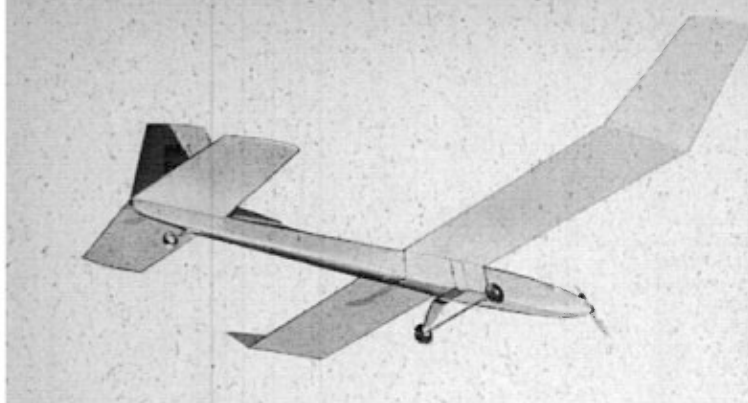


THE "CHALLENGER" FOR NEW-RULE CLIPPER CARGO CONTESTS

American Modeler — July 1959



■ Now that the rules have changed for the Clipper Cargo event it won't be necessary to have a truck to transport your model to or from a contest. And most workshops will once again be large enough to build and store one.

The span limitation of 48" coupled with the .020 engine is a realistic limit. But perhaps the most important change in the Clipper Cargo rules is that of being able to build a heavier model without being penalized: as the rules now state, the model's performance will be judged on the total weight lifted including the weight of the model.

This means models can be built more rapidly and ruggedly, through the use of more balsa and simplified construction—features lacking before. Streamlining will undoubtedly come into vogue since added weight can be used to advantage.

The "Challenger" was designed with all this in mind, plus some of the elements associated with every competition—spectators, other contestants, parked cars, to name a few. The all-balsa structure featuring a partly solid fuselage provides a solid mount for good engine operation, the solid wing and tail assembly can be patched on the field and flown before the cement dries.

Anyone who has built a hand-launched glider will have no trouble with this type of construction. Flying the model is easy. Landing gear and wing can be shifted until best take-off and flight characteristics are obtained.

The cowling is cut from a 1½" diameter spinner.

Landing gear is standard deBolt available in most shops. A standard tank and Tatone flight-timer can be used instead of the illustrated external fuel tube-tank if desired. You make your wheels or if you can find some old "Heli-Arc" wheels, which had brass hubs, these are ideal.

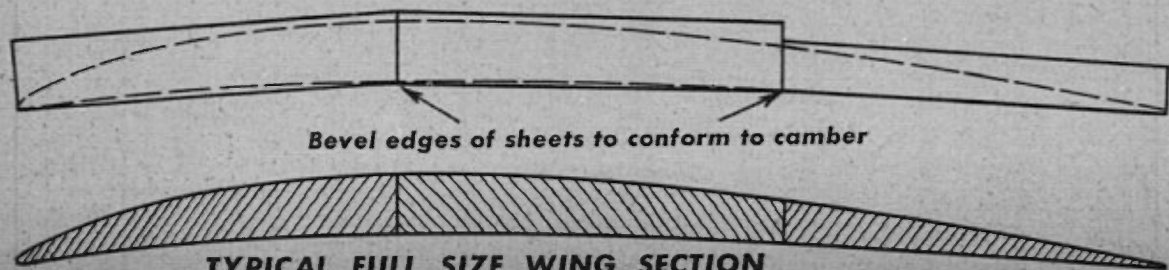
Cut out fuselage sides; cement them to the 1¼" thick block which is cut out to take the dummy and payload. Cement rear sides together; inset top and bottom triangular rear sheets.

Cut firewall and cement lightly in place, adding spinner which is held with cement until fuselage is shaped. Using spinner as a guide, shape nose as shown. Remember the fuselage must remain rectangular where wing and gear attach.

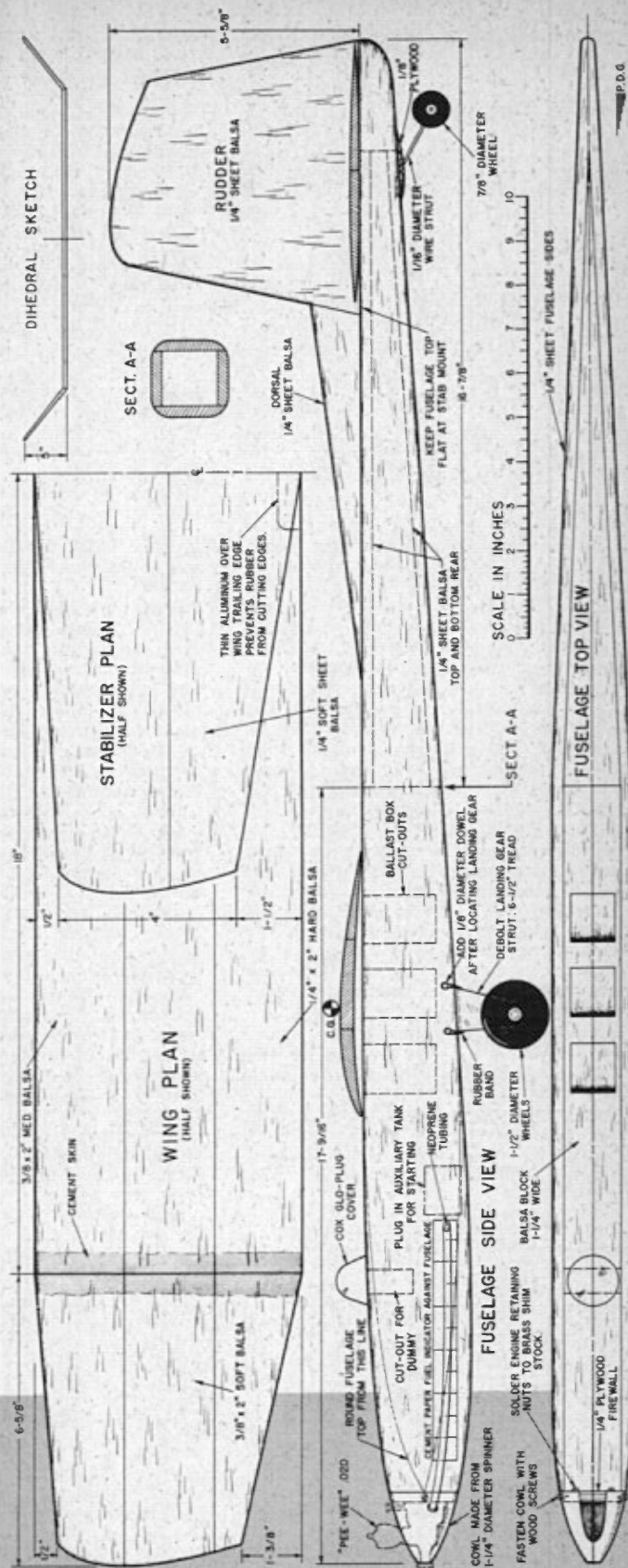
Cement balsa sheets together for the wing—the edges are beveled where they cement together to give undercamber. This is easier and more accurate than trying to sand it in. While wing is drying, install tank and timer if internal set-up is used. See June AM for various PAA-Load tank arrangements.

The engine can be mounted; to get the engine on and off, wood screws are not satisfactory. Solder nuts to a strip of tin
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Quickly-built contender will absorb a lot of punishment while making you a real threat...



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Challenger

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and anchor it to the back of the firewall. When cementing firewall in place check to see that it is not out of line (cut small holes for the protruding nuts in the front of the fuselage). Cement carefully, apply several coats.

Bend the tail wheel axle, bind to hardwood support, cement in place. It is essential the model roll freely along the ground. Slip axle in place, cut to size. Solder retaining washers, check that wheels turn easily.

The wing starts by sanding with rough sandpaper the entire bottom. Then smooth with finer paper. Tips are tapered, then carve the airfoil section. The small planes that use a razor blade are excellent for this; held at a slight angle to the grain they work best. Complete tips and final sand entire wing.

Cut tail assembly and shape. This should not be too thin since the model has to be handled a lot; a knife edge will not wear well. Assembly is cemented together then cemented on fuselage.

Sand entire model with 320 wet-or-dry, then dope. We used clear fuel-proof dope and sanded between each coat to achieve a fine finish. The leading edge surfaces were color trimmed; should the model be nicked, patches and repairs will not be noticeable.

Bevel tip edges so the dihedral can be cemented in place. Cement these joints especially well several times, spreading the cement as shown. This forms a sleeve which strengthens the joints considerably.

Glide the model when you have it balanced as shown. Keep adding incidence to the wing to get as flat a glide as possible. It will glide a little fast, but it should still glide flat.

We took a Grish 5"-2" wood prop, sanded the edges thin and reshaped it.

This has more area than comparable plastic props and added thrust. When resanding and shaping the propellers, be sure to rebalance—an unbalanced prop will mean less rpm and lower performance.

Select a reasonably calm day for your first flight tests. This will enable you to scrutinize the model's trim and handling characteristics, enabling you to quickly trim for optimum performance.