

It's a romantic and miniature trip back to the late Forties—but with the quiet, dependable power of a Telco (or other) CO-2 motor.

When the Civy Boy FF Power models appeared at the Nats so many years ago, they caused quite a stir. The ultra-long tail moment had rarely been seen before, and the slow, floating glide was sensational. Designer Paul Gilliam had finished and tissue-trimmed his models so immaculately that all others paled by comparison. Our presentation is a CO-2 powered replica of the 74-in. version.

WHAT WONDERFUL memories the Civy Boy FF models bring back. Our subject which is done in miniature, the Civy Boy 74, was published as a construction article in the October 1949 *Model Airplane News*. At that time, I was about 13. I can recall flying with a Baby Spitfire in Free Flight and arguing with a Merlin Super 'B' ignition engine in a Control Line trainer. Every month or so, a model magazine would come out with a FF construction article or contest report about the California modelers. Of such things, dreams are made, and this kid wore out a

lot of magazines through constant rereading the "how-tos" and the "who's whos" of modeling.

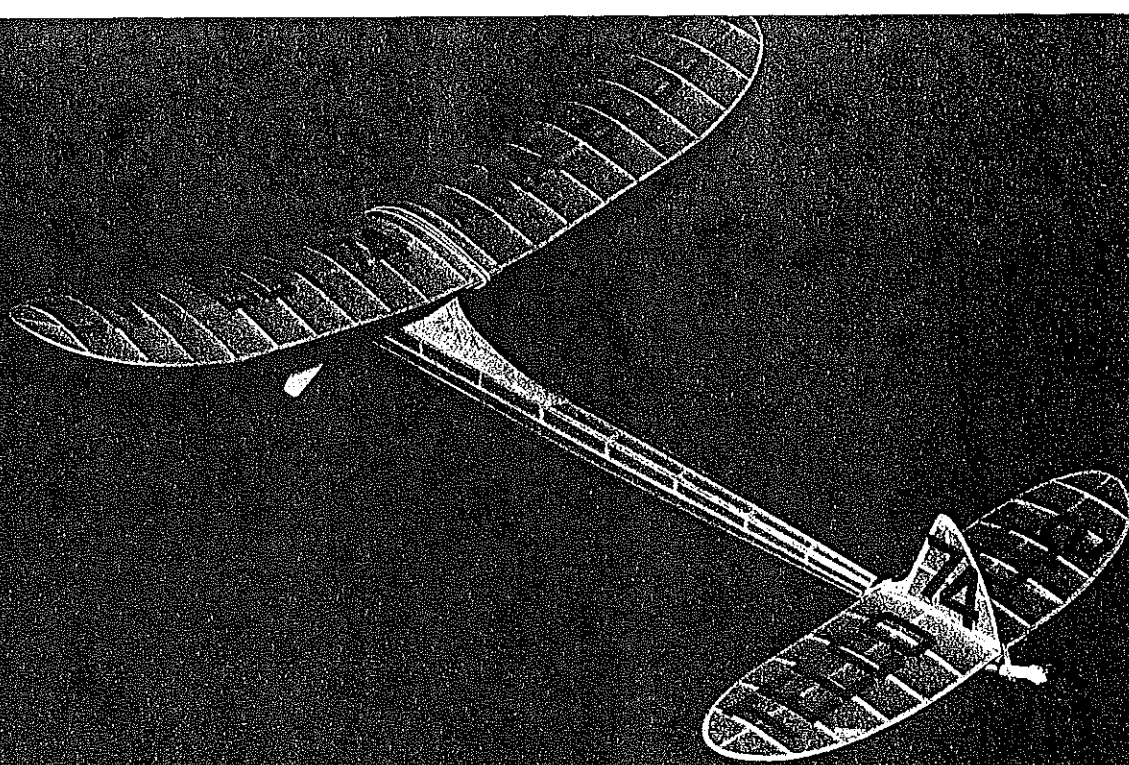
One of my favorites was the Civy Boy. The designer was Paul Gilliam, and he did quite well with it. Civy Boys appeared in various sizes as plans and kits (74 in., 61 in., and some smaller variations for 1/2A and the OK CO-2). The *MAN* article began with a nice endorsement by Bill Atwood, who manufactured the Atwood Triumph .49 and .51 engines featured on the 74. The plan showed both spark ignition and glow plug engines by variations

in the body length. (There were still a few die-hard modelers in 1949 who persisted in using ignition engines, but glow plugs were steadily and quickly taking over. That change was so positive that I can remember throwing out the coil and condenser—along with the grief of trying to get consistent running from the marginal pen cell flight batteries of the day. I also gave away the Merlin right after it was replaced by a new O&R .23 that didn't even have an ignition timer!)

Younger modelers, or those new to the hobby, are probably wondering what this

# A. A. Lidberg CIVY BOY 74

450



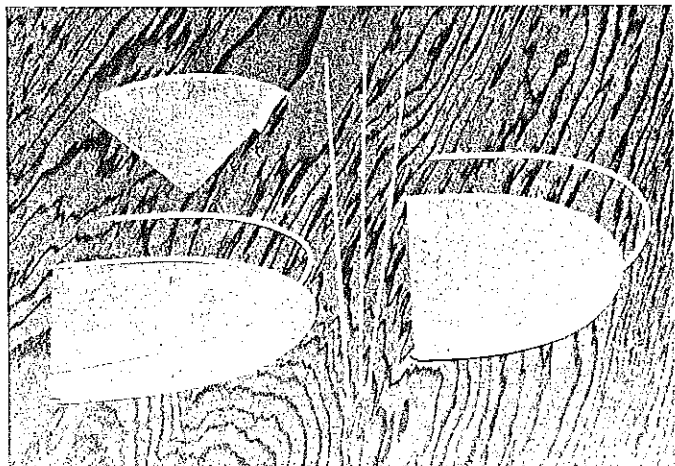
Classic proportions of the Paul Gilliam design show well in this view, as does the large tissue lettering that decorated his models so well.

nostalgia stuff is all about. Just what is the Civy Boy? Well, it is/was definitely a high-performance Free Flight model. More significant, to me at least, is that the CB 74 is one of the earliest models with a 100% CG (it balances at the trailing edge of the wing) and a huge stabilizer. These factors added some complications to the adjustments needed for flying, but they contribute to the classic floating glide of

the 'good' ones. The Civy Boy also contains other classic features: a high pylon, many-piece built-up construction (including the fuselage), and some more nice memories of Japanese-tissue-decorated models. There are some builders now flying Civy Boys in the Nostalgia event. This is for models from the years 1946-1956, often flown with engines from the same period or a bit later, that are flown against

each other in a kind of fun contest.

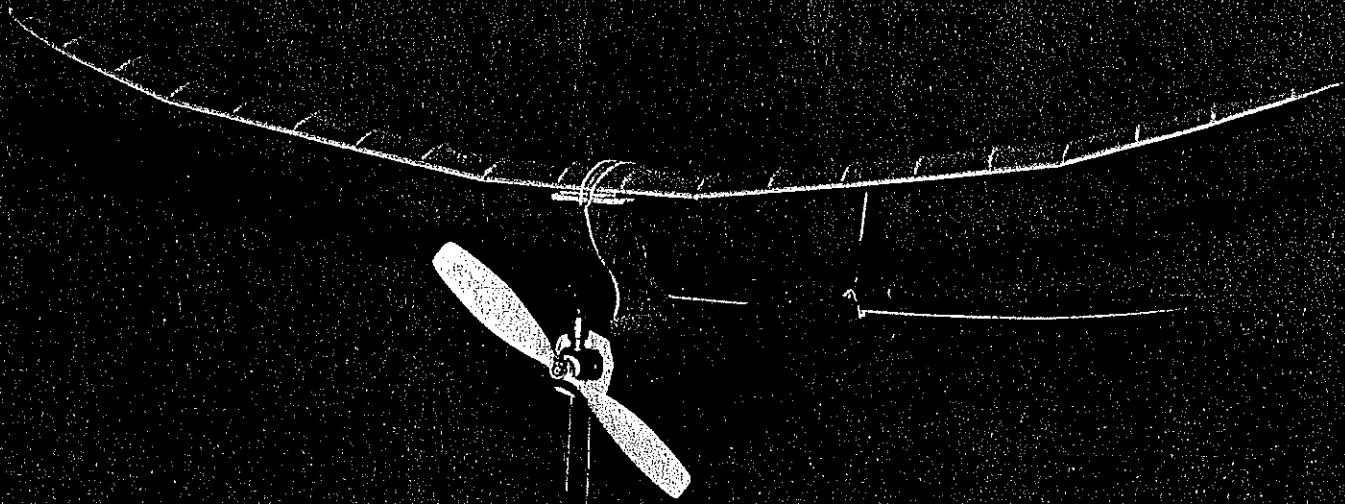
For those of us with space, time or financial problems, it would not be very practical to build all of the neat models in the Nostalgia or Old-Timer periods. That's why I've been building CO-2 powered replicas of many of the outstanding Free Flight models of the past. The replicas are good sport models, well-suited to small fields. There's not much formal



Left: The curved tips of the wing, stabilizer, and vertical fin are laminated around cardboard forms. Right: Sheet balsa is sliced with the aid of templates to form the upper and lower rib surfaces of the wing and the upper surface of the stab, 1/16 sq. used for the lower stab surface.

# CO-2 Replica

Be sure to install a dethermalizer on your Civy Boy replica. If not, you'll have no one but yourself to blame when it thermals away.



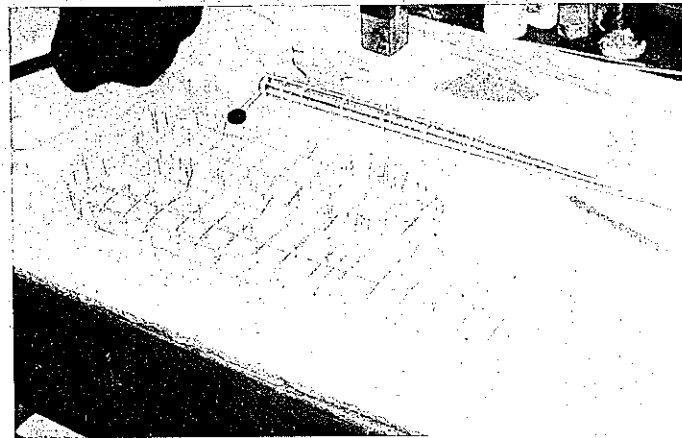
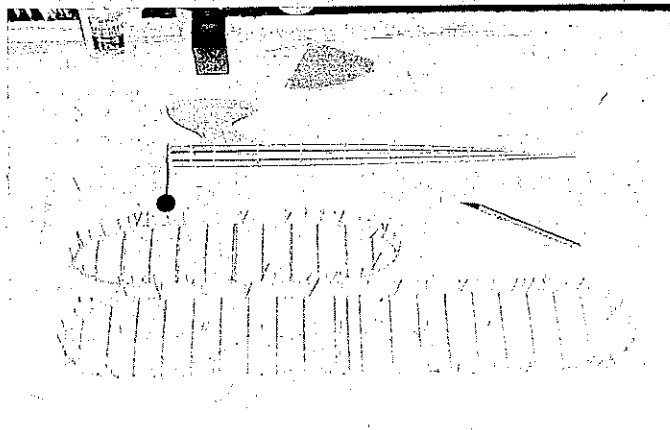
contest activity for CO-2 models, but we do have a CO-2 event in the AMA rule book. As of this writing, one of my replicas (Hal deBolt's 1946 Airfoiler) holds the AMA record for CO-2. The replicas can be flown for fun or perhaps in local club-sponsored contests. At any rate, a CO-2 replica of the Civy Boy 74 can be put together fairly quickly and for a far

smaller time and money investment than building one full size. Telco, Shark, and Brown Twin CO-2 motors can power the Civy Boy.

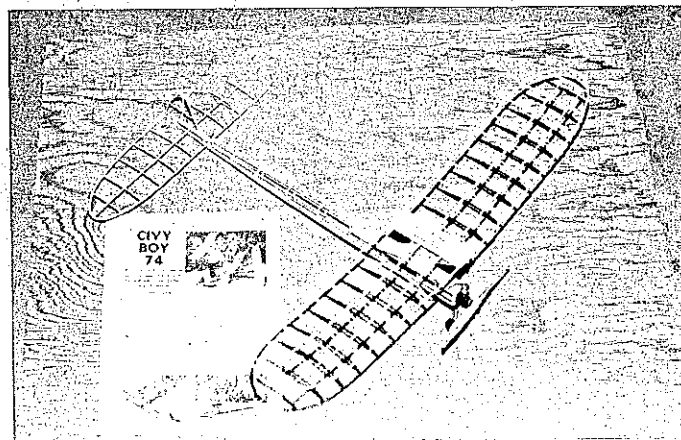
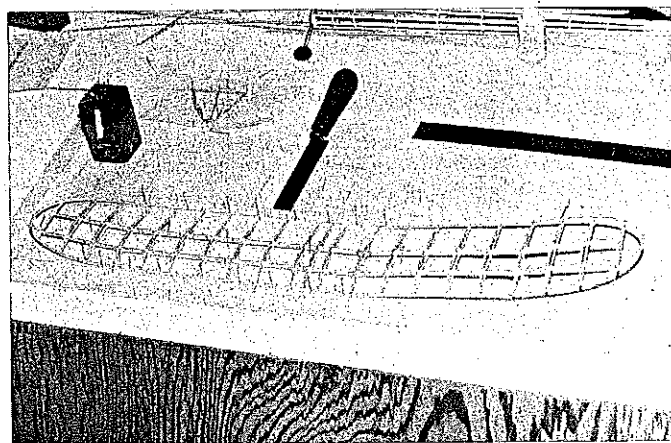
If there's any 'secret' to good-flying CO-2 models, it simply is to "build them light!" Each piece of balsa must be about as light in weight as you can find. If you don't have a good feel for the relative

weights of balsa sheets or sticks, just look for the lightest colored wood; it's usually the lightest in weight, too. For covering, use the lightest tissue and only one or two coats of very thin clear dope. Decorations, in keeping with the nostalgia theme, should be done with colored tissue instead of colored dope.

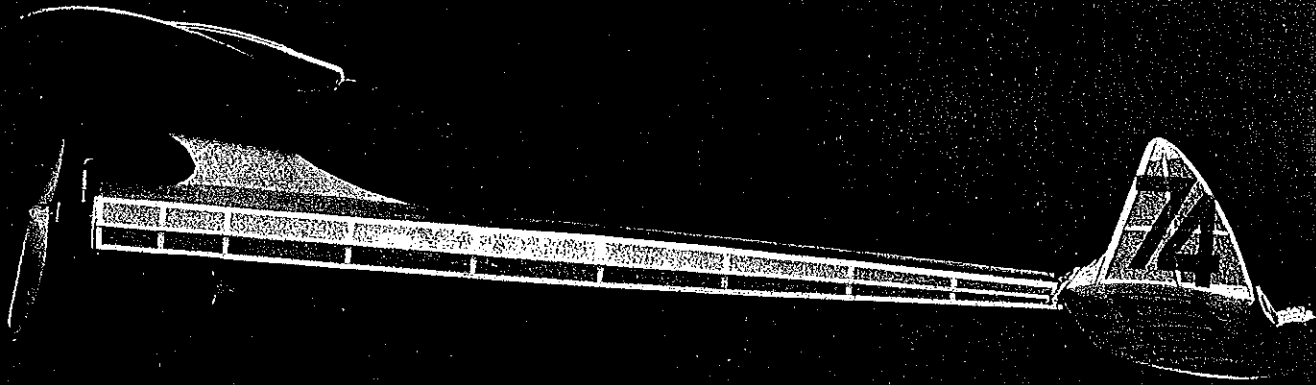
**Construction.** Begin with the flying sur-



Two stages in constructing the wing. At left, the leading edge, trailing edge, and tips have been pinned down, and the lower ribs have been positioned. A 1/16 sq. strip at about mid-chord temporarily supports the lower ribs. Right: Spars and the upper ribs have been added.



Left: The last step in building the wing is to separate the panels and rejoin them with the proper dihedral. In this picture, one main panel has been rejoined with the center panel. Right: The completed and assembled framework and the original October 1949 Model Airplane News article.



The model's small size and low weight make it ideal for sport flying from a small field. CO-2 power has a special appeal, as well.

faces by making the laminated curved tips. Cut out cardboard templates to match the inside contours of the wing and stabilizer tips and fin trailing edge. Use three strips of  $\frac{1}{2} \times \frac{1}{2}$  balsa for each piece. Wet the strips, coat their mating surfaces with Titebond glue, and tape the strips around the templates. Let them dry and make another set of wing and stab tips.

Start with the wing, and pin down the leading edge (LE), trailing edge (TE), and

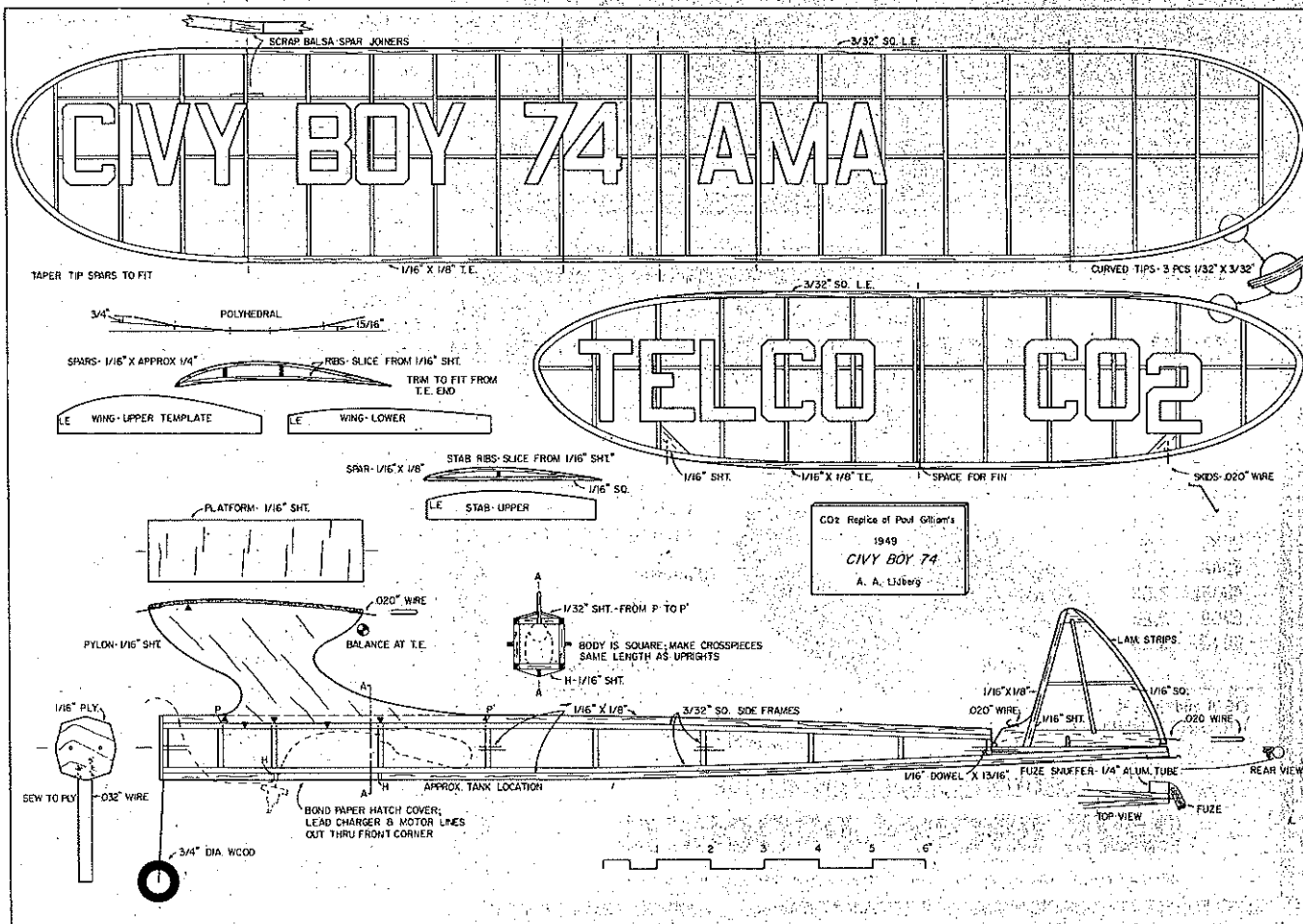
tip-pieces on the building board. Put pins alongside the wood; not through it. Make up the rib templates from cardboard or thin plywood.

Begin with the lower rib template, and slice the required pieces. Fit and glue these in place, trimming them from the TE end to fit at the tips. Cut out the same number of upper rib pieces. Note that these need to be tapered at each end so they will mate correctly with the lower ribs.

Using some of the upper rib pieces, you can now check to see just how tall the spars should be. Carefully sand the spar strips to the correct width, and glue them in place. Note that the spars need quite a bit of taper at the tips. Fit and trim the upper ribs, and glue them in place.

After the wing is assembled, use a razor saw or sharp knife to separate it into panels. Sand the mating ends and block

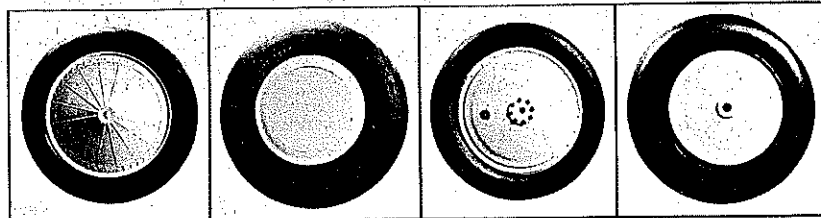
*Continued on page 84*



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1 1/2"	5"
1 7/8"	6 5/8"

### SMOOTH CONTOUR

3/4"	2 3/4"
1"	3 1/4"
1 1/4"	3 3/4"
1 1/2"	4 1/2"
2 1/4"	5 1/4"

### GOLDEN AGE

sizes:	2 1/2"
3/4"	3 1/8"
1"	3 3/4"
1 1/4"	4 3/8"
1 1/2"	5"
1 7/8"	6 1/2"

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3 1/4"	5 1/4"
3 3/4"	

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up the tip panels so they can be joined to the main panels at the proper angle. Scrap pieces of spar stock can be used as joiners to reinforce the spars where they were cut. When the tips are dry, cut, sand and re-join the main panels at the proper angle to the flat center section.

Build the stab in a similar manner, but use 1/8 sq. for the lower portions of the ribs. Build the fin now, too, and you'll be just about done with the flying surfaces.

Make up a fuselage side frame in the traditional manner. When dry, make another, identical side. Because the basic fuselage is square, the sides can be joined over the plan side view, using crosspieces of the same length as the uprights.

The pylon should be cut from a stiff piece of 1/8 sheet. It should be notched to fit over the body crosspieces. Glue it in place, and fit the 1/2 sheet brace pieces.

Add the 1/8 x 1/8 strips forward and aft of the pylon, and on the sides and bottom of the fuselage. The side strips should be tapered from about the middle of the body all the way to the rear, before being glued on.

Cut out the ply motor mount, bend the landing gear wire (with wheel in place), and sew the wire to the back of the mount with heavy thread. Cut out the wing platform, and glue it on—followed by the wire hold-downs. Cut away the lower body strip for the hatch, and glue on the small "H" pieces.

It's time to fit the motor, so carefully bend the copper tube leading to the tank so that the tank will fit about where it is shown. The forward end of the tank must be higher than the rest for best performance. Lead the tubes out near a front corner of the hatch opening, and bend the motor tube to lead on up toward the top of the mount. If there's too much tubing, carefully wind the excess into a 1/2-in.-dia. coil shape. Mount the motor with small wood screws.

Sand each part to final shape and smoothness to prepare for covering. Cover each part with a separate piece of tissue as necessary to prevent wrinkles. On my model, five pieces of tissue were required on the wing's lower surface (i.e. one for each panel), but the upper surface required a separate piece between each pair of ribs on the tip panels. The fuselage was covered with eight long, thin strips—one for each pair of lengthwise sticks. (To save some time, I just dyed the pylon with a yellow highlight marker to match the body tissue.)

Lightly water-shrink the tissue covering, and apply just one coat of Sig Litecote dope or some other non-tautening nitrate dope.

Part of the charm of the original Civy Boy models comes from the extensive tissue decoration. You can duplicate this fairly easily by photocopying the wing and stab plans and using the copies as tissue-cutting guides. On a sheet of thin cardboard, tape down some dark tissue. Tape

Continued on page 167

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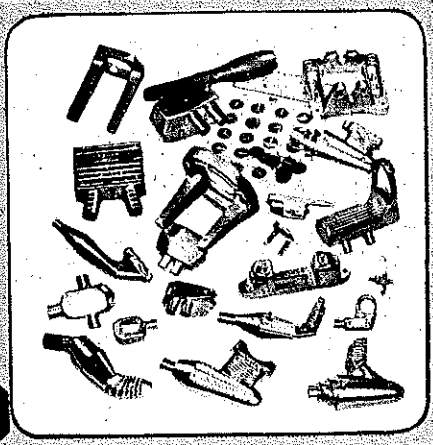
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In addition, I think that the 1984-1985 AMA rule book, paragraph 17 of Section 23 (CL Speed) needs to be revised by adding the following sentence just before the last sentence of the paragraph: "In addition, models should maintain a flight altitude which is generally at (or above) the height of the pilot's hand holding the control handle." The last sentence of the paragraph would then be revised to read: "Maintenance of flight outside of these limits, as specified for the various classes, for more than one-half lap shall constitute a foul."

I still think we need a class limited to a specific engine—and maybe a specific plane, as well—for the beginners.

You do a good job with your column. Keep up the good work.

That's all for this month. Comments on Ross' letter should be sent to me.

Gene Hempel, 301 N. Yale Dr., Garland, TX 75042.

**Civy Boy CO-2/Lidberg**

*Continued from page 84*

the copies over the tissue, and then cut out the letters using a metal straightedge to guide a sharp #11 X-Acto blade.

Adhere the letters with thinner applied with a small brush. The original Civy Boy 74 in the MAN article featured "Atwood Triumph" lettering on the wing's underside; that's why my model says "Telco CO-2." I don't work for Telco, so this is a free plug, but I do want to encourage use of CO-2 motors.

You don't have to install the dethermalizer (DT), but it would be a shame to lose the model needlessly in a thermal. Install the 1/8" dowel, the fuse snuffer tube, and the wire hooks as shown on the plan. A piece of strong thread or .008 to .012-in. Control Line wire is used as a limit string so the tail will pop up to about 40°. If thread is used, be sure it won't contact the fuse, or the tail will pop off instead of up.

Check over each panel of the wing and tail for warps, and steam them flat if necessary. Assemble the model. It must balance at the wing's TE. For adjustment, move the tank forward or aft. Small bits of clay ballast may also be used. When the tank is located correctly, brace it in place and make the bond paper hatch cover.

Begin test glides with a 1/8" shim under

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the stab TE. A bit more thickness will probably be needed for a good glide. Move the tail assembly around a bit so there's just a hint of a left glide turn; then add some 1/8" sq. by 1/4-in.-long keys to position the stab on the platform. Make sure the keys are glued to the stab and that the stab is still free to pop up.

Try some low-power flights. The Civy Boy should climb gently to the right even at a low setting. If it won't, there's a warp, or rudder or engine offset that needs to be taken care of. Work up slowly to more power, using the throttle. Most of my CO-2 models fly best when using less than full power.

Hope you enjoy the Civy Boy replica. I believe you'll find it to be a relaxing and rewarding type of modeling.

**Screamin' Eaglet/Hunton**

*Continued from page 91*

much more sensitive and responsive as compared to the stock kit Eaglet. You may want to get an experienced pilot to help check out and trim your new model;

however, you will quickly become acclimated and appreciative of this higher-performance variation.

**Softee/Johnson**

*Continued from page 95*

everything is built onto it for simplicity and accuracy. The 3/8 sheet should be cut roughly to shape, having been traced from the plan with carbon paper.

The stabilizer-elevator assembly needs to be cut out, sanded, and pre-hinged in this technique. If the hinge centerlines are dipped in warmed Vaseline, the adhesives and paint won't stick to them. The assembled unit is carefully placed over the crutch; when properly aligned, it is CyA-glued. Use scraps of 3/8 sheet to make absolutely sure the stab-elevator assembly is level.

Pin the crutch flat over the drawing, using the extension lines to locate the position of the formers. The Lite Ply should have the engine mounts epoxied to them at this time. With 5-min. epoxy, assemble the bulkheads and sides over

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