

AIR FORCE'S TOP TEAM RACER

CHOW HOUND



When the wild-blue yonder boys flew in the AF's International Model Meet—this was the best of the racers

■ Have you ever felt you had to have another entry for that contest just four days away? That's the way we felt, and so to the drawing board. We had to have a team racer and building time was scarce. Forty-five minutes later, out from under the drawing board crawled the *Chow Hound*. The original plane was built in two days and a night. After about twenty test flights we were ready. The next day, at the U. S. Air Force's First World Wide Model Airplane Championships, the *Chow Hound* sailed over the finish line 16 laps in front of the second-place plane.

In construction of a team racer, the most attention should be given to the engine. You must be able to start it easily even when hot. So test your Class B engines and pick the best one. We used a radial mount in the *Hound* which means the ship will take an Ohlsson, Veco, Orwick or Torpedo. With minor modifications you can shift over to

a McCoy, Dooling, Fox or Forster. We have flown the *Hound* with both an Orwick and Torpedo .29. The K&B was faster, but the Orwick was more economical with the fuel—so it's wise to conduct your own flight tests.

For a smoother cowl we cut off the beam mounting lugs—but this is not absolutely necessary. The hottest ship doesn't always win—but the most reliable one usually does.

Begin construction on wing by cutting leading edge to shape and notch for 3/16" ribs. The purpose of thick ribs is to give more surface for gluing, eliminating much of the warpage when dope is applied. Cut out wing ribs and glue in place. For sheeting wing, use 1/16" x 6", or 2 sheets of 1/16" x 3" glued together. Glue sheeting to tops of wings first—and spread it on. Use pins to hold in place. When this is thoroughly dry, sand a taper to inside of trailing edge so bottom sheet will lie flat.

Glue bottom sheet in place, using pins or weights to hold forward part of sheet in place, and clothespins on trailing edge. When dry sand to air-foil shape. Notch out space in bottom of the center section to inlay the 3/32" plywood bellcrank mount. This must be mounted strong enough to take at least a 30-pound pull test when the ship is finished, so for safety's sake, mount it securely. Install the wingtip guide and lead-out wires.

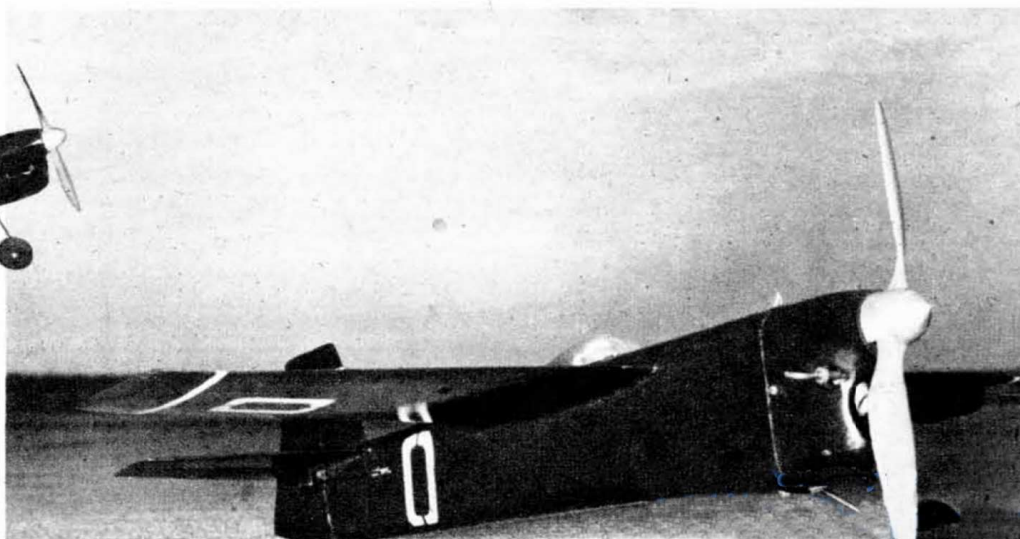
Now comes the fuselage. Cut firewall from 1/8" plywood and drill motor mount holes for radial mounting. Glue sides cut from 1/8" balsa sheet to firewall. Next add formers A and B. Now install 1/8" plywood landing gear mount. Strengthen this by gluing 1/8" x 1/8" strips in the corners. Glue formers C and D in place. Sand a taper to inside of tail end of fuselage sides and glue together.

While this is drying, start con-

By SGT. B. A. THOMPSON



The author, Sgt. Thompson, started National meet entrants with his 6-engine powered B-36 at the last Dallas meet. Previously he has entered a 4-engine B-17 job.



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struction of tail. Use 3/32" plywood for the rudder; 1/8" balsa could be used, but in case of a nose-over, with plywood you'll be sure of another flight minus delay. The horizontal stabilizer is 1/8" balsa. The elevator uses a 1/8" x 5/16" hardwood spar to keep both sides rigid with 1/8" balsa elevators. Install cloth hinges and sand to an airfoil shape.

Cut out fuselage sides and install wing, using glue freely. Now glue horizontal stabilizer in place. Attach elevator horn, then cut slot in right side of fuselage for pushrod. Bend pushrod from 1/16" music wire and then install. Bend tail skid from 1/16" music wire, glue, mount in place. Using 1/4" sheet, glue bottom onto fuselage. Leave front portion of bottom open to allow engine cooling air to escape. Using 1/8" music wire, bend landing gear to shape and attach to landing gear mount with "J" bolts.

Mount tank and fuel shut-off. The tank shown holds 1.8 cubic in. of fuel. That is, one oz., the maximum for team racers. Cut from tin, or shim stock, a triangle to solder engine mount bolts to. Attach to rear of firewall with small wood screw. Drill through the already drilled holes in firewall. Slide bolts in from rear and mount engine. Now solder bolt heads to triangle. Glue on top of fuselage—1/2" sheet. Cut a notch in the rear of the top for the rudder.

Start whittling. Round top and bottom, being careful not to cut through corners. Cut wing fillets,

from 1/16" sheet balsa and glue in place. Build up to shape with plastic balsa. Shape top to fit canopy and cut out for pilot's head. Now install rudder. Sand fuselage and empennage thoroughly. The cowl is next. This must be built around the engine you are planning to use. With a piece of soft rag, plug the intake and exhaust of your engine. Spot-glue 1/8" plywood cowl sides to firewall.

Cut slots for exhaust and needle valve, also for mounting lugs if they are left on engine. Carve hardwood blisters to cover the slot and any lug that extends out of the cowl. Insert blocks around engine as shown on plans, carving out the blocks before gluing so they fit tight around engine. Install 1 1/4" Froom spinner and carve cowl to shape and sand it. Cut out an air intake hole. Be sure it is large enough to provide adequate cooling, as a cool running engine restarts easier; and be sure you can choke your engine. Now cut a hole in the bottom of your cowl large enough to permit changing plugs. Cut away from the fuselage and glue two small hardwood blocks to the firewall to use as cowl hold-ons. Use a small wood screw through each side of the cowl into these blocks. By this time it should look like an airplane except for the wheels, so put them on. If we forgot to tell you to sand anything before, do it now.

Put on a coat of sealer. We used Aero Gloss on the original, because of its hot-fuel-proof qualities, and recommend its use—but remember,

everything must be Aero Gloss from the fillets on up. Sand and apply a second coat of sealer when this is dry. Sand and paint inside of cockpit. Build up headrest and radio. Paint these and then glue in pilot's head, install bubble canopy. Mask off canopy so it won't get smeared while rest of ship is being painted. From here on the finish is up to you, and don't forget a good finish helps.

Make up a wire (.016") with a clip on each end to hook between fuel shut-off trigger wire and down wire. Its purpose is to trip shut-off just as elevator hits full down. This is adjustable by length of the wire. Down was used instead of up, as too often the engine is killed on take-off when up is used.

With a little experimenting with props and fuel you will be able to increase your speed and decrease your fuel consumption.

1. 1 1/4" Froom spinner. 2. 1/8" plywood cowl sides. 3. 1/8" plywood firewall. 4. Tank filler tube. 5. 1 cu. in. capacity wedge tank. 6. Plywood bellcrank support. 7. Dummy pilot. 8. Plastic canopy. 9. Shaped 1/2" balsa turtledeck. 10. Racing numerals. 11. Control pushrod, 1/16" steel wire. 12. 3/32" plywood fin. 13. Air intake. 14. Ohlsson, Veco, Orwick or K&B Torpedo .29 engine. 15. Tank vent and overflow tube. 16. 2" dia. Hely-arc wheels. 17. 1/8" hard balsa sides. 18. Shaped 1/4" balsa bottom. 19. Lead from "down" line to D-E fuel shut-off. 20. Solid balsa leading edges. 21. 1/16" sheet balsa wing covering.

