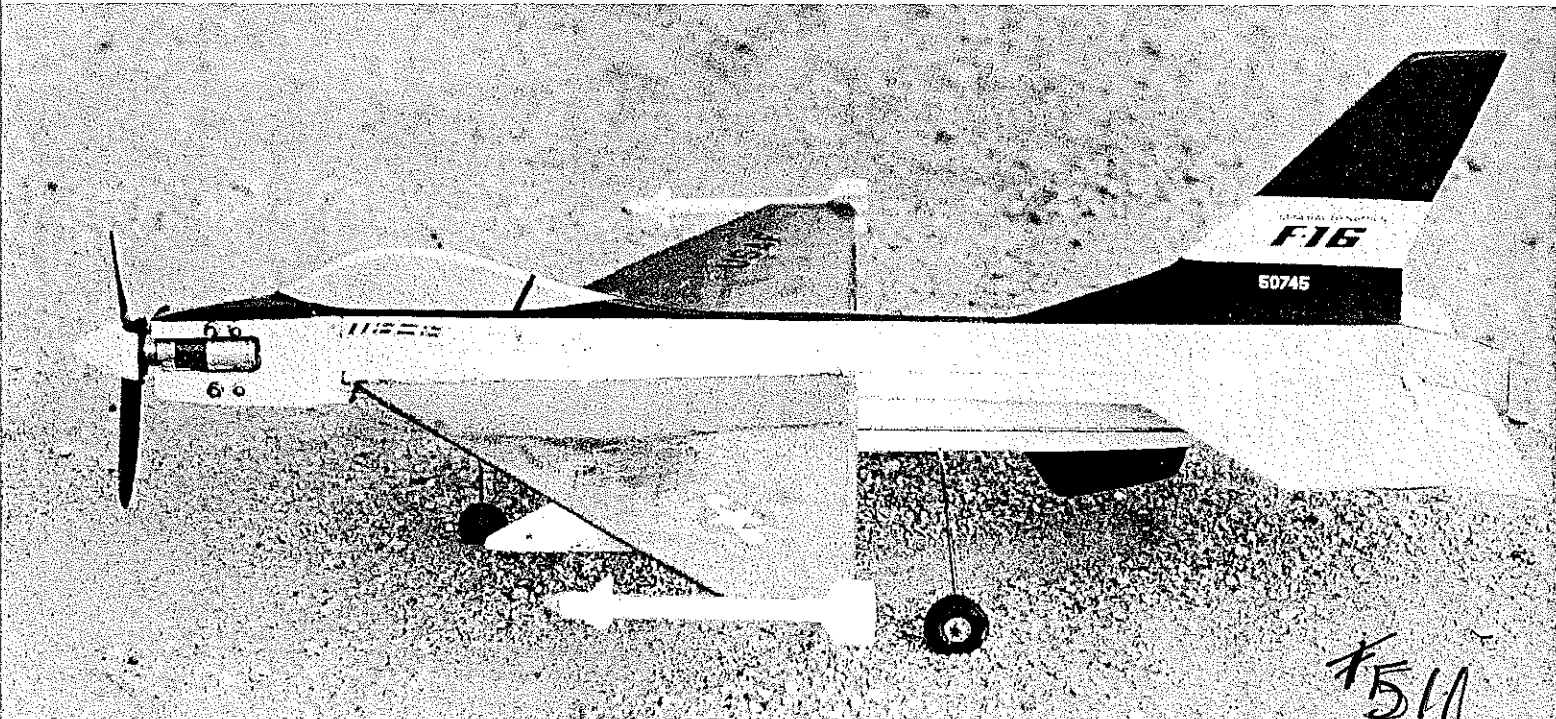


THE PROTOTYPE is an outstanding air superiority fighter designed by General Dynamics. It is extremely maneuverable, and its engine produces a thrust 50% greater than the plane's weight. The design of this single-seat fighter incorporates sophisticated aerodynamics. The center of gravity is so far aft that it is necessary to have a computer system to provide artificial stability.

The F-16 is currently a joint project being built for the U.S., Holland, Belgium, Denmark, and Norway. It is also being flown by the U.S. Air Force Thunderbirds.

# F-16

The vertical stabilizer is cut from  $\frac{1}{16}$  balsa sheet and is glued to the top of the fuselage. The ventral fin, also from  $\frac{1}{16}$  balsa, is glued to the bottom. The landing gear is optional; if you plan on flying over grass only, leave it off. The gear is bent from  $\frac{1}{16}$  wire and held on with epoxy glue. Cut the horizontal stabilizer and elevator from  $\frac{1}{16}$  balsa, and glue the stabilizer to the fuselage. Attach the elevator with cloth hinges (or whatever kind of hinges you prefer). Sand the edges of the fuselage and tail surfaces. Epoxy the ply horn to the elevator.



The profile model presented here is powered by an .049 engine. It is inexpensive to build and flies very well, including good maneuverability. It has great natural stability, so it is easy to fly.

**Construction.** The wing is made from  $\frac{1}{8}$ -in. sheet balsa. Edge-glue the sheeting together, and cut out a wing to the shape shown on the plans. Brush on several coats of clear dope (both sides at once to prevent warping), and smooth the surface with fine sandpaper between each coat.

While the wing is drying, cut out the fuselage from  $\frac{1}{16}$  balsa. Cut out a notch where the wing will be positioned. Decide now whether you are going to use a TeeDee or Black Widow .049 engine, as the mounting differs. I recommend the TeeDee for the more experienced pilot (because of its high power output) and the Black Widow for the novice (because it is less expensive and won't fly the model quite as fast). If you elect to use the TeeDee, make two engine mount doublers from  $\frac{1}{16}$  plywood; glue them into place with epoxy or white glue.

For the Black Widow engine, epoxy a plywood firewall to the front of the fuselage where the canopy begins. Support the firewall with wedges of balsa epoxied in place as shown in one of the photos.

Our author's profile F-16 with the TeeDee engine installed. See text for alternate installation of Cox Black Widow-type engines.

**While the full-scale F-16 is by no means a sport aircraft or trainer, this profile Control Line model makes a snazzy one that doesn't look like every other trainer you've seen at the flying field. Takes either a TeeDee or Black Widow .049/.051.**

■ **Richard K. Schrader**

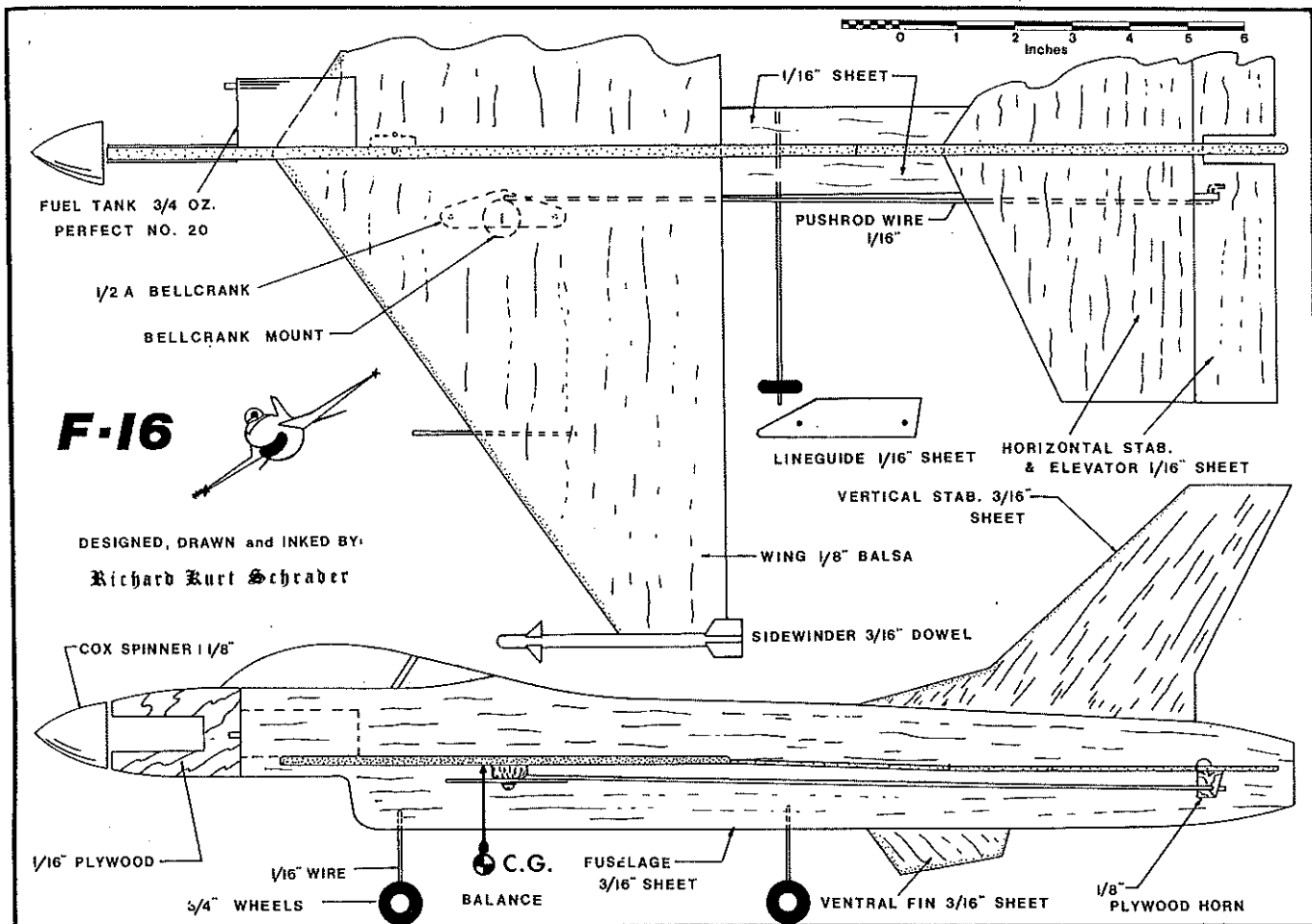
Affix the wing to the fuselage with liberal use of epoxy or white glue. Epoxy the bellcrank mount and the  $\frac{1}{16}$  balsa line guide in place. Glue on the  $\frac{1}{16}$  sheet balsa pieces between the wing and horizontal stabilizer.

The simulated Sidewinder missiles are made from  $\frac{3}{16}$  dowel; cut to length and sand to shape, then glue to the wing tips after adding the fins made either from styrene plastic or  $\frac{1}{16}$  balsa. (If you plan to finish your model in U.S. Air Force Thunderbird colors, leave off the Sidewinders. Replace them with missile attachment guides made of hardwood to the dimensions of  $4 \times \frac{1}{2} \times \frac{3}{16}$  in.)

**Finishing.** Non-glossy surfaces are best because fewer coats of paint will be required, and the plane's weight will be less (so it will be able to fly better). However, my model had a hand-brushed glossy finish, and flight performance was still very good.

Since the wing already has several coats of clear dope, do the same with the rest of the model, lightly sanding after each coat. After this, you're ready for the color.

My model was finished in the F-16 delivery scheme: red wings, white fuselage, and blue trim. You may prefer some other color scheme; go right ahead. If you aren't



# F-16

DESIGNED, DRAWN and INKED BY:  
Richard Kurt Schrader

able to spray your paint, brush on two to three coats of color, wet-sanding after the first coat with #400 wet/dry paper. I used silver paint to define the cockpit. Apply decals, and protect them with a fuel-proofer or wax.

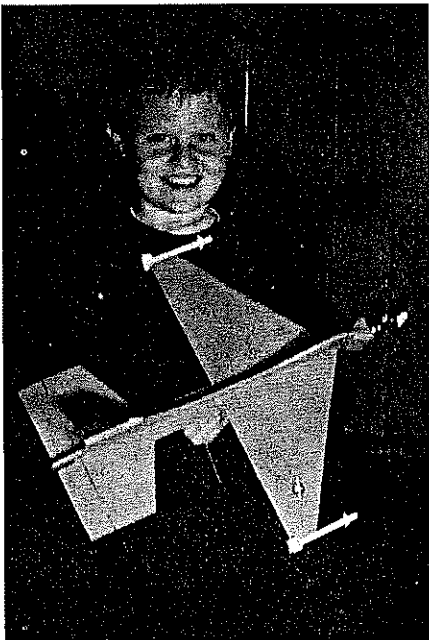
Last details. Install the engine. Add ¼-in.

wheels if you installed the landing gear. The fuel tank is a Perfect #20 (¾ oz. capacity) fastened with wire. Mount the propeller and spinner (the Cox spinner fits just right). Install the bellcrank, and connect it to the elevator horn with a ⅓ wire pushrod.

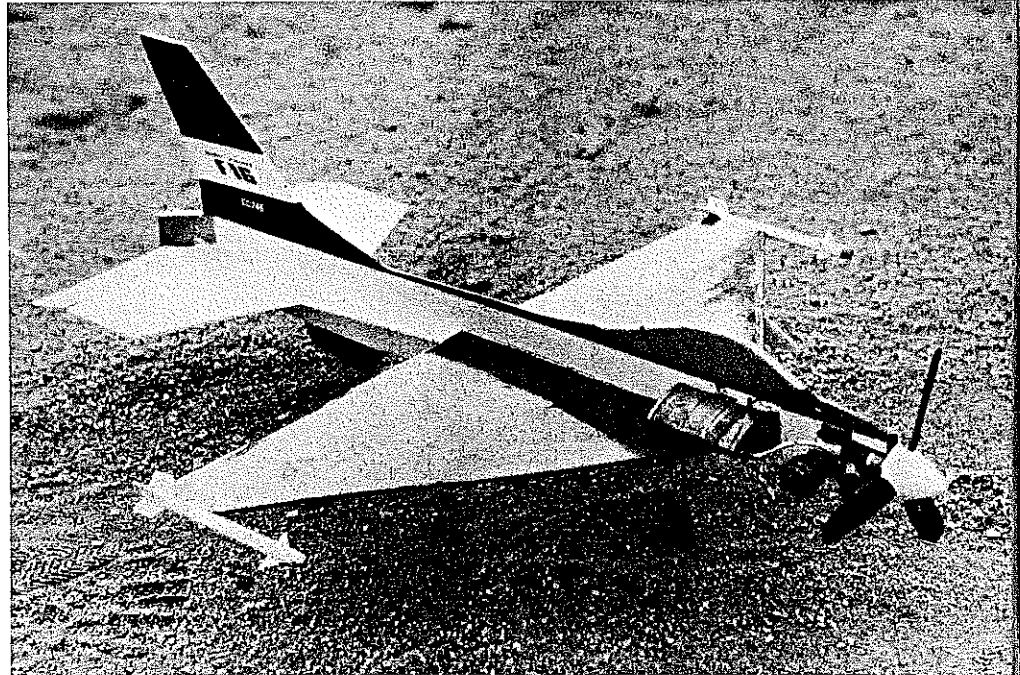
The plan shows the most forward balance point or center of gravity (CG) with a

full fuel tank that you should use. The most rearward limit is ½ in. behind this. The forward balance point gives maximum flight stability; the rearward one gives greatest maneuverability. Points in between provide various combinations.

To balance the model, hold the fuselage  
*Continued on page 165*



A smiling Christian Rea holds the model to give us an idea of its actual size. This one has a military-type paint scheme together with a radial-mounted Black Widow engine.



This model may be the only F-16 that can claim to be a trainer, but with the reed-valve .049, it is just that. With the TeeDee engine, though, it is capable of many maneuvers.

of International Reply coupons (available at your local post office). While you are there, get the allowable dimensions for your shipping box. It's a drag to have to take it home and shorten it by a couple of inches—as I had to do the last time I sent a model over the pond!

*Aeroplane Monthly*, Rm. L 503, Quadrant House, The Quadrant, Sutton, Surrey SM2 5A2, England is cosponsoring the Lympne Meet. They have featured one of the original Lympne planes in each issue from July 1984 to November 1985 with three-views, photos, color information, etc.

Free advice is generally worth what you pay for it, and advice on how to adjust your autogyro is always in abundance at the flying site (usually from people who have lots of fixed-wing experience). Trying to get one trimmed is interesting, to say the least. Walt Mooney designed a rotor which was just two crossed blades of 1/2-in. sheet, scored and cracked near the hub to provide a very small negative angle of attack. It flew great!

My Hannan Avro profile gyro was rolling in to the left regularly, "stalling-out," and giving me fits. Luckily I ran into Bill at the IMS Show, and he asked me if the rotor blades were sanded so thin that the model could not be picked up using fingers under the blades. Well, mine could, so we sanded... and sanded. That solved the rolling, but the model still headed nose-straight-up for the ceiling. I had a gob of clay on the nose, down elevators and all that, too. On a whim, I took off *all* the nose weight which I had added to put the CG just in front of the rotor mast, and—voila!—it flew beautifully. Ferrell Papić's rubber-powered Cierva flies well with laminated Mylar drafting-film rotor blades. You have to be flexible in your trimming techniques, too!

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denser tissue, and small sizes of rubber for that sub-Peanut? I suggest you send a buck and a half to *Micro-X Products*, P.O. Box 1063, Lorain, OH 44055 for their catalog of goodies. They have a very helpful pamphlet that tells you how to dye condenser paper, too.

Well, gang, get cracking on your entries for the Intergrats, FAC, and Lympne meets. Remember that after a sub-Peanut, the next plane you do with a 13-in. span will seem *huge*—and ridiculously easy to build!

Bill Warner, 423-C San Vicente Blvd.,  
Santa Monica, CA 90402.

## F-16/Schrader

Continued from page 71

between two fingers at your selected point within the CG range. Add weight to the nose or tail until the model is perfectly horizontal.

**Flying.** Attach the control lines. Manufactured wire sets of 26 to 35 ft. length are recommended. Before each flight, check the elevator for proper and free movement.

If your model is built without a landing gear, it will have to be hand-launched. Have a helper run about 20 ft. with the model and then toss it into the air—straight ahead and with the fuselage level. At this point, the flier should have the elevator in a neutral (or very slightly up) position.

For taking off the ground with the landing gear, start with the elevator in the neutral position. Apply a little up-elevator (after letting it run on the ground for about a quarter of a circle) to lift off.

You will find this model to be maneuverable *and* very stable. It has no vices and is not difficult to handle.

For landing, try to anticipate when the fuel will run out, and level out at about shoulder height. When the engine quits, let it descend in a glide, and apply up-elevator just prior to touching down.

Good luck, and happy flying with your F-16 model.

## CL Aerobatics/Fancher

Continued from page 72

get a ST .60 to fit with only a little filing and grinding on the mounting lugs and holes. We really don't recommend retrofitting as the best solution, since the tank location won't be exactly right (more on that later), but it'll probably still run better than anything else you've had before.

Which .60 should you use? We'll bet that you didn't know that there are at least six different versions of the ST out there! The only one to stay away from is the oldest, non-Perry-port version. There is no number change on the outside of the engine, and they all read ST .60 R/C W/M on the box. If you don't know what

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11	5W*	2.29
11	6EW*	2.39
11 1/2	6, 7	2.39
12	4W*	2.79
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