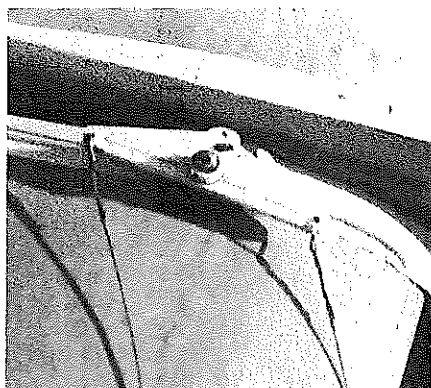


Author/designer Phil Cartier, with an SC-1. Serviceability certainly exceeds good looks.

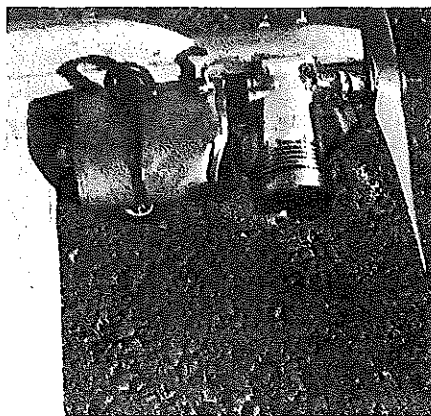
• The SC-1 is for real combat freaks like me . . . and you, if you're reading this article. The SC-1 is as sturdy, trouble-free, and easy to build as possible. It cuts out many workshop hours of building and re-building practice planes. I was hooked on combat the first match I flew. In my first contest, I flew fast combat over asphalt. Lot's a luck and a little skill got me second place. Ever since, it's been a tough job keeping enough planes in one piece to fly competition and still get in a few practice matches. Now, with the SC-1, I can save the super-competition eggshells for contests, and still practice.

The main feature of this design is a replaceable foam wing. Ordinary vinyl tape holds the wing in place in the fuselage saddle. It takes only minutes to replace a mangled wing. As a bonus, the foam wing is much easier to build and lighter than a balsa wing. The weight and time saved go into making the fuselage as crash resistant as possible.

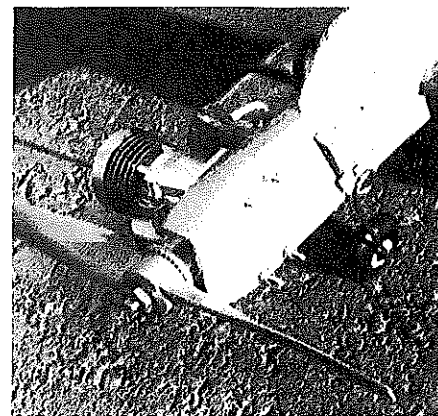
The fuselage has nearly full-length plywood doublers. Slow combat planes always break just behind the wing, so it makes sense to reinforce this weak spot before the crash. The motor mounts extend forward nearly to the propeller.



Extremely simple outside bellcrank mount.



Tank is unflow vented for consistent runs. Engine is home-brew "McFox" 34.



Instantly detachable landing gear has shock absorbing coil for smooth landing in grass.

# SLOW COMBAT SC-1

By PHIL CARTIER . . . Combat in any form is a rough game. The best "weapon" is one that is expendable, easily pirated, or quickly repaired.

This helps protect the engine and keep it out of the dirt. The external controls don't look too neat, but they're very practical. After a crash, it takes only a glance to check out the controls and spot any damage.

I'll frankly admit, the SC-1 is not the flyingest slow combat design. A Mongoose or a Spider will go a few MPH faster, and turn a couple of feet tighter. They also are expensive to build and break into many, many pieces in a crash. The SC-1 has it all over them in consistency and durability. Half-a-dozen people in our club have built SC-1's. They all fly the same, and they keep on flying long after the super-competition jobs have bitten the dust. So, build a couple of SC-1's for Sunday afternoon dog-fightin', and get the practice you need for combat flying.

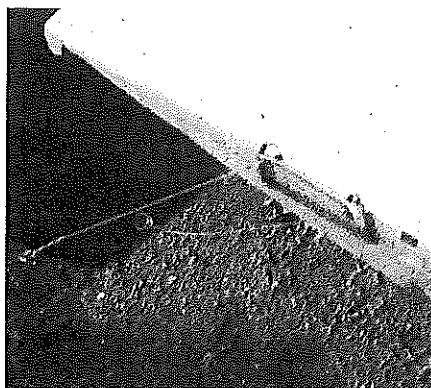
A couple of the pictures show a unique slow combat engine, a McFox 34! I had a Fox 36 which ran well, but vibrated terribly. A McCoy 35 sleeve was turned down to fit into the Fox case. A new head with a squish band and a cone-shaped combustion chamber was

turned out, along with a new rod. The piston is stock McCoy, with the skirt filed slightly to clear the crank. It has the low vibration of the McCoy and the light weight and good power of the Fox. Since I wasn't sure it would even run, I'm really happy that it's turned out to be one of my better slow combat engines.

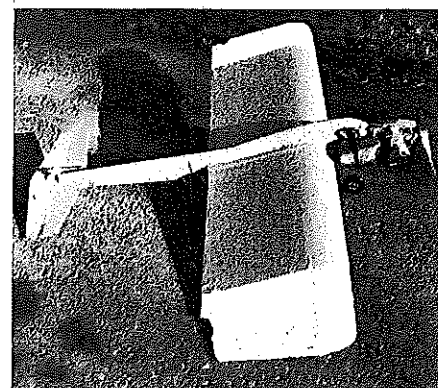
I'll just highlight the key points in the construction. Most of the building is conventional and not critical. Just do whatever you are used to for things like horns, hinges, glue, tank mounts, etc.

Start construction with the wing. You'll need it to work on the fuselage. Either learn how to cut foam, or find someone to do it for you (Wing cores and complete kits for the SC-1 are available from me on a first-come, first-served basis. Write Phil Cartier, 3314 Russell Ave. N. Minneapolis, MN. 55412, and send a stamped, self-addressed envelope for details). Foam cutting isn't difficult. It just requires some practice, and a couple of pieces of special equip-

*Continued on page 83*

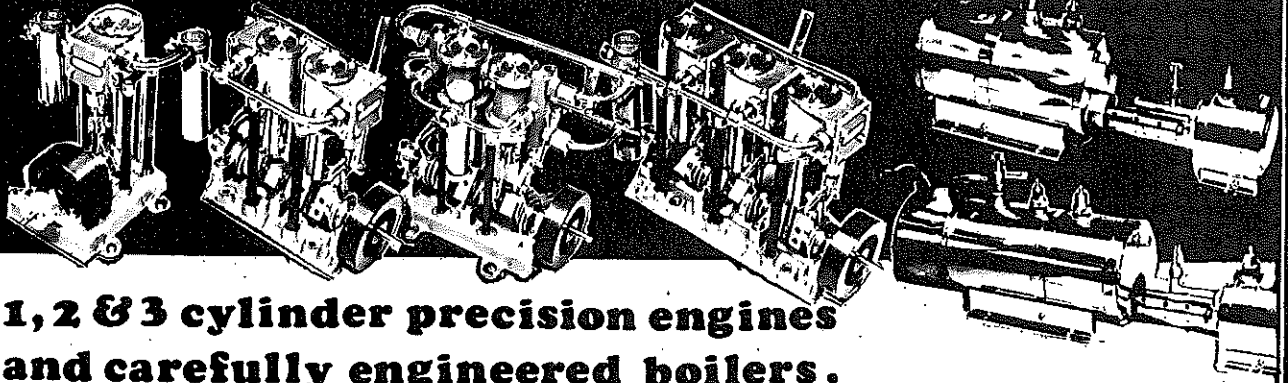


Leadout guide. Leadouts can be threaded through when changing wing.



Looking a bit ratty after a full season of combat, this SC-1 is still ready to go, upon call.

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getting the n/l. Best of luck to Ted, he is asking for an awful lot of work.

### STRENGTH IN NUMBERS, LET'S ALL HANG TOGETHER, ETC.

In C/L, we now have 5 special interest groups doing their thing. This is super, as all of the groups are having a very significant impact on their own events. But isn't it about time to consider consolidating all of these groups into one big one . . . a large band of C/L fliers interested in their favorite event and yet ready to help when C/L in general needs a big stick?

The F/F guys already have this in their National Free Flight Society (NFFS). Back a few pages, I said that we ought to be aware of what others are doing. Here is the perfect example, let's let the F/F guys show us how to set up a national organization and then get on with it. It's the next logical step for our special interest groups, and the sooner we consolidate, the better.

### GET READY TO GRAB YOUR BLADDER

I'm convinced that many didn't really believe it when we announced that we would be giving away Phase Linear speakers and an amp at the '76 Bladder Grabber Combat Meet. But we did, to the shock of many.

In '77, we will be having two Bladder Grabber contests, and the ante has been bumped up considerable. At each of these years B/G's, we will be awarding a

complete Phase Linear system . . . speakers, amp and pre-amp, to first place. Prizes for second, third, etc. have not been determined yet, but count on about \$4,000 worth of top-notch stereo equipment, modeling merchandise and cash to be handed out at each contest. How's that grab your bladder?

The first B/G will be held in June or July . . . we haven't picked the date as I write this. If you're interested, drop me a note and I'll send you a contest flyer. The second B/G will be held in September, and I'll have a definite date on it in the next issue or so.

If you do come to either B/G, be prepared to fly. It took 8 rounds to win in '76 and will no doubt take 9 or 10 to win in '77. Condor Legion-style double-elimination, of course. Is there another way?

### NEW DIRTY ADDRESS

By the time this issue hits, I'll be moved into a new house, so maybe I ought to give you the new address. Try: Dan Rutherford, 4705 237th Pl. S.E., Bothell, Wa. 98011.

### SC-1 . . . . . Continued from page 45

ment. Once you learn how, the time and money saved will make you ask yourself, "Why didn't I do this earlier?" Since books have been written on the subject, I won't go into it now. Pick up

RC Modeler's book on foam cutting, or get a friend who has done it, to show you how.

The best material for the wing is styrofoam beadboard insulation from a lumber yard. This is usually available in several sizes. Get a piece 2 inches thick, by 2 ft. by 8 ft. Using the hot wire, cut out four 1 ft. by 3 ft. blocks. Each block gives two wings when cut according to the diagram on the plans.

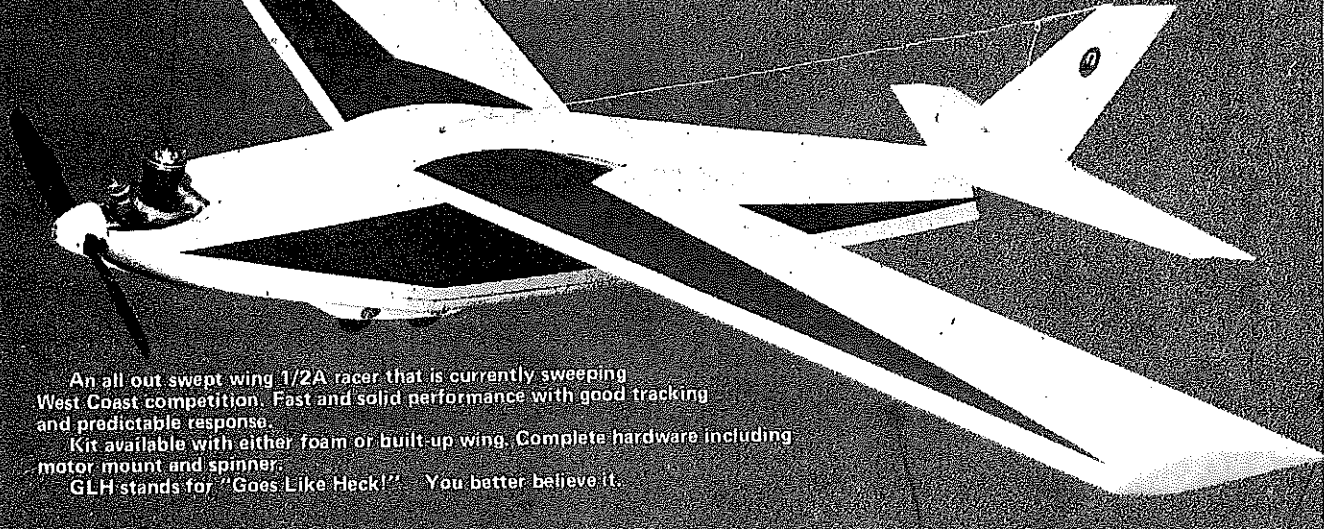
The spar slots can be cut several ways. For a large number of cores, set up a radial-arm saw with a dado blade. If you're only doing a couple of cores, make a narrow sanding block to sand the slots to shape. With a yardstick taped to the core as a guide, the slots can be sanded to shape in just a few minutes. By whatever method, make the slots slightly undersize so that the spars fit snugly. Glue the spars in place with aliphatic resin glue, and allow to dry. Sand the core smooth with No. 100 paper on a large block. Cover the wing with Solarfilm or one of the other low-temp, plastic coverings.

Epoxy the motor mounts and doublers to the fuselage. When dry, drill holes for mounting the engine, tank and landing gear. Mark the location of the wing, using one of the cutting templates. Saw out the wing opening. Make the cut-out exactly on the previously marked line. This provides just enough clearance for the wing saddles. Notch the bottom

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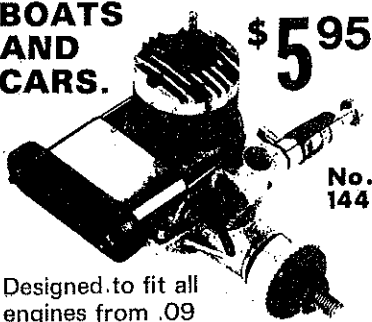
Please send me your complete catalog. Enclosed is \$1.00 which is refunded on my first order. (Add \$.50 for 1st class mail return; add \$1.00 handling on all other orders.)

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of the cut-out for the bellcrank mount. Temporarily tape the saddles to the tip of the wing. Epoxy the saddles and bellcrank mount into the fuselage, using the wing to line things up. When the glue has cured, remove the wing. Put a layer of fiberglass and epoxy all over the bellcrank mount area. Add the canopy and rudder. Sand off all the rough spots and finish with dope, epoxy, or your favorite finish.

Now it's time for final assembly. Bolt on the bellcrank and hook up the controls. Slide the wing into the fuselage. If it is not a snug fit, put several layers of masking tape on the centersection of the wing. Square up the wing and tape it in place. The best way to apply the wing tape is to just lay it into place. If it is stretched during application, it will tend to pull back later on. Bolt on the engine, landing gear, and tank. The beast is now ready to fly.

At this point, I'm going to pontificate (!) a little bit for the benefit of those new combat flyers out there. You seasoned veterans are excused . . . Go giggle in the corner or something.

There are two main ingredients for successful combat flying. One is a dead reliable, tried and true airplane, engine, and pilot. The other is practice. The SC-1 is a sturdy, easy-to-fly plane. It will keep you in the air. Pick any of the readily-available plain-bearing 35 engines. Learn its idiosyncracies, and you'll have

a reliable engine. The hardest part is the pilot. Make every flight a practice flight. Don't diddle around. Find the combination that will give you one or two-flip starts. In the air, learn to fly with both hands. Learn to do loops, lazy-eights and wing-overs without looking at the plane. And above all, fly practice matches . . . Not blood-and-guts, go-for-the-kill, but just friendly tail-chasing. Fly with everybody you can. Get used to watching your opponent without piling your own plane in. But most of all, remember that this is a hobby and have fun!

Keep 'em flying.

### Power Boats . . . Continued from page 43

support, from the center of the bulkhead to the nose of the hull. This helps give the deck extra strength. A side note for later construction . . . when attaching the deck, spot-glue a piece of heavy yarn to the deck support. Before attaching the deck, juice up the yarn with resin; once cured, the center of the deck is anchored in place.

The shaft centers of the outdrives are mounted 2.75 inches apart (same distance between the centers of the Octura mount) and 1.5 inches from the running surface of the hull (not the keel). The outdrives are mounted with 8-32 cap screws, with tee-nuts installed through a 1/4 inch plywood transom doubler.