by Paul DelGatto

Radio Control . . .

"CHAMPION"

47" span, .049-.099 Engines
For Single Channel R/C, sheeted body, simple-scale Lightplane Realism . . .

FULL SIZE "TIMELY PLANS" AVAILABLE AS ADVERTISED

Sheet rudder, built-up stab and wing. Champion planform closely follows accepted R/C designs. Trim and detailing is easy, takes little time.

▶ No plane has been more aptly named than the "Champion"! It embodies everything that a model designer hopes for at the drawing board.

To say that our model of the "Champion" was designed is misleading, for it is the type of airplane in which everything seems to come together naturally. Good looks, ease of construction, rugged-classic lines, short gear—well forward and most important: ideal proportions. When you put these all together, it's pretty hard to have anything but a real top notch design.

For a Rudder-only scale design, it handles as well or better than many original designs we've seen. It comes pretty close to being an ideal trainer-sportster and thus we recommended it not only to the ardent R/C flier, but also to those who are just getting their feet wet.

The model is constructed almost entirely of easily available material, much of which you probably have right at your disposal. You can either enlarge the plans to the scale indicated, or you can order yourself a set of full size plans through "Timely Plans."

CONSTRUCTION: Cut fuselage sides and doublers including tail doublers in place and then add the ⅛" square corner braces. While this is drying cut out all the formers, firewall and escapement mount. If a radial mount

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engine is being used, do not cut beam mount holes in the firewall and F-1.

When the sides are completely dry, cement F-2 and F-4 in place, being careful to keep the structure in perfect alignment until dry. Cement the 1/8" plywood firewall F-1 and F-2T in their proper location and hold with rubber bands wrapped around the sides until cement dries. If beam mounts are required they are installed now. The 1/8" x 1/2" wing mount braces are added followed by F-3, which serves as the escapement mount.

Make up the torque rod by bending and cementing .045" diam. music wire extensions to a 15" length of firm 3/16" square balsa. Drill torque rod hole in 3/8" square tailpost and taper to match sides. Slip one end of the torque rod through the proper hole in F-3 and place the tailpost block on the other end.

Bring tail together and cement the tail block in place, being sure both sides have taken the same curve and are in perfect alignment. Add 3/32" x 3/8" cross-pieces and uprights between sides. Form the tail wheel strut from .045" diam. wire and bind and cement to 1/16" plywood mount. When dry, cement in position as shown.

The main landing gear strut sockets are cut to length from 3/32" I.D. brass tubing and bound and cemented to the 1/16" plywood mount. Cement to the underside of fuselage as shown on the plans. Notch the 1/2" soft balsa bottom block to clear the landing gear mount tubes and cement in place.

Cover the bottom and top of fuselage from F-4 aft, with soft 1/16" sheet. Run the grain across the fuselage. Drill a hole in the tail block for the torque rod to pass through and adhere the tail block in place.

Position the engine and mark mounting hole locations. Drill holes

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and mount the engine with 2-56 screws and blind nuts. A suitable fuel tank is now mounted behind the firewall on the beam mounts, or in the case of a radially mounted engine, as platform is cemented between the firewall and F-1. The tank should be mounted securely to it. Remove the engine and cement 3/32" x 1/4" planking strips between the firewall and F-2T. Add the side and lower nose blocks. When dry, carve the nose, bottom and tail block to shape and then sand smooth.

Bend the 3/32" diam. wire landing gear legs to shape and bind pieces together with fine copper wire. Slide legs into the tubes in the fuselage and solder the front and rear legs together. Cut out 1/8" hard sheet landing gear strut fill-in pieces and cement in place. These are also wrapped with silk to give them added strength.

Add the 3/16" upper windshield frame and fairing block. When dry sand to shape and cement 3/16" front and rear wing hold down dowels securely in place. If a solid windshield is desired, this area may now be planked with soft 3/32" strips.

Cement receiver slide rails in place on F-2. Make the 1/16" plywood receiver board so it fits snugly between the rails. Cut out the 1/16" med. sheet stabilizer center sheeting and 1/8" hard filler pieces. Pin the bottom center-section sheet over plan. Cement the 1/4" x 1/2" leading edge and 1/4" x 3/4" shaped trailing edge to this. Place 3/32" shims under the trailing edge to maintain a symmetrical airfoil.

Cut out tips and cement in place. Add the 1/8" fill-in pieces and 1/16" x 1/4" ribs. Complete assembly by cementing the 1/16" sheet center-section top covering in place. Remove from board when cement is dry, round the leading edge and tips. Cut fin and rudder from 1/8" medium sheet and round all edges except those that will rest on the stabilizer. Use cloth tape or figure 8 stitched tape to hinge surfaces.

The wing ribs are all cut from medium 1/16" sheet. Mark location of ribs on leading and trailing edge and cut 1/16" deep notches where they join. Cut out 1/8" medium sheet wing tip pieces and pin down on plan. Locate the two 3/16" square lower spars and the trailing edge and then cement all the main ribs in position. Make sure they are perpendicular to the building board!

Cement the notched leading edge in place, followed by the nose ribs and top 3/16" square spar. When both wing panels are complete and removed from the building board, shape the leading edge and sand smooth all over.

Join the wing panels with 1/16" plywood dihedral joiners. Cover the top and bottom of the center-section with medium soft 1/16" sheet. Reinforce the dihedral breaks with gauze and a few coats of cement.

Give all parts a final sanding to remove excess cement and fuzz. Fill any dents or cracks with balsa putty and sand smooth. One coat of clear dope is now applied to all parts that the covering material will come into contact with, including the fuselage. Sand lightly after doping to remove the fuzz that it brings up. Light weight silk is used to cover the wing and stabilizer. The fuselage is also covered with silk which adds greatly to the strength with just a relatively small increase in weight. Cement the stabilizer and rudder in position. Make sure that the surfaces are in proper alignment before cement sets. Three or four coats of slightly thinned clear dope should fill the pores of the silk and give a good base for the colored dope. The original model was painted yellow and blue in the standard and well recognized "Champion" trim lines.

Spray on the colored dope if possible. This saves quite a bit of weight as less paint is needed to get even coverage. Mask side window outlines and paint white, silver or black. Cut out and cement clear plastic windshield in place. If you have covered the windshield area with balsa, then paint it the same color as the side windows. Apply decal numbers to wing and rudder.

Install wheels and secure with standard wheel retainers or washers soldered to axle ends. Bend the 1/32" diam. wire rudder yoke and fasten to the rudder with a short 2-56 screw and nut. Bolt the engine in place and hook up fuel line.

Install radio equipment, wiring and switch. Wrap batteries in foam plastic and place as far forward in nose as possible. This should bring the plane into proper trim or very close to it. Strap the wing in place and check the center of gravity against that indicated on the plan. If it is nose heavy, move the batteries rearward, if tail heavy, add weight to the nose. Drill a hole in the lower nose block and insert small lead sinkers for added nose weight.

FLIGHT TESTING: Pick a calm day for the first flights. Test glide into tall grass. You should get a fairly fast, flat glide path, not a slow floating glide which most surely will develop into a stall under power. Only a slight weight or wing incidence adjustment should be necessary to achieve proper glide trim.

When satisfied with test glides and the radio equipment is checked out, try a flight with reduced power. The climb should be gentle with no excessive turning. A slight turn in either direction is allowable, and can be an advantage in case of lost control. When altitude is gained, try right and left turns. Response should be approximately the same in either direction. If

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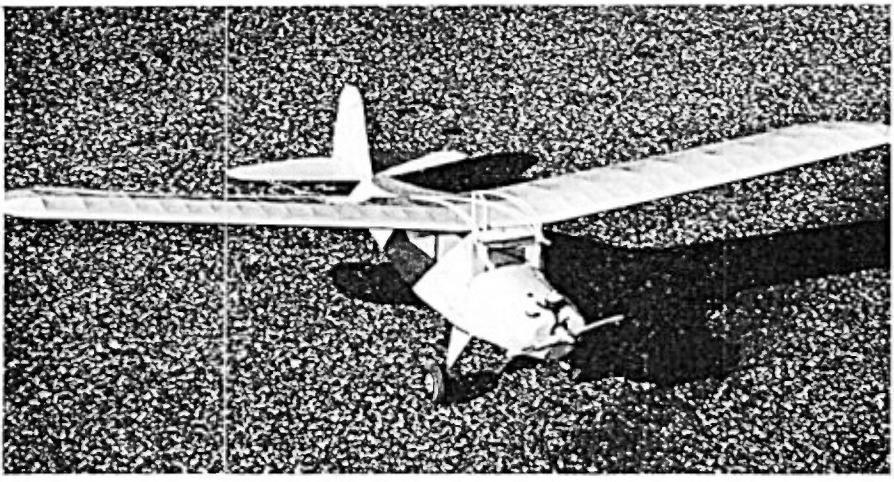

Fuselage is basically rectangular in section, a few formers sheeted all around. The false-ribs strengthen wing leading edge, improve airfoil.

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the plane is held in a turn it will take between 90° and 180° before it falls off into a spiral, if the rudder throw is correct. Move rudder yoke up or down to change rudder movement. Increase power on succeeding flights until full power can be used.

Now you can really have some flying fun. Hope you have a good season.

BILL OF MATERIAL

(Balsa unless otherwise specified)

3—1/16" x 4" x 36" (Hard) Fuselage sides, doublers, wing ribs
2—1/16" x 3" x 36" (Med.) Fuselage top and bottom, wing ribs
1—1/16" x 3" x 24" (Soft) Wing and stab center-section planking
1—3/32" x 3" x 18" (Hard) Fuselage, formers, fin and rudder
1—1/8" x 3" x 36" (Med.) Fuselage and wingtip formers, gussets
1—3/16" x 3" x 24" (Med.) Nose doublers, cowl and formers
2—1/2" x 1/2" x 27" (Med.) Wing leading edge
2—1/4" x 3/4" x 24" (Med.) Wing trailing edge
1—1/4" x 1/2" x 36" (Med.) Stab leading and trailing edge
1—3/32" x 1/4" x 36" (Med.) Stab ribs
1—3/32" x 3/8" x 36" (Med.) Fuselage uprights and cross-bracing
6—3/16" x 36" x 27" (Hard) Wing spars and torque rod
1—1/8" x 1/2" x 18" (Hard) Wing supports
1—1/2" x 4" x 18" (Soft) Fuselage bottom block and tailpost

.045 dia. wire; 3/32" dia. wire; cloth tap hinges; 2" dia. main wheels, 3/4" dia. tailwheel; 3/16" dia. wing dowel; celluloid windshield; silk or nylon covering material; fuel tank; .049 to .09 engine; fuel-proof clear and colored dopes; fuel-proof cement; 1/16" plywood; 1/8" plywood; 3/8" sq. hardwood (for beam mounts if used); 1/32" black trim tape for surface outlines; R/C equipment and batteries; decals. ●

Ample wing area, adequate stab area make this light plane a suitable design for active flying.