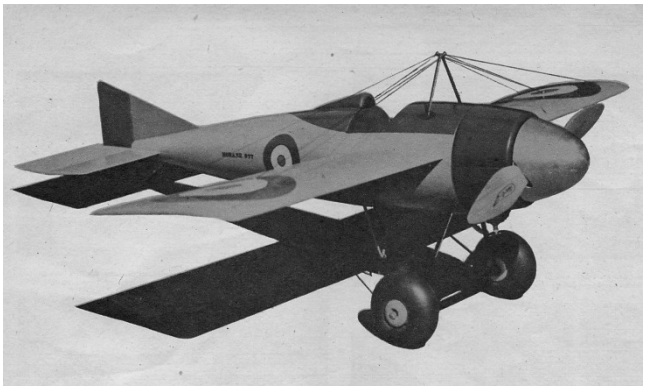
# Morane Saulnier



**Designer Lanzo.**

## Famous French fighter returns as Class A or B control line flying scale beauty by Chester D. Lanzo.

**Here** is an early World War I monoplane that could very easily be mistaken for a modern super-streamlined Goodyear Trophy racer. One could say that the engineers of this famous "oldie" were 33 years ahead of their fellow aeronautical designers large streamlined spinner, followed by the completely cowled engine and symmetrical fuselage leaves nothing to be desired in drag reduction. Raked wing and stabilizer tips are similar to those used on the latest high-speed pursuit planes. Wing warping wires that were used in the early days of aviation made necessary the unusual amount of struts outside the fuselage.

Probably one of the most famous planes in French aviation history, the Morane Saulnier monoplane of 1915 was the first to mount a machine gun that fired through the arc of the propeller. The pilot was thus enabled to feed ammo strips into the gun ahead of him. Steel wedge shaped plates were attached to the propeller blades to obviate damaging the propeller.

The wing span of the plane was 26 feet, 9 inches. Gross weight was 1,080 pounds. Empty weight was 738 pounds. Top speed was 80 miles per hour. The machine was powered by an air-cooled 110hp LeRhone rotary engine.

Now let's get back to the model. The plane is an excellent one for a beginner to start on as it handles well in the air and is simple to construct.

You can power this ship with any "A" or "B" engine you have lying around. An Arden .199 was chosen because of the simple radial mounting and ease of cowling. The Arden also runs well inverted. If an engine other than the Arden is used, be sure to change the distance from firewall to the cowling to accommodate it.

The body of the Morane is made from a solid block of wood. Begin by cutting two pieces of medium hard balsa to the dimensions of 2" x 4" x 20" or 24". Actually the finished body is only 19-1/4" in length, but a small excess is allowed for turning on a lathe. Next apply a generous amount of glue to about 2" of the end of those blocks on the 4" faces. Bind the blocks with rubber bands and allow to dry. Drive a heavy wood screw through the portion of the block where the cockpit opening is to be and you are ready to turn the body. (If you do not have a lathe available, a model supply house advertises that they will handle the job for you for a nominal sum: Aero Design Model Mfg. Co., Lincoln, Nebraska.)

Check the body diameter and when it is down to size, sand to a very fine finish while still in the lathe. Next give the fuselage 4 coats of shellac, being sure to sand well between each coat. The shellac gives the body a great deal of strength and also acts as an excellent base for the finish coats of pigmented dope. While the body is still in the lathe, run a round-nosed tool 1/8" into the body at the rear of the motor cowling. This will be beneficial later when removing the upper portion of the cowl for installation of the engine.

Remove the screw from the cockpit, slit the glue joints and the body is ready to be hollowed out. Hollow out to a thickness of %" with a concave gouge.

Next cut a piece of 1/8" plywood to a diameter of 3-

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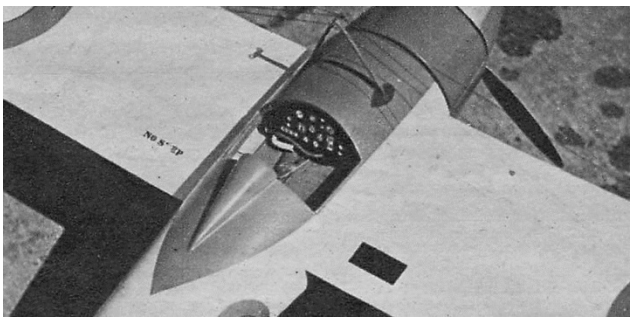

**Cockpit details on Chet Lanzo's original Morane. Ship lends itself to dressing up details. Bracing is not difficult, adds to looks.**

**Sharp looking character is the M.S. even though it was designed before World War I. Note cowled engine, big spinner, clean lines.**

5/16". This is to be used as the front bulkhead for mounting both the motor and the landing gear. Glue this in place in the bottom portion of the fuselage, 2" from the front of the cowl. Apply about 3 good coats of glue.

Next cut out the cockpit in the top portion of the fuselage with a penknife. Also with a razor blade slit the top cowl from the rest of the body and glue two pieces of 1/8" wood dowel pins into the removable portion of the cowl. Drill identical holes to match in the bottom half of the cowl for a tight fit, so that motor vibration will not cause the cowl to loosen. Another bulkhead of 1/16" plywood 1-5/8" in radius is made and glued in place 3-3/4" behind the motor bulkhead.

Bend the landing gear to shape from 3/32" music wire and mount on the plywood bulkheads with the metal fasteners shown on the plans, use plenty of cement at these spots.

Construction of the wing may now be begun. Cut out 22 ribs from 1/16" hard sheet balsa and 2 from hard 1/8" sheet, glue these in place between the 3/8" x 1" leading and 1/4" x 1" trailing edge. Use 1/16" strips of balsa under the rear of the leading edge to get the necessary under camber. The tips are of 1/4" square very hard balsa. Round the outside corners of the tips on a 3/32" radius. Next shape the leading and trailing edges with heavy sandpaper to the proper contour. Add the 3-1/2" square of 1/16" or 3/32" plywood to the center section, flush with the bottom of the ribs. The control plate is then mounted on this 1/16" plywood base with a small machine screw.

Insert the 1/16" I. D. aluminum tubes in the left wing tip and glue well. Fasten 2 lengths of 1/32" diameter wire 16" long to the control plate, after running them through the two aluminum tubes, and through 1/16" diameter holes drilled into the right panel wing ribs. The wing except for the center section is now covered with silk and given three coats of clear dope.

Cut out the top portion of the body to clear the wing profile and after installing the coil behind the firewall, the wing may be glued in place.

The tail assembly is constructed from hard 1/8" sheet balsa. Sand to a streamlined shape with heavy sandpaper, then finish up with a fine sanding. Coat the rudder and stabilizer with Japanese tissue and then apply 3 coats of clear dope. Remove enough wood from the rear of the fuselage so that the elevator will be a snug fit and glue it into place. Hook up the control wire from the bell- crank to the tail control horn. Insert the bamboo tail skid in its proper position and glue firmly in place. Next glue the top of the body over the bottom, applying plenty of cement. Do not add the rudder until all of the pigment doping is done.

All that remains to be done now is the final finish doping. This consists of 4 coats of yellow applied to the body, wing, and stabilizer. The insignia are easily drawn on the model with an inking compass. Thin out the dope until it runs easily. Add the remaining details such as the head rest and the wing wire brace mounts.

The Arden engine is mounted inverted, so allow about 1/8" clearance around the fins to keep the body paint

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from catching fire. The battery box (an Austin 2 pen cell box) fits neatly into the cockpit for ignition.

**Flying notes:** The model should balance on the leading edge of the wing. When it was first flown the center of gravity was about 2" from the leading edge of the wing; this produced very erratic flights. The opinion of the experts was that the high under camber in the wing ribs was causing this. Upon moving the center of gravity to the leading edge of the wing, excellent results were obtained.

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