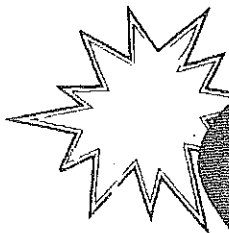


Semi-scale lines of the Spectre are beautiful, as are the author's craftsmanship and decorations. Note the wheel collar on the outboard wing tip that allows lead shot to be added or taken out. Except for that and the needle valve, it might not be recognized as a model.



What makes this CL Stunter for a .40 engine especially appealing is its full-scale-like sports plane appearance. Yet it has all the good things for operating in Precision Aerobatics

Spectre

to the pilot's competes
Try this one

full ability. It's by a noted French designer who (and wins) regularly in the European contest circuit. for a change of pace. ■ Yves Fernandez #387

AFTER BUILDING several Precision Aerobatic planes that were styled much like jet fighters, I decided that my next project would be to build a plane that had a different appearance. I wanted to retain most of the good flying qualities of some of my earlier efforts, and I also wanted to have a model which had more of a sports plane look.

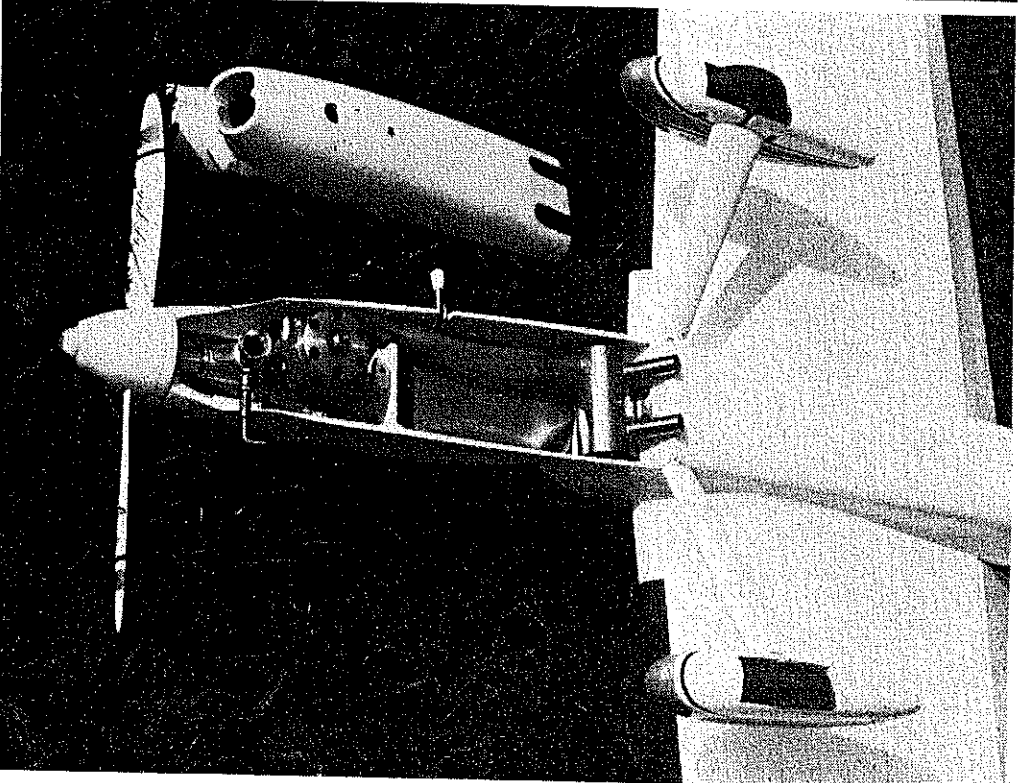
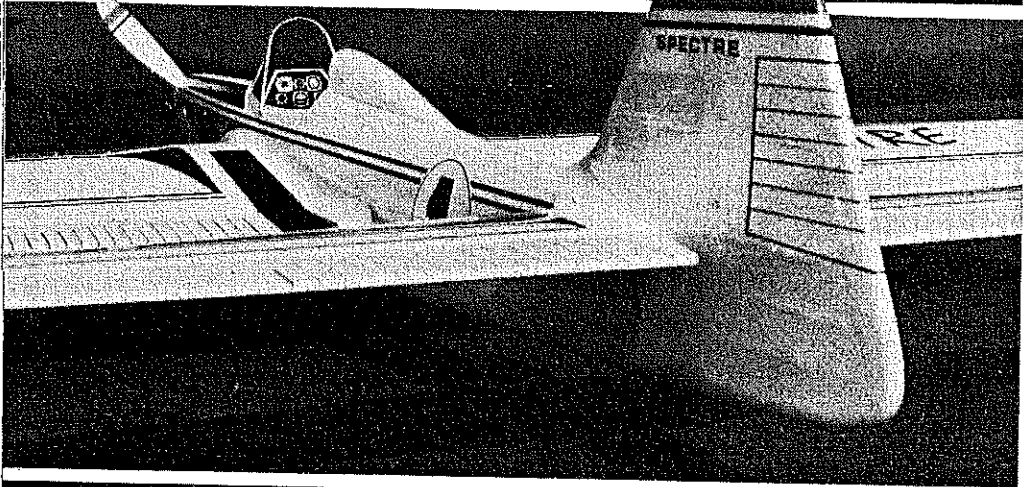
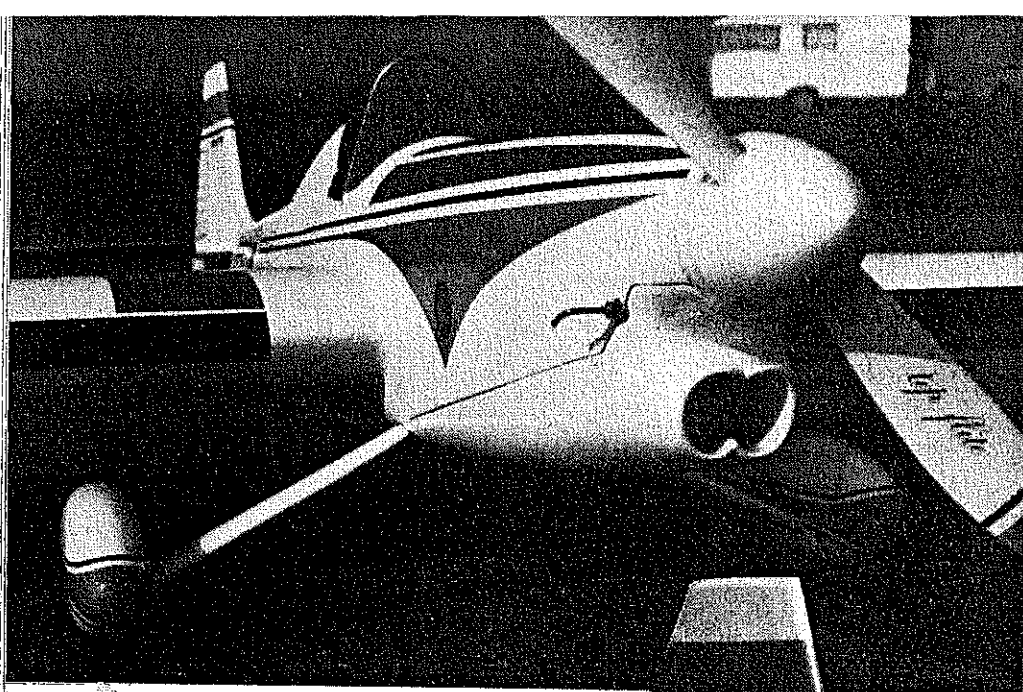
Several planes provided the inspiration for this new model. The wing, tail surfaces, and moment arms were inspired by Les McDonald's Stiletto (as was my Stilomag which appeared in the April 1981 issue of *MA*), while the fuselage outline was inspired by the Little Spectre kit put out by the British Kiel Kraft firm. The resulting model is the one presented here.

If you should compare the plans for the Spectre and the Stilomag, you will see that there is a great deal of similarity in the plan form of the two planes. The open cockpit and the more squared-off rudder outline contribute to the sport model appearance of the Spectre.

In most ways, the construction of the Spectre is straightforward, but I have done several things which are out of the ordinary. Perhaps a few.

Author shown as he is about to start plane's HP .40 engine—which he gives good marks due to its power and lightness. Enclosed custom muffler makes for a clean appearance.





That the inside of the engine compartment is as nicely finished as the outside marks the author as a true craftsman. Visible is the custom tank and muffer with twin exhausts.

It's almost impossible to detect in the finished model, but it has a few degrees of engine out-thrust to help maintain line tension—accomplished by angling the engine bearers.

comments about the construction techniques and the finish will be helpful.

Special muffer. In order to have a clean outline in keeping with the sport model appearance that was desired, I decided to fully enclose the muffer in the fuselage. This required designing and building a special exhaust and muffer system. The exit for the muffer is just in front of the leading edge of the wing, and this tends to keep oil spray out of the open cockpit.

I built the muffer with fishing rod bushings, which should be available in any sporting goods shop. These bushings are light and quite strong, being .016 in. thick. Silver solder is used for all joints. The collector is also made with these bushings, but heating is required for bending. The collector and muffer can be connected by a length of synthetic rubber or silicone tubing ($\frac{1}{2}$ in. i.d. and $\frac{1}{16}$ in. wall thickness) as shown in one

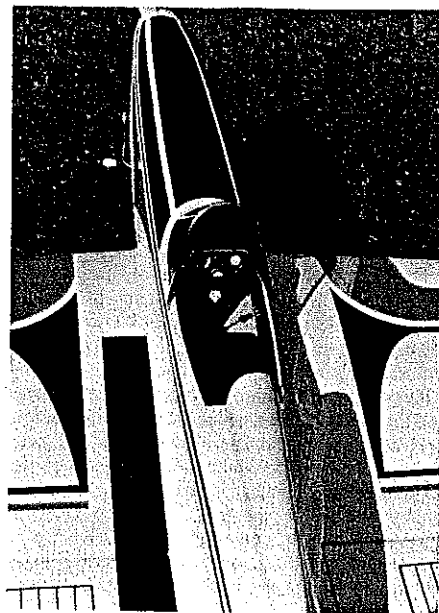
The tail surface must be kept very light. If too heavy, nose weight will be needed to keep the balance point correct. That will add to total weight and diminish the plane's performance.

of the pictures or by a length of aluminum tubing with each end connected with a short length of silicone tubing.

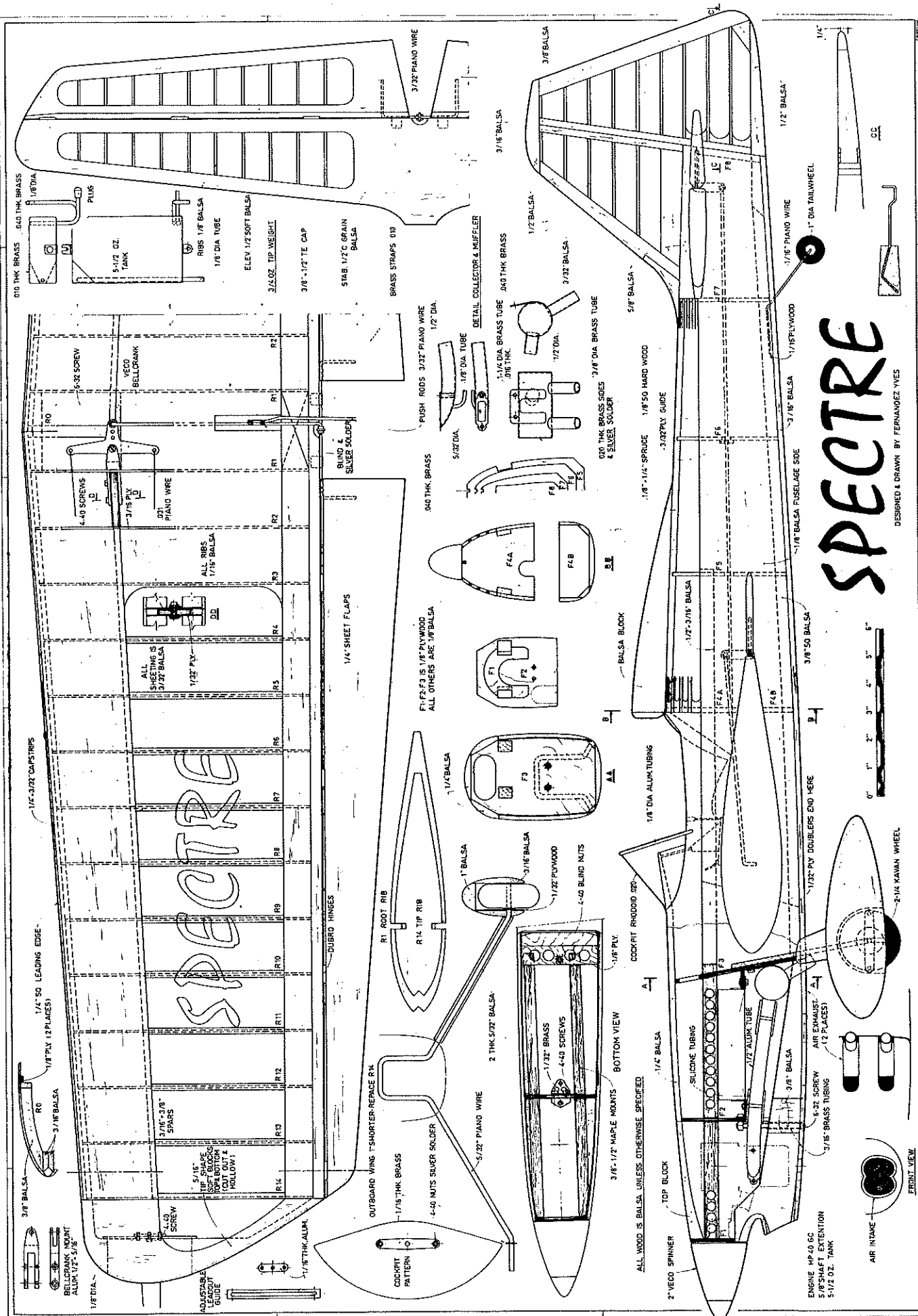
The entire weight of the muffer is $2\frac{1}{4}$ oz. To install it, I had to widen the fuselage—which also improves the plane's semi-scale appearance. In spite of its Chubby-Checkeder underside, the ovoid (egg-shaped) form of the cross section gives the model an overall graceful appearance.

Wing and tail surfaces. The tail surfaces *must* be made light. Nose weight to balance a heavy tail section is just extra weight and detracts from performance. The fixed part of the stabilizer is cut from a $\frac{1}{2}$ x 4 x 36-in. balsa sheet that does not weigh over 5 oz. If at all possible, the movable part of the tail feathers (the elevator) should be cut from a $\frac{1}{2}$ x 4 x 36-in. sheet of balsa that

Continued on page 156



Models aren't judged for appearance in Europe where FAI rules are used, but we'd bet this model would receive a good appearance score here. Besides, impressions never hurt.



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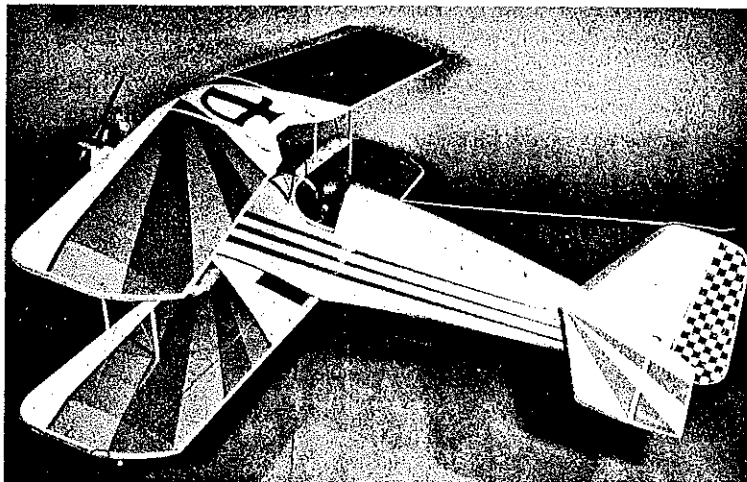
■ Wingspan: 48" or 52½" ■ Wing Area: 817, 864, or
910 sq.in. ■ Engine: .60-.78 ■ Weight: 7 lbs.

*Depending on which configuration you build.



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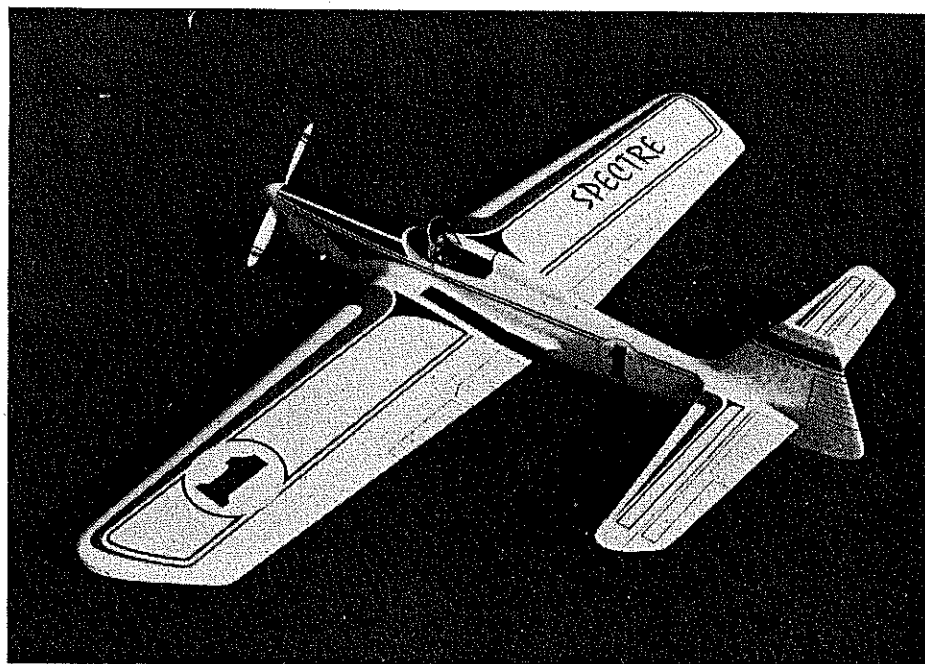
Spectra/Fernandez

Continued from page 79

weighs 3½ to 4½ oz. so that the stabilizer and elevator, together, will not weigh more than 2¼ oz. with the control horn and hinges installed.

The rudder is fixed but could be made movable or adjustable.

In building the wings, try to choose ¾ balsa



All-up weight of the author's Spectre is 56 oz. Controls are set to give 42 degrees of flap movement while the elevator is at 45 degrees. Controls are bushed to give long life.

sheets that do not weigh more than ¾ oz. This will allow enough thickness for the sanding

necessary to obtain a very smooth surface. The outboard wing panel is one inch shorter

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