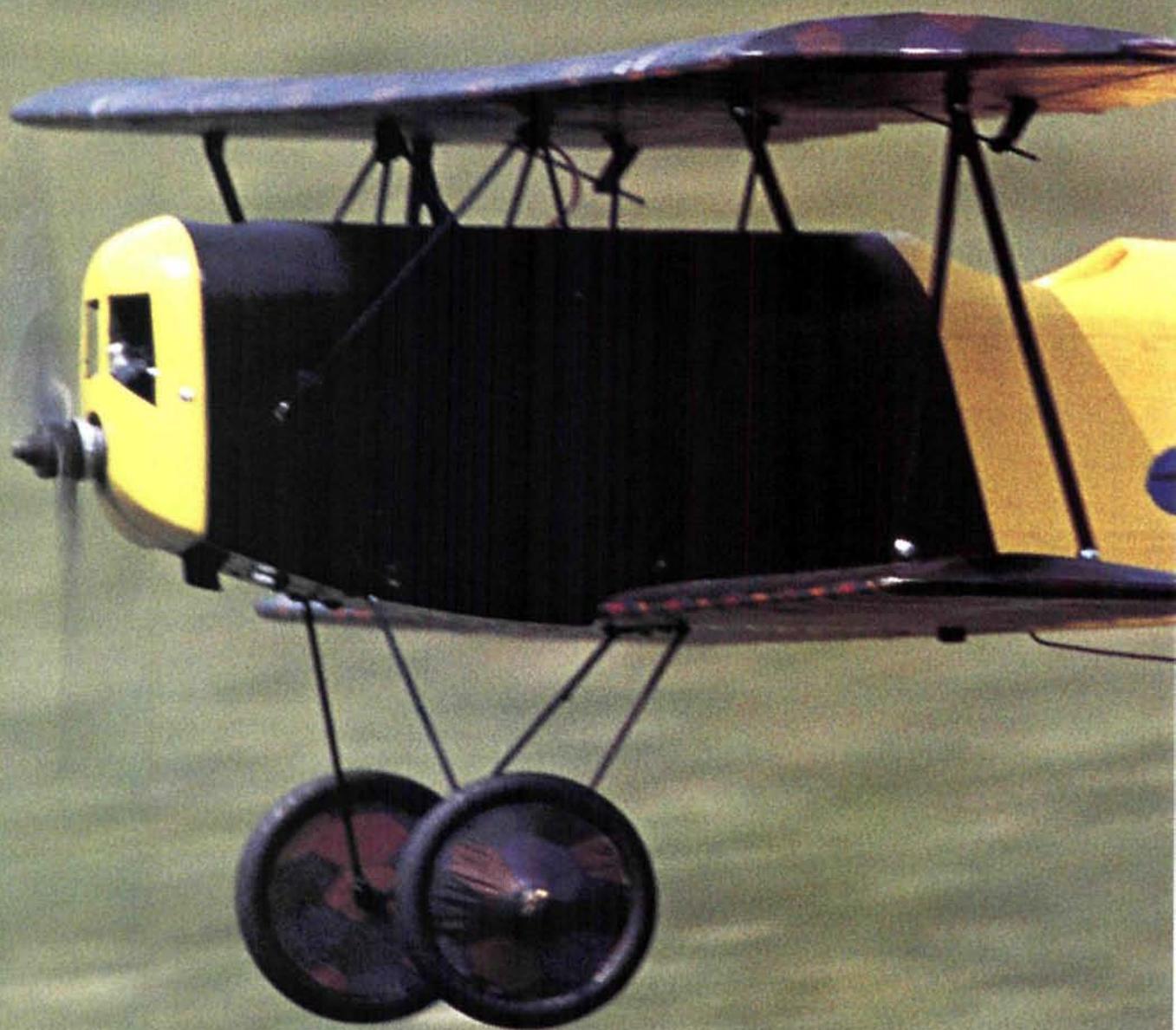
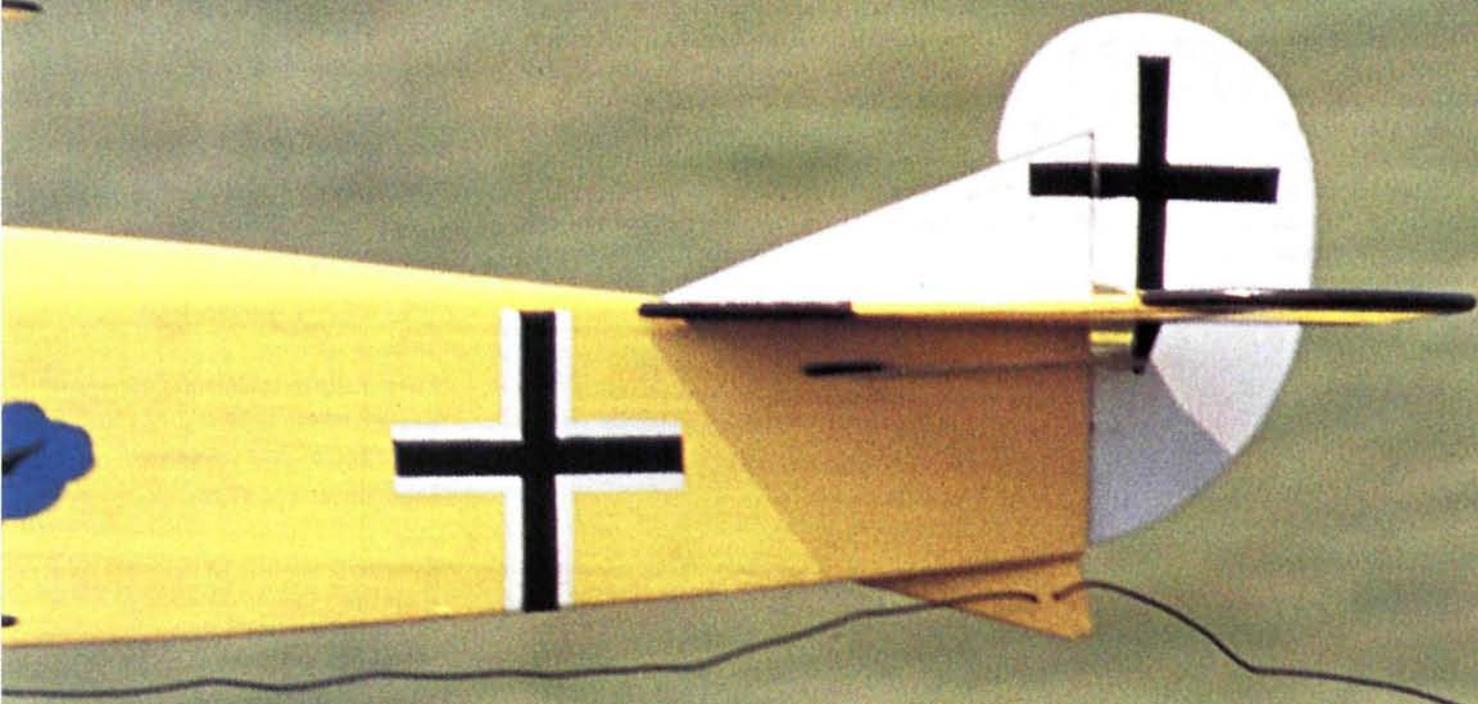


by David Johnson



Fokker



A mini WW I fighter for RC combat

D-VII

Your adrenaline pumps as you plan your attack. You dive onto your opponent and go for the kill. But before you can finish your thought, your adversary reacts and is now gunning for you! Have you ever wanted to fly combat, but the thought of the $\frac{1}{12}$ -scale WW II high-velocity planes put you off? If so, this Fokker D-VII may be for you.

CONSTRUCTION NOTES

The Fokker D-VII is relatively simple and quick to build. I recommend that you begin by cutting a kit of parts, as this constitutes the lion's share of work in building the model. Once this has been accomplished, start with the fuselage construction.

- **Fuselage.** Begin by making the left and right sides from 3/32-inch balsa. The fuselage side measures 4 5/16 inches at its widest point. You can either join two sheets of balsa together or purchase sheets that are 6 inches wide; the choice is yours. Next, glue in the 3/32-inch fuselage doublers, and lay out the locations of the formers and the strut blocks on the fuselage sides. To

avoid making two of the same sides, lay them back to back in a mirror image. To preserve the model's looks and avoid interfering with the cabane struts, I used a C.B. Tatone Universal .29 to .45 in-cowl muffler. If you don't want to go this route, rotate the engine mount 90 degrees so the muffler faces the bottom of the fuselage. The only downside to this is that the engine's head will protrude out of the fuselage side. Another reason I chose a C.B. Tatone muffler was that it would allow me to direct the exhaust straight out the bottom of the plane.

Epoxy the 1/8-inch lite-ply firewall F-2 and the 1/4-inch lite-ply engine mount F-2A into place on one of the sides, mak-

ing sure that they're 90 degrees to the side. After the glue has set, glue the other fuselage side on the formers (the sides must be square to each other), and let the glue cure. Now place the fuselage over the plan, and pull the rear of the fuselage

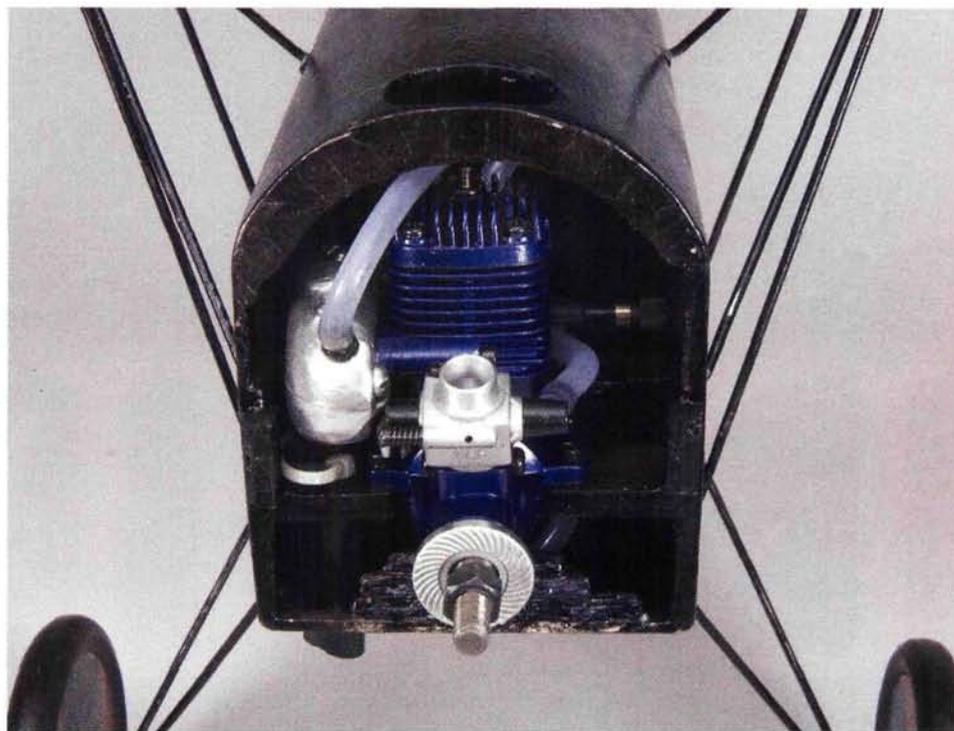
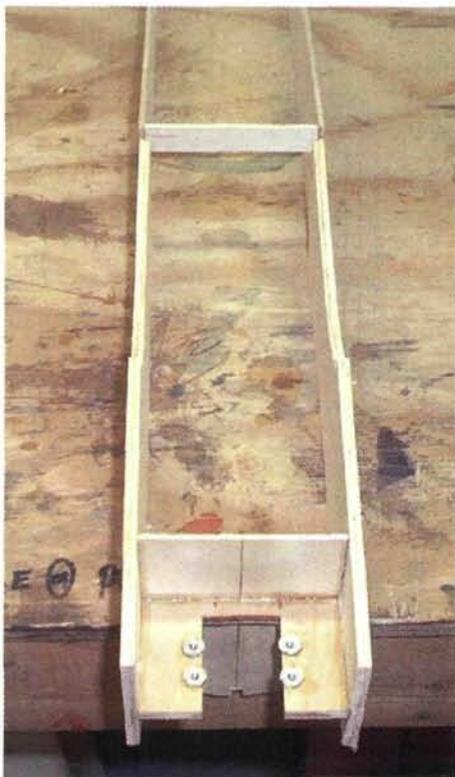
SPECIFICATIONS

- MODEL:** Fokker D-VII
- TYPE:** sport-scale WW I biplane
- WINGSPAN:** 43.25 in.
- LENGTH:** 32.5 in.
- WEIGHT:** 55 oz.
- WING AREA:** 519 sq. in.
- WING LOADING:** 15.26 oz./sq. ft.
- AIRFOIL:** flat-bottom
- RADIO REQ'D:** 4-channel (aileron, elevator, rudder, throttle)
- ENGINE REQ'D:** .25 2-stroke
- ENGINE USED:** O.S. .25 LA

COMMENTS: this diminutive Fokker D-VII is extremely easy to build and uses traditional construction techniques. The model has been designed around a .25-size engine and a C.B. Tatone Universal muffler for building ease. Flight performance is very good, and it doesn't have any of the bad habits that small biplanes sometimes exhibit.



Top: the fuselage is 3/32-inch sheet balsa with formers to give it its shape. Here, the foredeck is being sheeted. Below left: the engine mount is made of 1/4-inch lite-ply and glued to the firewall and fuselage sides.



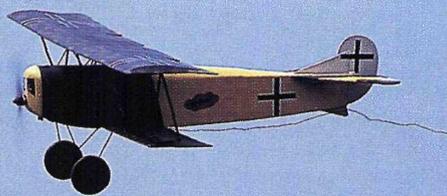
The O.S. .25 LA and C.B. Tatone in-cowl muffler fit nicely in the Fokker's nose. Cooling the engine hasn't been a problem.

In my model, I used an O.S. .25 LA; it provides just the right amount of power for aggressive dogfights without overpowering it.

Set up the control throws with $\frac{1}{2}$ inch of up- and down-travel on the elevator and as much aileron and rudder travel as you can get without binding the linkages or servos.

TAKEOFF AND LANDING

Despite the lack of a steerable tailwheel, the little Fokker taxis well. When you turn the model on the ground, blip the throttle as you use a touch of down-elevator; the tail will swing right around. Slowly apply full throttle as you head into the wind, and steer with rudder to keep the model on track. The plane will take off in about 20 to 30 feet at about a 10-degree angle of attack.



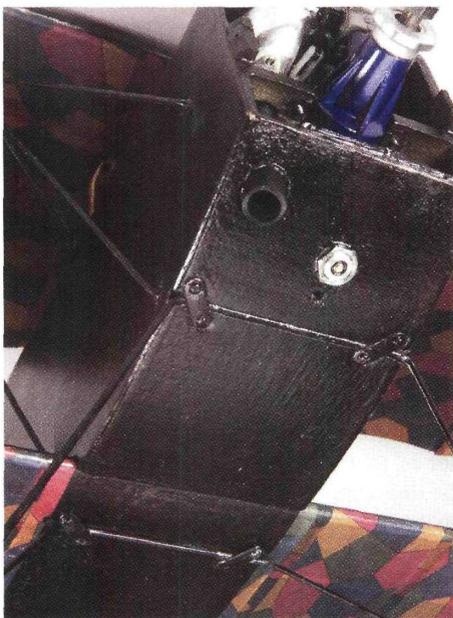
The D-VII has very gentle landing characteristics. Make sure that your engine has a low, reliable idle, or it can be difficult to get the model to slow down enough and land; it just wants to keep flying!

GENERAL FLYING CHARACTERISTICS

The plane has no bad habits. At full throttle, the plane will fly at around 50mph, and it's rock solid. Its slow-speed performance is just awesome; you can fly figure-8s right on the deck at a walking speed without its stalling out. The D-VII will perform all WW I maneuvers, such as loops, rolls, chandelles, spins, Immelmans and wingovers with ease. Everyone who has flown the D-VII has been highly impressed with it. In fact, several of my club members have built one. I hope you'll enjoy yours as much as I enjoy mine!



Above: the cabane struts are $\frac{3}{32}$ -inch music wire, and they plug into the fuselage and screw into the top wing. Below: I use a three-line fuel system and installed a fuel fitting in an inconspicuous spot on the underside of the nose.

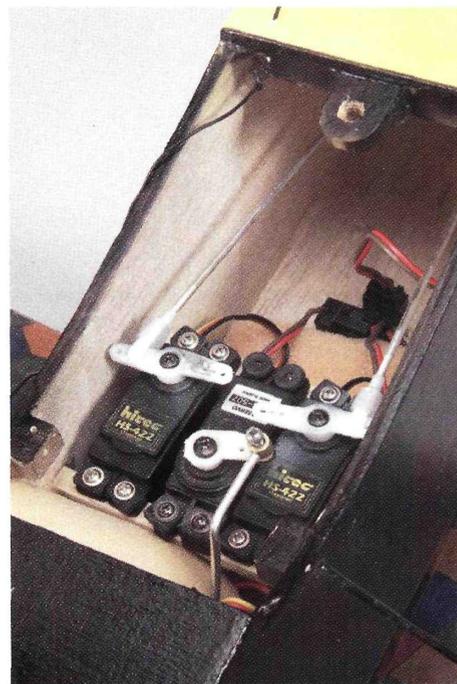


together; install formers F-5, F-6A and F-9. Clamp, make sure that the fuselage isn't bowed, and glue everything together. Install the rest of the formers, and sheet the fuselage bottom with $\frac{1}{16}$ -inch balsa placed cross-grain. Add the $\frac{3}{16}$ -inch square stringer to the top formers.

Now comes the only tricky part of building the D-VII: sheeting the top of the fuselage. First, bevel the top of the fuselage sides to match the formers all the way to the stabilizer. This will ease the task considerably. Lightly wet the top side of the $\frac{3}{32}$ -inch balsa, and starting at the center of the stringer, sheet from the rear of the cockpit forward. Sheet the other side and let dry. Trim the wood, and repeat the process for the rear of the fuselage; then cut out the cockpit opening. The nose of the fuselage is a block of soft balsa that's carved to shape and then hollowed out. There's nothing complicated about it. Next, the wings!

Simple to build and fun to fly; what more could you ask for in a WW I model?

- **Wings and tail feathers.** The wings are pretty self-explanatory and, again, build quickly. Resist the urge to beef them up! There isn't any dihedral, and none is required. If you splice the leading edge and spars together, make sure that the splices are outboard on the panels, and also stagger them. A good splice joint with a little epoxy will produce a strong joint. I



Above: the servos are installed as far forward as possible. The receiver and battery are in front of the servo tray. Below: this view shows the N-strut attachment to the top wing. A single servo in the center of the wing is used for both ailerons.



WW I Combat Guidelines

I have been flying WW I planes for a number of years and have had a few impromptu dogfights with some of my flying buddies with our 1/4-scale models. With the time and expense involved with a model of that size, you don't want to get extremely aggressive, as the consequences of a midair would be dire. Yet, the experience could not be replicated for me with the high-speed WW II-type models currently being used for combat. The following is a loose and modifiable guideline of rules for WW I combat.



PLANE SPECIFICATIONS

MINIMUM SIZE (WINGSPAN):

Monoplanes—48 in.
Biplanes—42 in.
Triplanes—36 in.

MINIMUM AIRFOIL THICKNESS: 9/16 in.

MAXIMUM WEIGHT: 4 lb.

ALLOWABLE ENGINES: plain-bearing
.25 2-strokes

These rules as outlined are designed to encourage engagement while maintaining a bit of good judgment. The bottom line is to have fun while being competitive. Give WW I combat a try; it's a real hoot!

RULES OF ENGAGEMENT

Scale 3-view to be provided at CD's request.

Aircraft must be able to ROG.

No profile models allowed.

Tow string to extend 10 feet behind the aircraft's tail.

Streamer to be 25 feet long.

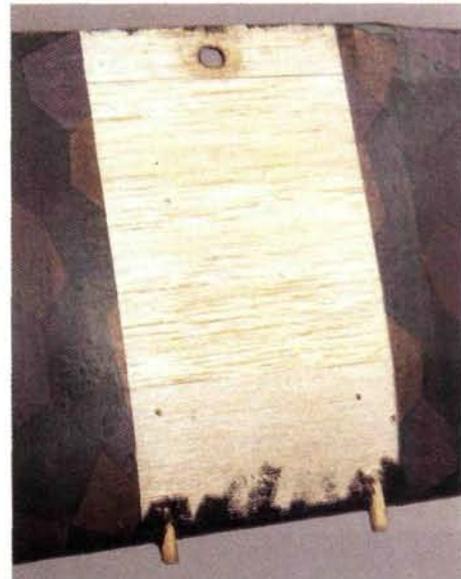
ON-TIME TAKEOFF: 10 points
(engine start within 2 minutes).

FLY FULL ROUND: 10 points
(a round is 5 minutes long).

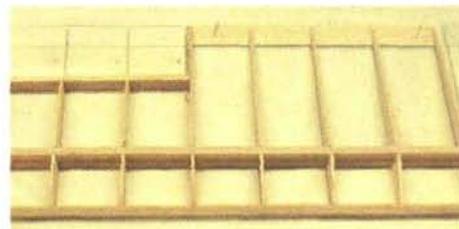
EACH CUT: 25 points.

REMAINING STREAMER: 1 point per foot.

MIDAIR COLLISION: subtract 50 points from each participant.



The bottom wing uses alignment dowels to key into the fuselage, and a single 1/4-20 nylon bolt secures the wing in place.



Wing construction is very basic and goes quickly. The ailerons are built separately.

The "N" struts are simply screwed to plywood attachment points in both wings. The struts add a lot of strength to the model.



have pulled insane G with my model without it suffering any ill effects. The ribs are made of 1/16-inch balsa and the spars should be of fairly hard and straight balsa.

Do not delete the interplane struts, as they join the two wings and form a solid structure. To control the ailerons, I installed a microservo in the top wing with the arm facing up toward the top of the wing to drive a piece of 1/16-inch music wire. The wire pushrod runs between two bellcranks that drive the ailerons. Use an EZ connector to attach the servo to the pushrod, and thread the pushrod through the connector (in the center section) as you feed the pushrod through the wing. Once the pushrod is in and hooked up to the bellcranks,

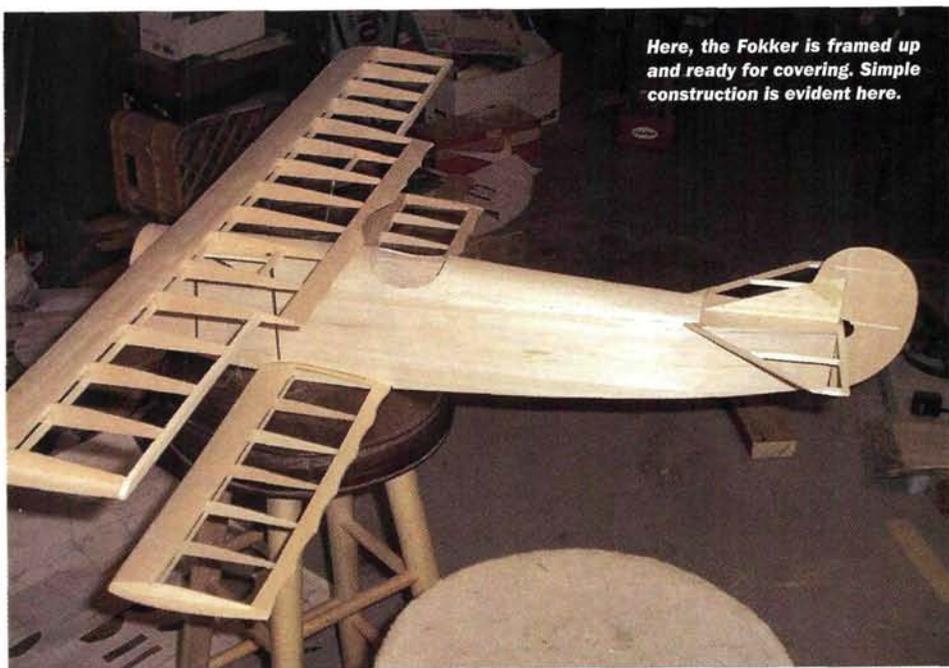
install the servo. The servo is mounted so that as you tighten the mounting screws, it forces the EZ connector to stay in the servo arm without a keeper. Once the control system is in, tighten the EZ connector onto the pushrod; you can then remove the servo to cover the wing. As an alternative, you could modify the wing to accommodate installing a microservo for each aileron.

There isn't much to do to build the tail feathers. The vertical fin is made out of soft 1/8-inch balsa sheet. Make sure that the wood is straight. The stabilizer is made of various widths of 3/16-inch-thick balsa sticks. The stabilizer is then sanded flat, the edges are rounded, and the control surfaces are hinged using your favorite method.

• **Final assembly and covering.** Finalize your engine and muffler installation as required. Bend the cabane struts and trial-fit them to the fuselage. One secret for making the cabane struts a whole lot easier is to use solder connectors as strut fittings. Bolt the fitting to the wing, and insert the cabane strut (plugged into the plane) into it, and solder the fitting in place. Next, bolt on the rear strut, and hold the wing in its correct location



A single pushrod drives both elevators. The rudder pushrod exits the fuselage on the other side.



Here, the Fokker is framed up and ready for covering. Simple construction is evident here.

(longitudinally), making sure that the incidence is correct. When the incidence is set, solder the rear tab on. Now wrap the top of the auxiliary struts and the main strut with fine copper wire, solder them together, and you've finished.

You have many choices of covering material for the D-VII. You can use a heat-shrink material like MonoKote, or you can use silkspan, as I did. There are many colorful paint schemes from WW I, so let your imagination fly! Now, finish

installing your radio system and balance the model. I was able to achieve the correct CG by shifting the receiver and battery pack. It's now time to fly and seek out adversaries.

CONCLUSION

Simple to build and fun to fly; what more could you ask for in a WW I model? Performance with the recommended 2-stroke engine is very good, and the plane has no bad habits. Everyone in my club who has built the Fokker D-VII really loves it. Why not build one and see for yourself? †

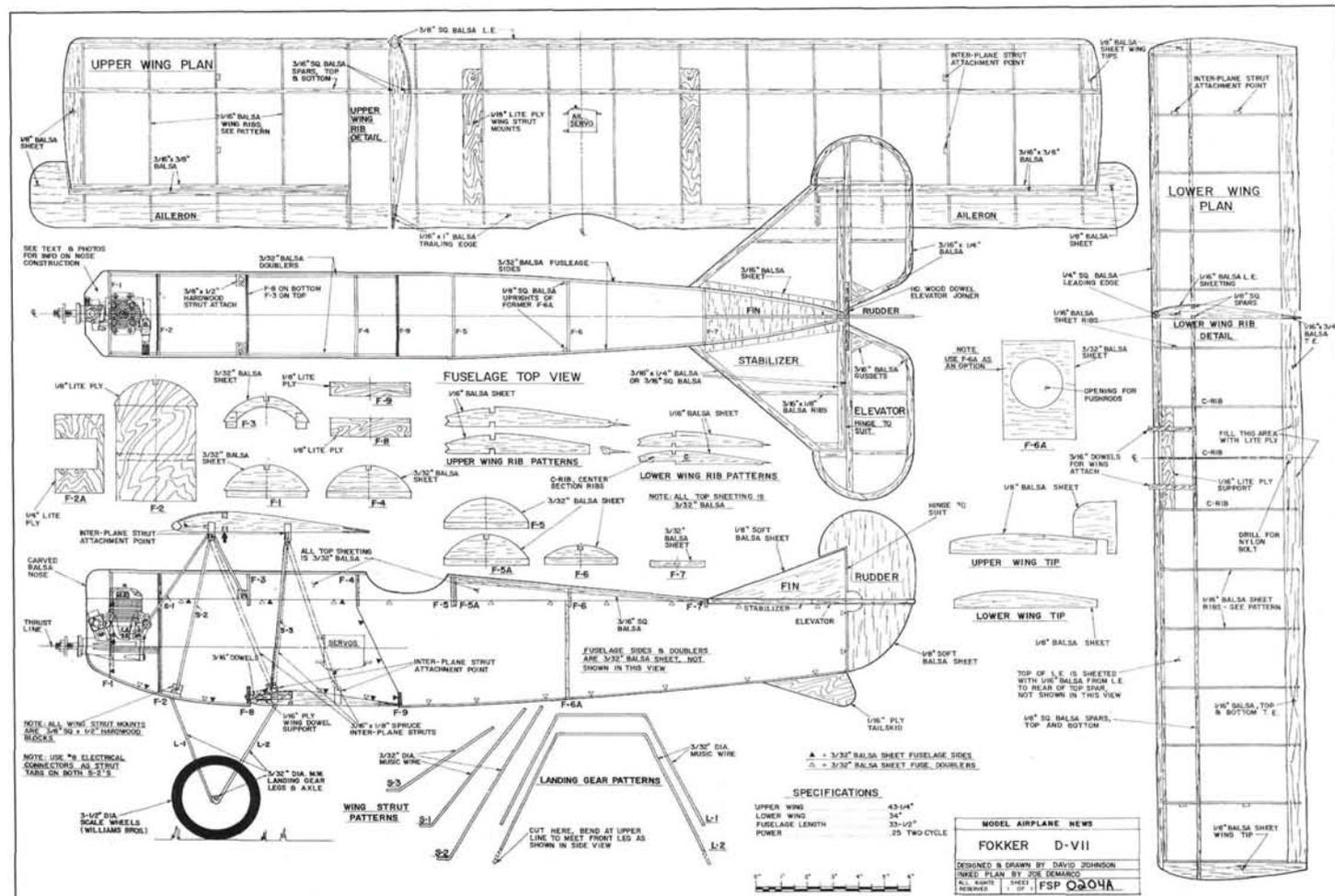
C.B. Tatone Inc. (510) 783-4868.

O.S. Engines; distributed by Great Planes Model Distributors (217) 398-6300; (800) 682-8948; osengines.com.

FOKKER D-VII FSP0204A

Designed by David Johnson, this small Fokker D-VII is big on performance. Designed around a .25 2-stroke engine and a C.B. Tatone in-cowl muffler, the model is built of balsa for quick and easy construction. The model is very maneuverable yet stable, and it makes a great combat model.

WS: 43.25 in.; L: 32.5 in.; engine: .25 2-stroke; 4 channels; 1 sheet; LD 2. \$14.95



To order the full-size plan, turn to page 154, or visit rstore.com online.