fabulous FOKKER D-VII

by Paul DelGatto

Revered to this day as a fine fighting machine . . . a nostalgic biplane reminder of days gone by.

Scale Radio Biplane

Fox .10 up front, easily accessible. Flat sides make fuselage an extremely easy one to build.

Plenty of area to calm it down, though it is no ship for novices. Wings are rectangular, easy.

FULL SIZE PLAN NO. 220 MAY BE ORDERED FROM TIMELY PLANS AD

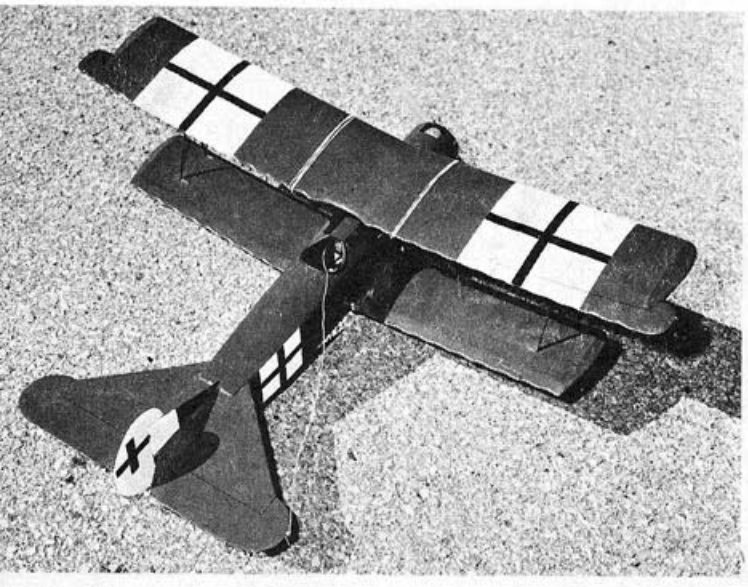
The Fokker D-7 of World War One fame needs no introduction to modelers, no matter what their particular interest. It has been built and designed for rubber fans, free-flight scale, controline addicts, plastic modelers and by other designers in a variety of sizes and proportions for single and multi-channel R/C rigs.

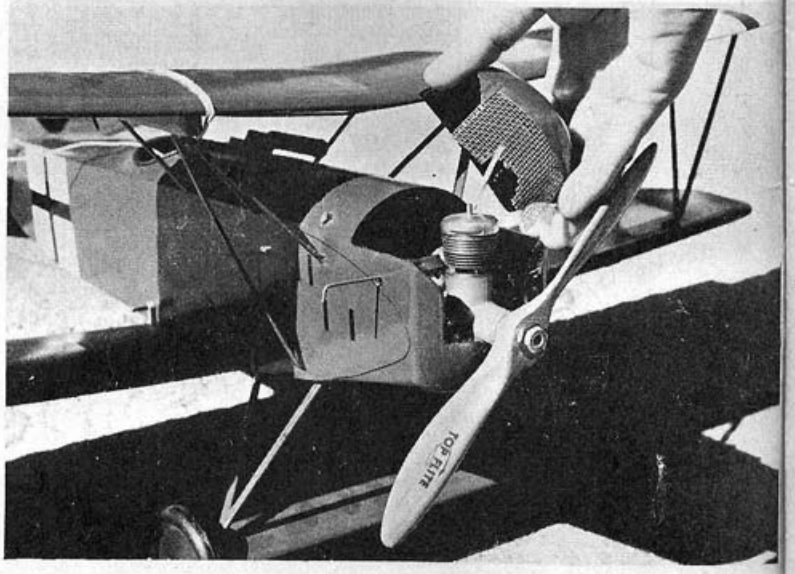
To be sure, there are many other suitable choices in a scale biplane which would fit anyone of the above categories admirably. However to deny a modeler the challenge of designing and building a model of a colorful vintage design such as the Fokker D-7, is like tempting someone with a pitcher of water after he's been out on the desert for a few days. It just can't be done!

How does the Fokker D-7 fly, you ask? Well, we wouldn't recommend it to an R/C novice. It certainly would be advisable to have at least a few hours of stick time behind you, because it's not an airplane that is very forgiving.

We like to think that it is a lot better flying machine than the original aircraft, and one thing that we can attest to without a doubt is the fact that it stays together a lot better than the original aircraft ever did.

In designing this model, consider-





Scalloped edges, the vivid color and its fearful fighting reputation made the D-7 a ship to remember. Stab is ample, cockpit fine for R/C.

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able thought was given to essential structural and flight modifications, which after testing, vindicated our judgement. Still more refinements have been included on the plans, which will add to the worth of the project. Despite the increased functionality of the model, much of the real Fokker D-7's proportions and appearance have been maintained. Once you have had the thrill of your first flight with your own Fokker D-7 you'll know what we mean about wanting to do projects of this type. So how about it? Why not get started on building one from the full size plans that are available. Or if you like scaling your own plans, be our guest.

Fuselage construction begins with cutting fuselage sides and doublers from medium 1/16" sheet balsa. If 3" wide sheet is used it will have to be butt-joined over the doublers. Cement doublers to the sides, being sure to make one left and one right. Accurately pencil location of formers on inside of fuselage sides. Cement 1/8" square upper and lower stringers in place along edges of sides.

Cut out firewall and all the formers. Cement the firewall and F-10A in their proper location, then carefully square up assembly and let dry. Bend the 3/32" diameter main landing gear to shape and bind with fine wire, or clamp with metal straps to 1/8" plywood F-3.

Form the front and rear cabane struts and mount on F-7 and F-8 using same method employed to mount the landing gear. Make sure these are exactly as shown on the plan as the upper wing incidence is determined by the length of these struts.

Cement all formers and braces in place between the firewall and F-10A, including landing gear and cabane struts, but omitting F2A, F2B, F4A and F-6. When dry, pull sides together at tail and cement the tapered tail-post in place. Add F-11, F-12 and 1/8" square crossbraces. The 1/16" x 1/4" stabilizer braces and uprights are now cemented in place, followed by 1/8" x 1/4" crossbraces.

Slide the 1/4" x 3/8" hardwood motor

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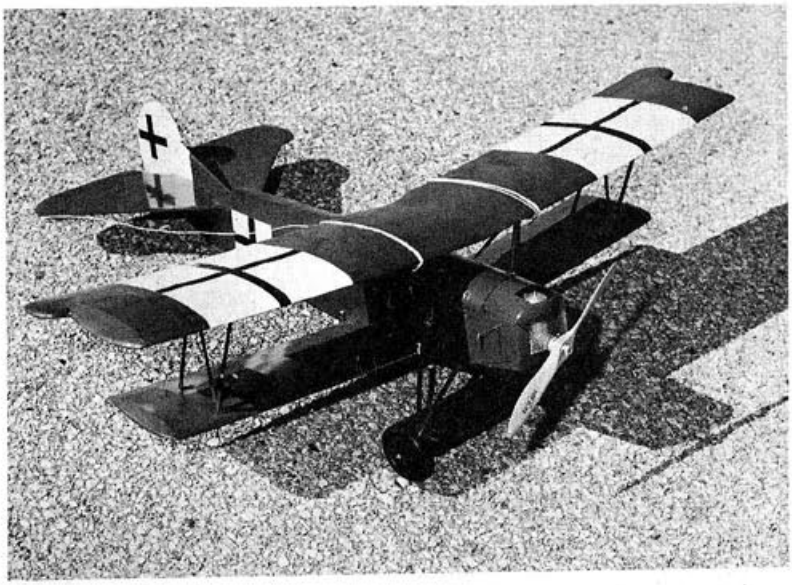

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mounts into position and cement securely. Cut upper wing mount supports to length and shape to a half round cross-section. Bind supports to the wire struts with heavy thread. Be sure to keep both bearers parallel to each other so the wing will not be twisted when it is tied down on them.

The torque rod is installed next. This is made from 3/16" square balsa with .049" diameter wire extensions, held on with thread binding. Temporarily mount the escapement and check whether the control operation is free. When satisfied that there is no binding, remove the escapement. Bend tail-skid to shape and bind to 1/16" plywood mount and cement in position.

Select soft 1/16" sheet for covering the top and bottom of the fuselage and run grain across the width on the bottom, extending from the wing trailing edge to the tail. To make the removable cowl, tack-cement F-2A, F-4A and F-6 in position and add the three stringers. Cover with medium soft 1/16" sheet, letting it extend to the front of the firewall. Remove when dry.

Drill holes in hardwood mounts and mount engine using "T" nuts to ease removal of engine, which should be done now to keep dust out of it while the nose is being shaped. Cement a 1½" x 2¼" x 3" balsa block under engine mounts and hollow deep enough to clear the crankcase.

Add cowl side blocks, followed by F-1, F-1A and F-1B. The removable top block is tack-cemented in place so it can be removed later. When blocks are thoroughly dry, curve and sand them to shape. Carefully remove engine hatch and again temporarily install engine. Cut holes for needle valve and exhaust, using the engine as a guide, after which the engine may be removed.

Bend the 1/16" diameter wire rear landing gear strut to shape. Bind to main landing gear strut and solder it securely. Carve landing gear cross-strut to an airfoil section. This should be made to drop free on all but the smoothest landings. To make removable, cement 1/16" I.D. tubing to the bottom of strut and reinforce with hinge material. These act as sockets for the inward pointing extensions on the rear landing gear struts. Spreading the wheels frees the airfoiled strut.

Install a fuel tank of appropriate size for the engine being used, behind firewall as shown. Route filler and overflow to suit tank and add F-2B over tank. Drill 1/8" holes for lower wing hold-down dowels and cement in place.

The stabilizer construction is self explanatory, the important thing being to keep it light by using very light, but firm balsa. The fin and rudder are also cut from light but firm 1/8" sheet. Cut out all wing ribs from medium to hard 1/16" sheet balsa. Rough carve upper and lower leading edges to shape now, as this will make it easier to arrive at the final shape later. Mark location of ribs on leading and trailing edges and notch edge 1/16" deep.

Pin leading edge, spars and trailing edge over plan. Cement all ribs except W-L in place. Add tips, tip bracing and interplane strut braces. When dry remove wing panels from plan and join with 1/16" plywood dihedral braces. Use blocks under the tips to get proper dihedral. Cement ribs W-I in place. Center-sections are now covered with medium to soft 1/16" sheet.

Scallop the wing trailing edges with sandpaper wrapped around a can or jar about 4" in diameter. Sandpaper leading edges to final shape, then sand entire wing to remove rough spots and sharp edges.

Wings and stabilizer are now covered. We used Silkspan and applied it wet. Covering wet is easier and faster than doing it dry. Wrinkles can be smoothed out more easily. Also, slight compound curves can be covered in one piece. When dry, apply one coat of clear dope on the wings and stabilizer, then sand lightly with fine paper to remove fuzz.

Cement stabilizer in place making sure it is in perfect alignment before securing permanently. At the same time add the fin. Again, alignment is very important. The fin must be exactly vertical to the stabilizer and in line with the centerline of the fuselage. Using cloth tape or heavy thread in a figure eight stitch, hinge the rudder in place.

Rudder linkage is added next. A single small bolt and nut allows the loop to be moved up or down to vary rudder throw. Bend the 1/16" wire removable interplane struts wires with fine thread and cement in place. In the same manner bind fairings to the

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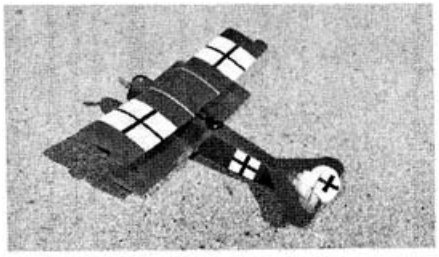

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cabane and landing gear struts.

Drill holes in strut braces at points indicated on the wing. Cement 3/32" I.D. eyelets in these holes. Eyelets hold struts in place but if wings are knocked off they are able to fall free. Strap the wings on with rubber bands, at the same time insert interplane struts in place. Check to see that the struts do not cause any twists in the wings. If they do, trim and fit them so they put very little pressure on the wings. The struts are for scale appearance and do not add any strength.

Remove the wings and give them and the stabilizer, two more coats of clear dope. Three coats of clear should be enough to seal the paper covered areas for colored dope. The fuselage, fin and rudder are now given a coat of clear dope. When dry, sand lightly to remove fuzz. This is followed by a heavy coat of sanding sealer, which, after drying is sanded almost completely off. Brush on a coat of thinned clear dope and sand lightly.

Now apply a second coat of sealer, thinned approximately 50%, and again sand lightly. A final coat of thin clear dope and gentle sanding should produce a suitable base for colored dope. If not, apply another coat of thin sealer followed by thin clear sanding between coats. There are many color schemes that could be used on the D-7, but the easiest and most colorful one is an all red plane with white and black crosses. This was used on the original model and it is a real eye-catcher.

Paint in all the white areas first. Mask off the white sections and apply as many coats of red as required to obtain a full even coverage. If a sprayer is available, by all means use it for at least the red. Spraying requires less paint, but more important, adds less weight. When satisfied with the red remove the masking tape and re-mask for the black crosses. Control surface outlines as well as access panels and louvres are applied using black 1/32" wide Trim Tape. This tape does a very neat job and is easy to work with.

A pair of 2½" Williams Bros. Vintage Wheels are now installed. A short 3/32" I.D. eyelet or small washer soldered to the end of the axle holds wheels in place. Cockpit edging is made from a piece of black rubber fuel line that has been split down one side. Use Pliobond cement or similar adhesive to hold it in place.

Re-install the escapement and rubber loop to power it. The receiver and batteries must be positioned as far forward as possible to help locate the center of gravity. Some weight will have to be added to the nose to bring it into trim. Bury lead ballast in the lower nose block until balance point is where indicated on the plans. We used about two ounces.

Flying: If wing incidence has been built in properly, and the model balances as shown, test glides should be successful from the start. All testing should be done in tall grass. If possible, after preliminary glides, launch from an embankment or point higher than where it will land. The D-7 is not a floater, the glide is quite fast, so the added altitude gained in test glides will give you more time to look for stalls, or excessive turns.

Add weight to nose to reduce stalls or remove weight if the glide is too fast. When satisfied with the glide and after a careful range check you are ready for powered flight. Fill the tank about half full for the first few flights. Start engine and adjust the needle valve so engine is running just over a four cycle. Hand launch into any breeze that might be present, the less the better.

If thrust settings are correct, the model should climb straight out in a shallow climb. Get some altitude before trying any maneuvers. Turns should be smooth with no abrupt entry. Adjust rudder throw to get the desired turn. Lean out engine a little at a time on each flight, adjusting trim until it is at full power and in good trim.

Your Fokker high overhead should give you a deep sense of satisfaction. Bring it in for a landing with touches of control as required. Hope it serves you well.

BILL OF MATERIALS

(Balsa unless otherwise specified)

6—1/16" x 3" x 36" (Med. to Hard)—Fuselage bottom and sides; wing ribs; fuselage doublers
3—1/16" x 3" x 36" (Soft to Med.)—Fuselage top; centersection planking
1—1/32" x 3" x 36" (Soft to Med.)—Stabilizer planking
1—1/8" x 3" x 36" (Med. to Hard)—Fuselage formers, wing and stab tips, fin and rudder, gussets
1—¼" x 3" x 18" (Soft to Med.)—Cowl assembly
2—3/16" x ¾" x 36" tapered (Med.) Wing trailing edges
1—3/8" x ½" x 36" (Med.)—Top wing leading edge
1—5/16" x ½" x 36" (Med.)—Bottom wing leading edge
1—1/8" x 5/16" x 36" (Hard)—Top wing main spar
2—1/8" x 3/16" x 36" (Hard)—Wing spars
4—1/8" x 1/8" x 36" (Med. to Hard)—Fuselage stringers and bracing.
2—1/8" x ¼" x 36" (Soft to Med.)—Stabilizer and fuselage bracing
1—1/8" x ½" x 36" (Med. to Hard)—Stabilizer leading edge and spar
1—1/8" x 3/8" x 18" (Soft to Med.)—Stabilizer trailing edge
1—¼" x 3/8" x 24" (Hardwood)—Wing and engine mounts
1—3/16" x 3/16" x 18" (Med. to Hard)—Torque rod .049 diam. wire; 1/16" diam. wire; 3/32" diam. wire; .072" diam. wire; black neoprene tubing; 2½" diam. scale type wheels; wire mesh for cowl screen; 1/8" and 3/8" diam. dowel; 1/16" plywood; 1/8" plywood; covering material; fuel-proof cement, clear and colored dopes; 1/16" I. D. tubing washers; eyelets; single channel R/C gear; .049 to .09 engine; fuel tank; decals and markings; full size Timely Plans. ●