

A 1917 Scale R/C replica of an intriguing WW I aircraft.



Merco .49 power, with Micro-Avionic radio system brains.

Poised for flight. The Morane Saulnier Parasol was an advanced aircraft for the year 1917. It flies on today in model form, ideal for WWI meets.

57" in span, 2" scale, 37" length overall. The military designation is MS.29C.i. Somehow this ship is more at home in a dogfight. A good bird.

Morane Saulnier AI MS. 29C. 1

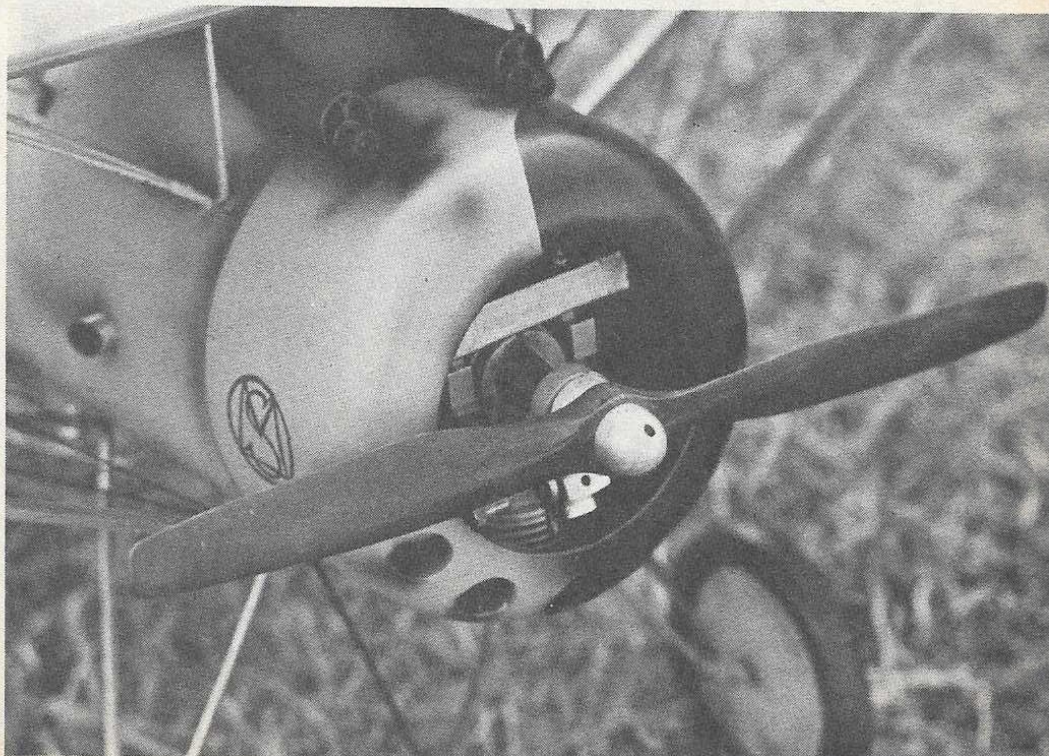
by Nick Zirolì

World War 1 aircraft are usually considered to be synonymous with biplanes. True, most of the more popular and successful planes of the period were biplanes. The most noteworthy exceptions were the Fokker and Sopwith triplanes. As far as monoplanes go, most people would be hard pressed to name more than a couple, probably the Fokker E-111 "Eindecker" or D-V111 "Flying Razor". The latter was developed late in 1918 and saw little active service.

It seems strange that in the early days of the war there were quite a few monoplanes in use. Some had very good performance for their day. Among them were Nieuports, Bristols, Bleriot's, Fokkers, Taubes and Morane Saulniers. Our subject here is one of the Morane Saulniers developed in 1917.

The ring cowl hides a Merco .49 inverted Williams Bros. machine guns add realistic detail.

FLYING MODELS





The side profile. A rounded fuselage, adequate in detail, a classic ship that offers WWI character as well as better than average performance.

Nick and his Saulnier Parasol, Pittstown, N.J.



Morane Saulnier built their first parasol in 1913. This was the type L or MS.3. Roland Garros made the type L famous by firing an unsynchronized machine gun through the propeller. He fitted the blades with steel plates to deflect the bullets that would have hit them. He scored five victories in a short time with his new secret weapon. On his sixth attempt the propeller was damaged forcing him to land in German territory. The Germans were quick to order a duplicate of Garros's deflector. Instead Fokker went one better and developed a synchronizing device that allowed the gun to fire only when the propeller blades were clear.

Another first for the type L was the air to air downing of a Zeppelin.

Morane Saulnier produced many types install on wood mounts.

While on the subject of servos, lets discuss the aileron hookup. The wing is too thin to conceal a servo, even the tiny Micro Avionics units. Instead it is mounted vertically in the fuselage with a pushrod running up and out the sides to aileron horns in the wing. New holes must be drilled in the output wheel so the pushrod will run off square to it. The pushrods are connected to "DuBro" or "Rocket City" aileron links on horns formed in the end of the torque tubes in the wings. A Rotar output servo is desirable, but one with linear outputs could be used by running it through two 120 degree bellcranks to the pushrods.

Assembly

Construction is not at all difficult. The most difficult part is bending the wire struts and braces to shape. This is made easier by using 3/32" dia. welding rod. It is easy to form yet strong. The wing is built in one piece on a flat surface. Use hard straight balsa or spruce for the spars. Cut the 1/8" plywood wing joiners to shape and position on the plan. Slide the ribs over the spars and pin over the plan. Epoxy the spars to the plywood joiners. Cement the ribs in place. Add the leading and trailing edges. Epoxy the spar joint braces and R-1 in place. Make the trailing edge cut-out from hard 1/4" x 1/2".

Assemble the ailerons over the plan. Cement the 1/4" square tip and RTs in



Appealing from any angle, something to see in the air. Ship has no bad habits, not very difficult to fly. For the flyer of average aptitude.

place. Cut the tips to separate the ailerons when the wing is dry and off the plan. Cement 1/8" square fillers to the top and bottom of the rear spar at the aileron cut-outs. Cut out and drill 1/8" plywood strut mounts. Epoxy in place. Twelve 4-40 blind nuts are epoxied into these holes and four others in the center-section plates.

Bend the aileron torque tube ends to

shape from 3/32" dia. welding rod mentioned earlier.

Epoxy the aileron end into the aileron. It goes in a groove on the back of the 1/4" x 1/2" front piece.

The torque tube assembly rides in two 3/32" I.D. eyelets epoxied into the end ribs. This has proved to have enough strength, but a backup plate of thin ply-

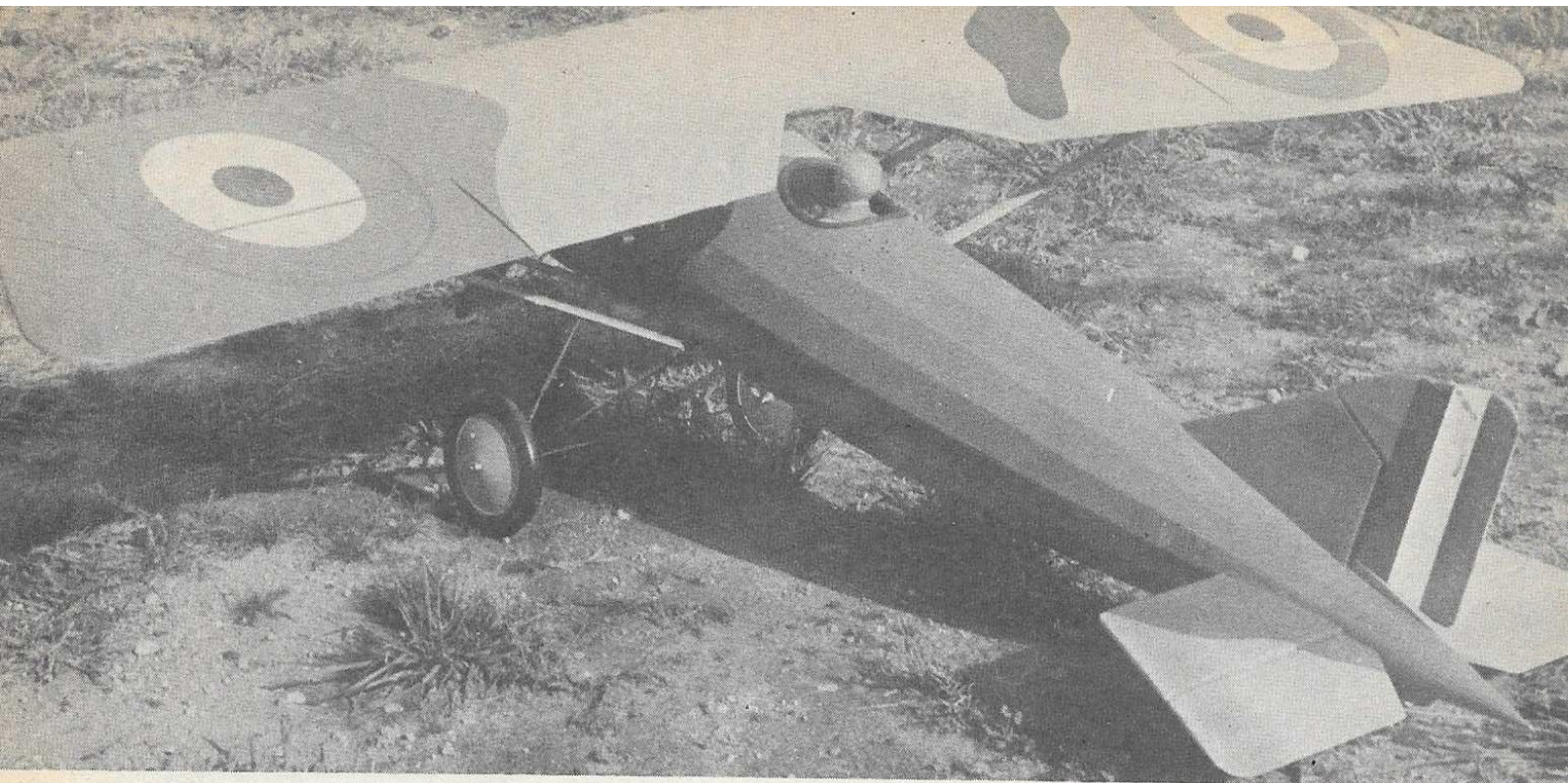
wood could be added at each bearing point. Assemble the 1/8" dia. tube and wire pieces. Hold in alignment and solder. After the wing is sanded it can be covered.

The fuselage is a built up box with the uprights and cross-pieces being the formers. It goes together fast and when completed is very strong.

Cut the 1/4" sheet side pieces to shape.

The tan-green spray-on camouflage pattern adds the flavor. The Morane Saulnier Parasol is little known, though an interesting aircraft type.





The stringered fuselage structure is visible here. Time to try a scale ship, break out of the rut of "look-alike" aircraft. Spring is at hand.

They are wider than 4", so a piece will have to be glued on or cut it from 6" wide sheet. Cut out all formers. All four are the same at each station from the cockpit back. Assemble the sides over the plan.

When dry, epoxy them to the 1/4" plywood firewall and structure. Do this with the firewall flat on the bench and the sides standing up in the air. This makes it easier to align the sides. After the epoxy has cured, pull the tail together and add the remaining formers. Cement the 1/8" x 3/8" stringers in place. Taper them as required to form a point at the tail. Fill in the areas between the stringers with 1/8" sheet where the stabilizer and rudder will go. of monoplanes, among them, the L, LA, P, N, AC and shown here the AI.

The AI, like the Fokker D-VIII went into service late in the war and saw only two months combat duty. After that it served as a training plane. For the small combat roll the AI played, quite a number were made, 1,210 in all.

Our model is built to a scale of 2"=1'. It has a 57" wingspan and approximately 540 square inches of wing area. The stabilizer area is rather small, about 15%. However with proportional control and a properly located center of gravity, it poses no flight problems. In fact control is very smooth. Those that saw it fly at Rheinbeck '69 can attest to it.

We used a Merco .49 for power. The plane weighed 6-1/4 pounds ready to go less fuel. With this power and weight all the required scale maneuvers could be performed. A .45 should be used only if you build a very light model, less than 6 pounds. A .60 would not be too much. Too much power is far better than too little in a model of this type.

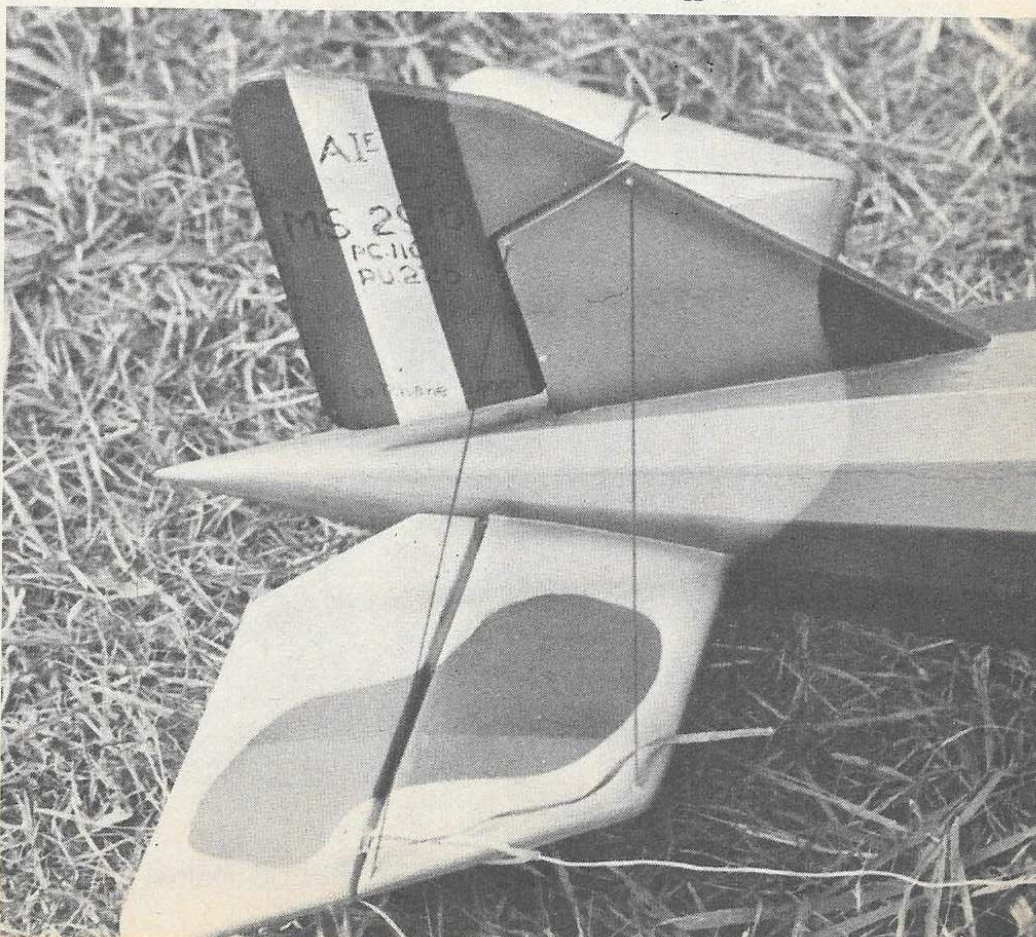
Radio equipment used was a Micro Avionics XLIC. This is one of the nicest looking rigs around. The servos are the smallest available at this time. They appear to have ample power to handle the largest multi. My only complaint is the servos are

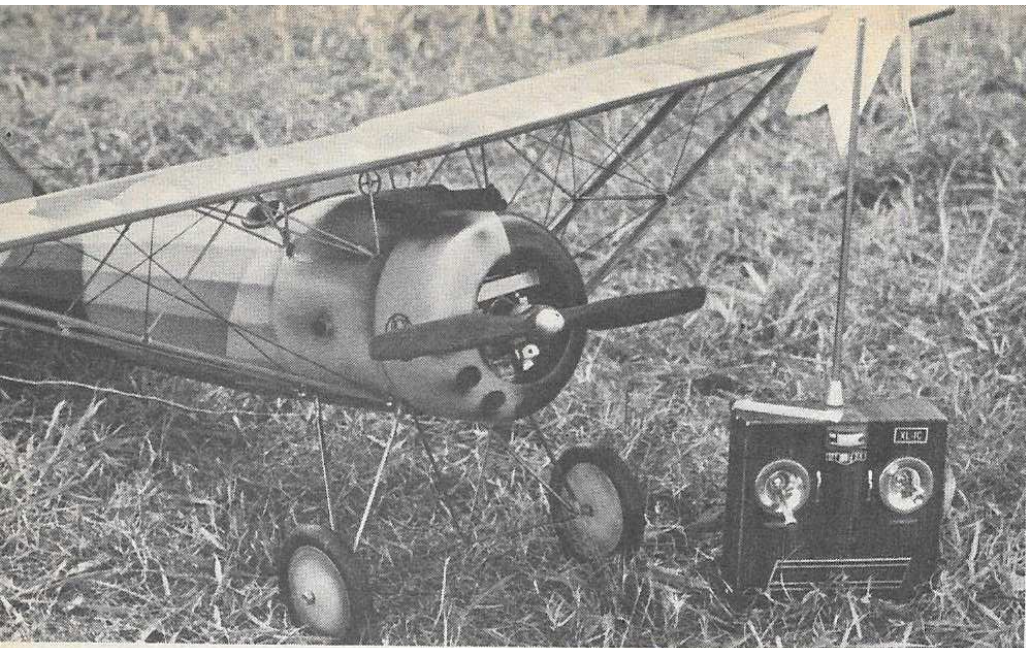
so designed that it makes them very difficult to mount without the use of a plastic servo tray that is made for the purpose. Why not include a set with the system? There are many combinations available. However, a three side by side and a single aileron servo mount would do in most cases. It is a small complaint and does not reflect on the system itself. It's just that it would save the frustration of trying to

Sheet the sides and cockpit area. Cut down the stringers at the formers where the sheet goes. Cement four 1/8" square stringers on the edges of the 1/4" squares. This should form a round structure from the cockpit to the tail.

Bend the landing gear legs to shape from 5/32" dia. music wire. All the wing struts are made from 3/32" dia. welding rod. The loops for wing mounting screws are easily

Tail surfaces offer no dilemma, easy and rugged.





The Micro Avionics system flies it well. Any system will fit in easily.

bent with pointed pliers. Mount the landing gear and cabane struts with sheet metal straps and 4-40 screws and nuts. Wrap all joints with copper wire and solder.

Mount the engine with either Midwest or Tatone mounts. We used the Midwest C-14 mounts with good results. No thrust offsets were used.

Epoxy the machine gun deck in place. Mount the Williams Bros. Vickers machine guns in such a way that they will be removable for finishing and painting. Two blocks were epoxied next to each gun so they were a tight fit between them. They could then be pulled out the front or inserted as required.

The cowl over the guns is cut from thin aluminum and contact cemented in place. Aluminum from printing plates was used. Build up and sheet the bottom hatch in place over the opening. A screw into the

firewall and one into a block epoxied to the frame secure it.

The stabilizer is built into the fuselage. Cut holes in the filled areas for the leading edge and spar. Slide them through and cement. Make sure they are parallel to each other and square to the wing. Add the ribs and tips. Then sand to shape. The elevators are built separately and joined with $3/32$ " dia. wire when they are hinged.

Slot the fin spar so it will go over the top $1/8$ " x $3/8$ " stringer down to the bottom stringer. Cut two holes in sheet and cement in place. Build up the remaining fin and sand to shape. Assemble the rudder. The rudder is connected to the tailskid and they turn together. On grass a steerable tailskid is almost as effective as a wheel. The rudder pushrod runs out the bottom of the fuselage to a metal horn solder to the tailskid.



The nose is short and stubby, keep tail light.

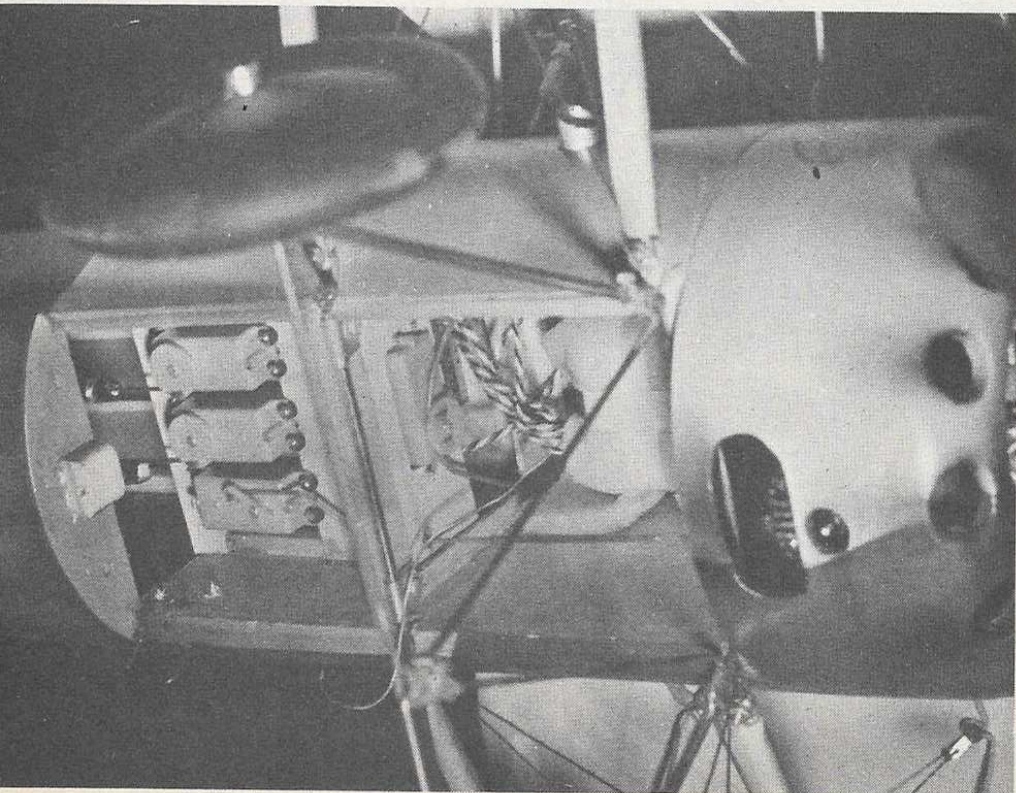
The cowl is built up of $1/4$ " sheet quarters on a base ring of $1/8$ " plywood. It is held on with three $1/2$ " sheet metal screws into the firewall. One could be molded of fiberglass instead if desired. A heavy cowl will do no harm as about 6 ounces of nose weight is required with a balsa one.

The wing struts were made from pine. Holes are drilled into the ends and $3/32$ " dia. wire with loops bent in the ends epoxied into them. They are held to the wing and landing gear legs with 4-40 screws.

Cover the plane with silk and clear dope with as many coats as required to seal. Quick and Easy Products "Topcote" was used on the model as shown here. This is a clear plastic material similar to "MonoKote". It is applied like "MonoKote" but can be painted with most any type paint. "Sig" Dope was used in this case. The bottom of the wing and stabilizer are painted cream. A light tan or sand color with a camouflage pattern of light green, dark green and dark brown over it is used on the rest of the plane. The roundels and rudder stripes are painted on last. A couple of coats of clear dope sprayed on in a fine mist so it is almost dry when it hits will give a dull finish over the entire plane. The removable hatch was natural aluminum so it should be painted silver.

Install the engine and radio equipment. Make sure the aileron pushrods do not bind against the fuselage sides where they exit. Use a piece of lead bar stock for nose weight if required and it will be. It was bolted across the engine mounts.

If the center of gravity is correct and the surfaces have no warps in them, flying should be smooth from the first. The first flight on the original did not require touching one trim on the transmitter to get a true flight path. This is one that did literally fly off the board, to the amazement of those that were present. It should perform as well for you.



The Micro Avionics system mounts with vast room to spare. Easily accessible through radio compartment hatch. Keep the radio forward to balance.