along with these, I used one lone sheet metal screw to fasten the top of the cowl directly to the Kraft engine mount, providing a three-point attachment. Splice a piece of plywood into the cowl at the mounting holes to keep the screws from chewing up the balsa. Note the triangular block mounted to the firewall behind the engine head to help deflect air out of the engine compartment.

**Stab, Elevator, Rudder and Fin.** Build these components directly over the plans. Note the 3/16-in. sq. spruce spar in the stab. Leading and trailing edges should be sanded to shape as indicated on the plans. Note the 3/16 plywood inserts in the elevator and rudder for mounting control horns. You don't want squashed balsa in these areas!

**Finishing.** The original Miss Los Angeles was scarlet red with gold numbers and lettering. I covered my model with red MonoKote, and I

used gold MonoKote trim sheets for the numbering. Most any covering material may be used, but remember to keep it light.

Prior to covering, I coated all of the structure with Balsarite, except for the cowling, firewall, *Continued on page 107*



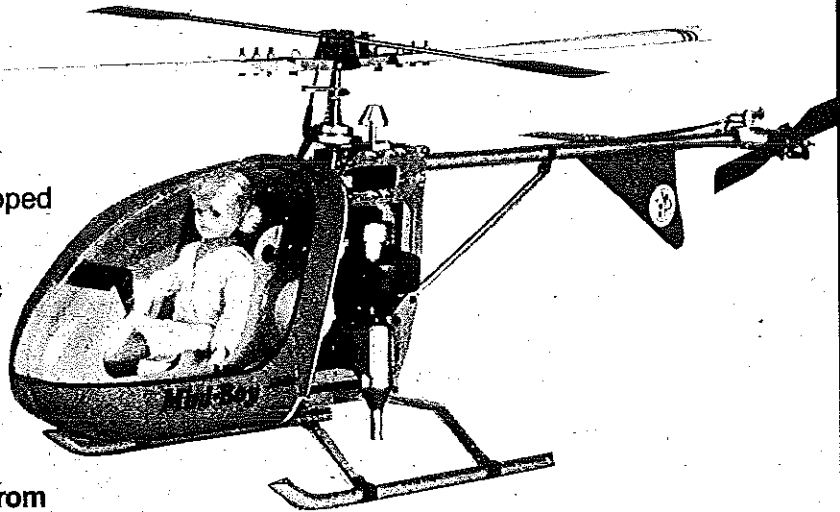
This view shows the wheel pant attachment, as well as the cowling. Note the air outlet cut on the lower side of the cowling; there's an outlet on both sides as well as the bottom. The ply switch plate is located between two spruce stringers on the side.



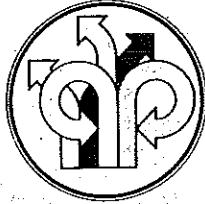
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**Down to the Sea in Ships:** Our Air Force-type son Mike has his G-S Stinson framed up—on wheels. Meanwhile, our dialogue with Bob Smurthwaite has reached biblical proportions—with dozens of spectacular color photos of Howards and Stinsons skimming off the smooth mountain lakes, landing like ducks, and even flying in formation. These seaplanes fly better than one could suppose. Bob will be doing a major article for *Model Aviation*, but we asked him for a sneak preview drawing of his highly successful floats. They are scale Edo, but bottoms are modified. A deep "V" bottom will geyser water toward the prop and fuselage, and beats the prop to pieces (boy, how we remember that from Cub takeoffs on Edos!). The shallow "V" angle bottom lessens this inward spray. Also, the traditional deep "V" creates enormous drag. On the drawing by Herb Clukey you'll find a scale Edo cross section. The reason for the triple-sharp "keelsons" is to ease the people-carrying plane into the water. The "keel" is the outer wearing surface on the bottom, forward of the step, for sliding on ramps. In view of the article which tells all, we resist spilling the beans. We've included several pix which hint at the glorious stuff you will be seeing. Suffice it to say that Bob

has never known any model to flip, swamp, or water loop with these floats. They have handled many models of up to 10 pounds weight with ease and realism. We should say, however, that the deeper "V" aft-of-step is more buoyant, and improves still or idle-speed setting on the water. Coming up at G-S are movies for a float flying show, to be available to clubs and other users.

**Errata:** Last month, we mentioned having a good time with Don Srull, his Spitfire, and an Astro Flight 05 electric prop drive system. There's a mistake in there. Not the good time part—the 05 part. That's a 15 motor and prop drive Don uses on the Spit. Please don't try it with an 05—the experts claim it shouldn't work with the 15. It does, though, and beautifully.


*Bill Winter, 4330 Alta Vista Dr., Fairfax, VA 22032.* Fellows, please put address on letters (we have earnest kids we can't answer because they didn't give an address). If reply is necessary, do include a pre-addressed and stamped envelope; we use a roll of stamps a week. Help!

### Brown B-2/Brown

*Continued from page 25*

and other areas to be coated with resin. The cowling was lined with fiberglass and resin on the inside, and coated with resin on the outside. The firewall and about the first inch of the fuselage also received a coat of resin inside and out for absolute fuel protection. Be sure to sand the wood thoroughly so that the resin will adhere properly. If you use MonoKote, the resin will provide excellent protection from oil soaking.

*Continued on page 110*



**Hobby Horn**  
*a hobby specialist*

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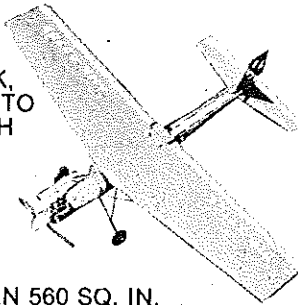
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After the resin has hardened, sand it lightly with fine sandpaper, and you will have no trouble with the MonoKote adhering to it.

The Miss Los Angeles lettering on the cowling can be done with Pactra Formula U Polyurethane paint. Thoroughly clean the MonoKote surface with thinner, and use a fine brush. If you make a mistake, it can easily be wiped off with a little thinner. Practice the script design before beginning. The polyurethane paint sticks surprisingly

well to the MonoKote.

**Engine mounting.** A word of encouragement: inverted engines are not all that difficult to start and adjust. During our club racing, I always managed to have the O.S. running well within the 90-sec. time limit.

The easiest way to start an inverted engine is with a cradle that will hold the entire model upside down (with the wheels up). A simple wooden cradle can be designed and built in about half an hour. Remember to make one end of the cradle a little higher. This will keep the nose of the model slightly higher than the tail—and prevent gravity from flooding the carburetor with fuel. You can also use a Robart Super Stand.

As with any model, make sure your batteries, leads and plug are all in good shape. Speaking of batteries, a 1.2-volt Nicad cell mounted in the fuselage and wired through a switch to the glow plug will help the idle.

Install the fuel tank (a 4-oz. Sullivan RST fits nicely) in the lower forward fuselage with the tubing protruding through a hole in the firewall. Put silicone sealer around the tubing at the firewall opening to seal against oil leakage back into the fuselage. Your battery pack goes on top of the fuel tank. Receiver and servos are mounted over the wing. I would suggest securing the receiver up against the top of the fuselage with rubberbands to keep it from shifting. Epoxy several small music wire hooks into the structure to attach the rubberbands to. Remember to position your radio equipment to work toward a proper center of gravity (C.G.) location as shown on the plans.

**Landing gear and wheel pants.** Bend the two main gear legs out of ½-in. music wire. Wrap the joints with copper wire and solder. The .032 thick brass sheet landing gear mounting tabs should be positioned on but not yet soldered to the gear. Screw both front and rear struts to the fuselage, mount the streamlined tubing, and then make the final bend to join the two pieces. After the legs are joined, solder the tabs in place. Small rubber gaskets made from an inner tube can be inserted between the brass mounting tabs and the wing to act as oil seals and prevent abrasion of the wing.

The wheel pants are laminated from ⅜ balsa sheet in the center and 3/32 plywood on the sides. Be sure to leave at least an ⅛-in. clearance between the wheel and pant. The inside of the wheel pant is another good place to use finishing resin to protect from dirt, water, and fuel. I have shown my favorite method of mounting wheel pants on the plans. The single-point attachment via a 4-40 bolt and blind nut behind the axle will allow the front of the pant to pivot upward and avoid damage in the event of a noseover or hard landing.

**Flying.** Be sure the C.G. is as shown on the plans. This will give you a nice, groovy, easy-flying model. Make all C.G. adjustments with caution and in small increments! I'm sure by now you've heard all the warnings about trying to fly a tail-heavy model—it's a disaster!

Start with small control surface throws. I have used the following: ailerons, ¼-in. up and down; elevator, ½-in. up and down; rudder, ⅜-in. left and right.

Takeoffs are fast and smooth; you will not need to worry about runway length. Be prepared to hold right rudder until the model is off of the ground and begins to pick up airspeed. Once in the air, the model is smooth and steady. If you have kept the model at the recommended 3 to 3½ lb. total weight, landings can be slow and easy. Throttle back at the beginning of the downwind

leg, as the aerodynamically-clean B-2 will glide quite a distance. It will land with little more speed than a deBolt Champ, and with no stalling tendencies.

Although it may be a little too quick (with a larger or hotter engine, that is) for the newcomer to aileron flying, anyone who is comfortable with an aileron ship should have no problem with the B-2. Try this sleek little Thompson Trophy racer. It's a real pleasure to fly.

## Radio Technique/Myers

Continued from page 27

L.R. Taylor & Co., 20831½ Roscoe Blvd., Canoga Park, CA 91306

Authorized R/C Service, 941 North Main St., Orange, CA 92667

GSP Products of Sacramento, 2238 Rogue River Dr., Sacramento, CA 95826

Electronic Model Systems, West, Mark Schwing, 6175 E. Palo Alto Dr., Anaheim, CA 92807

Paul's R/C Service, 8823 Ruggles, Omaha, NE 68134

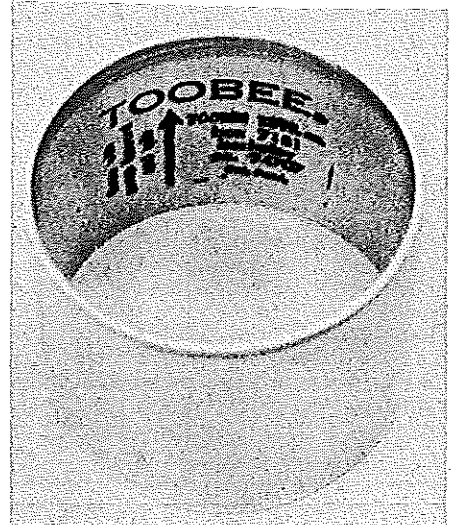
Digital Control Repair, 10044 Goliad, El Paso, TX 79924

R/C Specialties, 2026 Snowmass Lane, Garland, TX 75042

David Bowen, 1607 Jane, Pasadena, TX 77502

John Deneke, 526 Doremus Ave., Glen Rock, NJ 07452

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Toobee and the Toobee Player's Handbook, from Para Publishing, Box 4232, Santa Barbara, CA 93103.

The thing in the photo above strongly resembles the upper half of an obsolete soda can. That's just what it is. Would you believe that there has been a book written about it? You see, if you throw this little can properly, it flies in a rather remarkable manner. Put some English on it when you throw, and you get aerobatics. The details are in the aforementioned book, the Toobee Player's Handbook, by Dan Poynter. This whole thing is somewhat reminiscent of the Frisbee, which is also pretty unlikely when you think about it. The book retails for \$5.95 (including shipping) from the above address, and the Toobees themselves are available for \$2.95 per pack of two, from Toobee Inc., Box 7181-E, Berkeley, CA 94707.

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