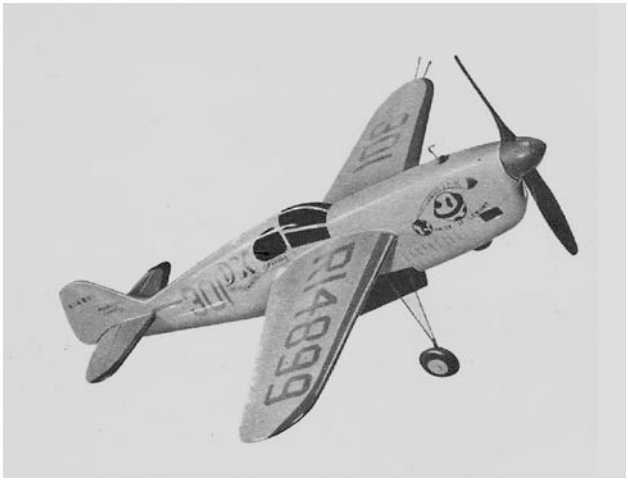
Folkerts Racer



One of the famous speed champs reappears as a slick flying scale model and with minor revisions you can use the "Jupiter" in official team races by Walter A. Musciano.

The 1937 Thompson Trophy Race was one of the most spectacular contests in closed-course air racing. At the starting signal Steve Wittman took the lead in his Bonzo and at the halfway mark was ten miles ahead of Col. Roscoe Turner flying the famous Laird Meteor. Third and fourth positions were held by Earl Ortman piloting a powerful Kieth Rider and Rudy Kling in his tiny Jupiter. Then a bird flew into Witt man's propeller forcing him to relinquish the lead to Turner.

The Colonel thought he cut the next pylon short and swung back to round it again. This put Ortman and Kling first and second screaming down the home stretch! Kling, flying much higher, put his Clayton Folkerts design into a dive, gaining additional speed to cross the finish line just one half second ahead of Ortman! Kling won by a half plane length, one of the closest victories in air race history.

The victorious Menasco air-cooled, in-line, inverted, 250 hp engine powered Folkerts averaged 256.91 mph.

Although our model with its 90 square inches of projected wing area falls short of the team racing rules minimum area requirements by 35 square inches, we recommend a semi-scale version for those modelers addicted to team racing. An enlarged wing outline is illustrated.

Use the same type wing structure and a transparent bubble canopy.

Powered by a Dooling 29, our model attained a speed of 97 mph, and it is only fair to state that our engine was not completely broken in! If you are after a model that will provide many hours of carefree flying as well as have a snappy appearance, you can install engines as small as .099 in the nose. It works swell!

The basic fuselage sides are the first items to feel the sharp edge of your razor blade. These are followed by the bulkheads. Be sure to cut out slots for the wing before beginning assembly. Bevel the rear of the fuselage sides as the top view illustrates and cement the rear together, meanwhile installing bulkhead "F." When thoroughly dry, install the remaining bulkheads, being liberal with the cement. Either beam or bulkhead type engine mounts can be used. The mounts must be securely glued to the plane and filleted generously. We used Weldwood.

Bend the wire landing gear struts, bind the joints with fine soft wire and solder well. Now wrap the landing gear assembly to the hardwood strut supports with crinoline or thread and cement thoroughly. The supports are cemented securely to the fuselage sides, again using" liberal quantities of cement.

Cement the 1/4" sheet fuselage bottom in place. Notice that the grain runs span-wise. The fuselage top is carved from a soft balsa block. This is cut roughly to shape around the bulkheads and spot cemented to the fuselage. Repeat this procedure for the nose pieces. Now carve the fuselage to final shape, consulting the sections, and sand well.

The cockpit enclosure is carved from balsa, but it can be plastic or celluloid as some builders prefer.

Carefully remove the fuselage top and nose with a sharp razor blade. Cut the empennage from 3/16" sheet and shape to a streamline section. Attach the control horns in place and hinge the elevators to the stabilizer. The latter is cut in one piece from tip to tip. It will be noted that we adhered to exact scale in the elevator hinge line, although it required the use of two control horns. This double horn system worked

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quite well and is recommended for the “scale die-hards.” Those who are less meticulous can use the alternate straight hinge line shown on the plan.

Our wing is extremely strong for its weight. It is built in one piece from tip to tip no dihedral is required. Start construction by cutting the hardwood (pine will do) spar to shape. Cut a slot for bell crank movement. Cement the ribs to it. Cut the two lower covering panels from 3/32" sheet balsa. These panels run from the model’s center line to the tip rib and must be cemented together along the edge in order to form a wide sheet. Seams are shown. Cement these panels to the bottom of the ribs, working on the flat portion first and, when dry, cement the lower covering panel to the curved portion of the lower camber, holding the covering ,to the ribs with straight pins until the cement has dried. Bevel the leading and trailing edges of the lower covering to follow the con tour of the wing ribs’ upper cumber. Install controls.

Attach lead-out lines to bell crank. Bolt the bell- crank to the hardwood mount cement bell crank mount to the bottom covering and spar. Attach the wire control rod to the bell crank and then cover the top of the wing with sheet balsa, butt jointed along the seams shown. Leave a slot for adequate control rod movement. Cement the soft balsa tips in place and, when dry, sand the entire wing until smooth

The completed wing assembly set at zero deg. incidence is now attached to the fuselage use plenty of cement. Connect the control rod to the horns. We feel it is important to solder the washers to the rear end of the control rod as illustrated in order to prevent misoperation due to binding or disengaging. Cement the stabilizer to the fuselage at this time. Test the control system. Cement the fuselage top permanently in place and add the fin and rudder. Notice the rudder is offset in order to maintain tension on the flight lines. All wing and tail junctions with the fuselage should be filleted liberally with several layers of thick cement or a prepared fillet compound. Sand the entire model lightly.

Using Testor’s Sanding Sealer, apply six heavy coats to entire model. Sand with 3/0 sandpaper after each coat is thoroughly dry, up to fourth coat. Last two coats &re sanded, with very fine wet sandpaper. Before we applied paint we brushed on two thin coats of Aristo-Craft white wood filler. This is sanded with wet fine sandpaper until it is virtually all removed except for the low spots. Now, wipe the model clean with a soft clean cloth and begin painting.

The entire plane is lemon yellow with red trim. Four coats of Testor’s yellow-colored dope should produce a line finish. When dry, mask off leading edges of wing and stabilizer and dope bright red. Rub to a fine luster with rubbing compound. Trim-Film is used for all striping and lettering.

After coloring is complete the landing gear covers are installed. These are made from shim brass or sheet aluminum. Cut away engine hatch and fuel proof with Tuff, the entire plane as well as cowl interior, twice. Install engine and replace cowl by using large dress snaps or droplets of cement.

Models powered by the smaller engines can be flown on .008" steel lines from twenty-five to forty feet long; however, the more powerful racing .29 cu. in. and up engines should be operated on .012" steel lines from forty to sixty feet long. Make certain the model balances at the point indicated on the plans. It is suggested that a smooth flying site be used, as the wheels are rather small and may snag in grassy sites. One word of caution to the less experienced flyer is not to try and zoom the model off the ground. Rather let the plane take off on its own and you will realize many hours of real flying pleasure whether you build this model as" a team racer, speed scale job or class “A” sportster.

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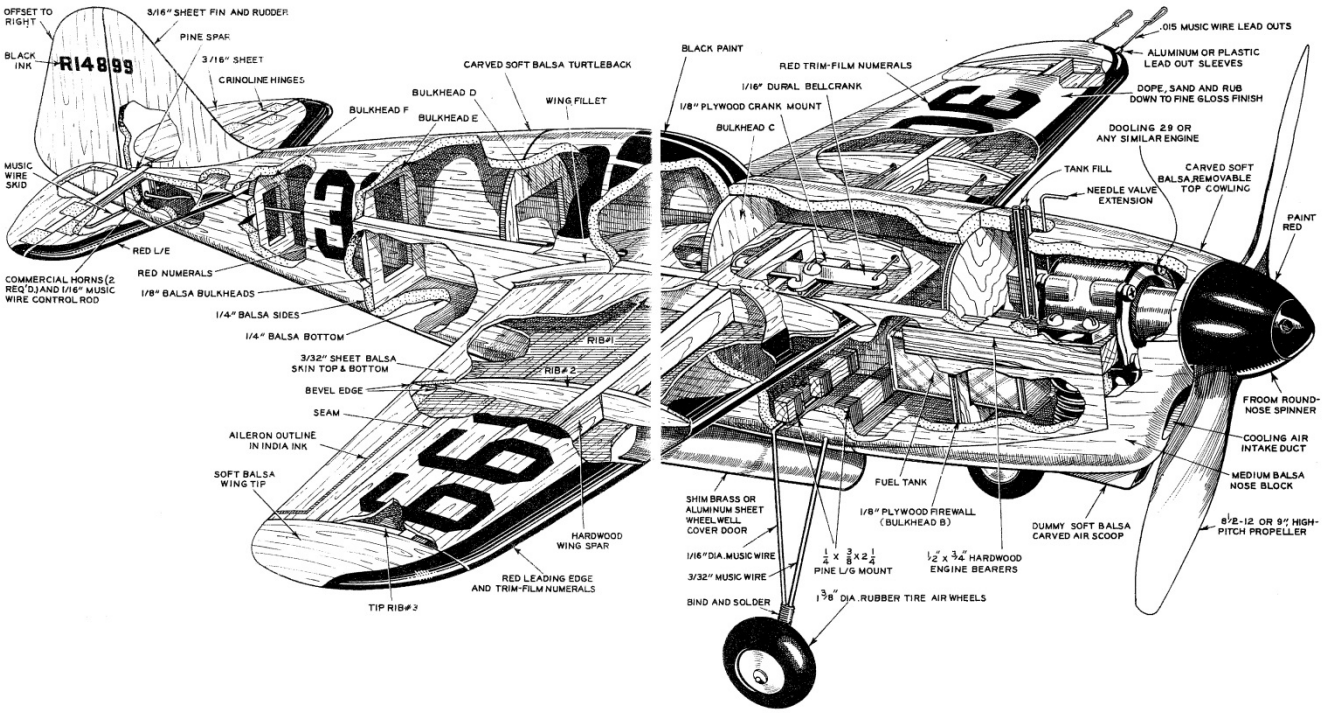

BILL OF MATERIALS

Fuselage. 1 pc. ¼" x 3" x 36" medium balsa, sides. 1 pc. ¼" x 2" x 18" medium balsa, bottom. 1 pc. 2" x 3" x 30" medium balsa, top and nose. 1 pc. ⅛" x 3" x 4" plywood, firewall. 1 pc. ⅛" x 3" x 12" hard balsa, bulkheads. 1 pc. 3/32" music wire, 12" long, landing gear; 1 pc. 1/16" music wire, 12" long, landing gear skid. 2 pcs. ¼" x ½" x 3" hardwood, landing gear supports. 2 pcs. ½" x ¾" x 4" hardwood, engine mounts. 1 pc. 1½" x 4" shim brass, landing gear covers.

Wing. 1 pc. 3/16" x ⅜" x 18" hardwood, spar. 2 pcs. 3/32" x 3" x 36" medium balsa, covering. 1 pc. ⅛" x 3" x 8" hard balsa, ribs. 1 pc. ⅜" x 3" x 4" soft balsa, tips. 1 pc. commercial dural, bellcrank. 1 pc. ⅛" x ½" x 3" plywood, bellcrank mount. 1 pc. .015" music wire, 24" long, lead-out lines. 1 ⅛" dia. 3" long plastic tube, lead-out line sleeves.

Empennage. 1 pc. 3/16" x 2" x 24" medium balsa, tail surfaces. 2 control horns.

Miscellaneous. 1⅜" rubber tire wheels, washers, solder, cement, wood filler, colored dope, brushes, Trim-Film, Froom aluminum spinner, 8½" dia. propeller, crinoline, pins, rubbing compound, sandpaper, milk bottle wire, nuts & bolts, Tuff fuel proofer.

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