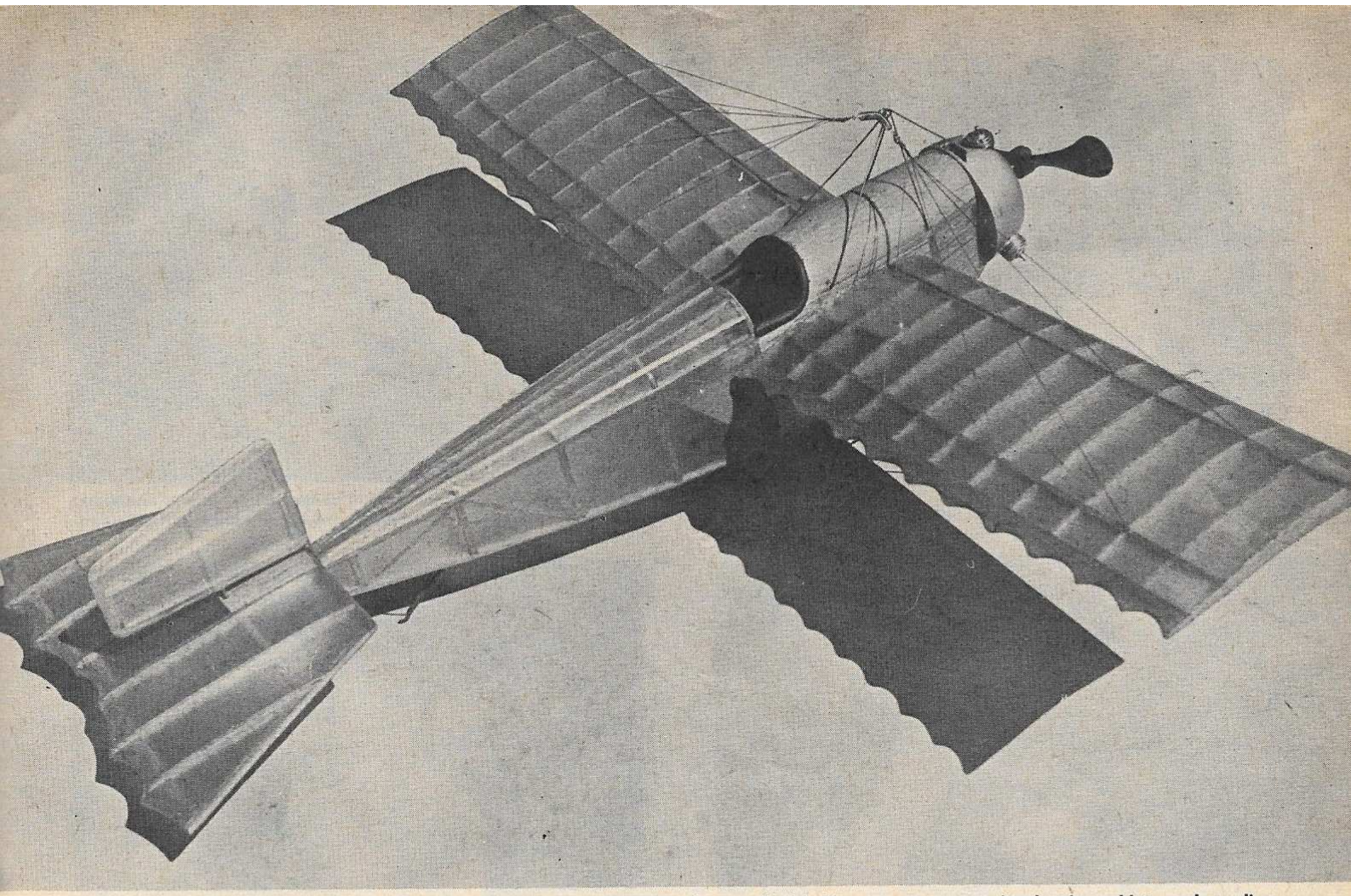


Simple lightweight construction allows leeway for the many details that make a scale job. Turnover structure, wing bracing add to scale realism.

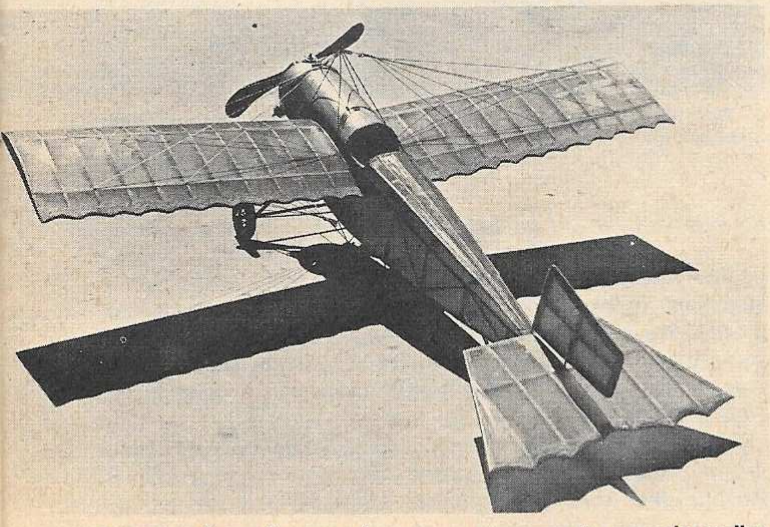
Caudron Monoplane

by HARRY ENGLISH

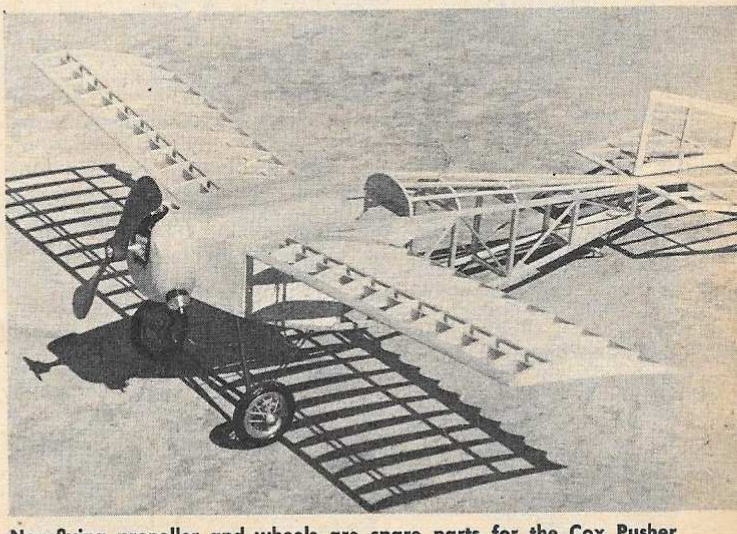
Old airplanes like old generals never die, they just become excellent scale models. Our Frenchy has an outstanding history of excellent flying scale and with our present small ¼A engines it is unbeatable.

► One of the first model magazines I saw as a boy was a Nationals issue showing the winners of, I believe, the 1939 Nats. Henry Struck won rubber powered flying scale that year with the old French Caudron monoplane and a fantastic thermal flight.

My own Caudron model wasn't built until 1960 but, with its spoke wheels, its scalloped wings and many flying wires, it still puts in a good showing at any scale meet, always attracting more spectators (*Continued on page* 39)



This view from the rear shows care necessary to properly scallop wing trailing edge and the mounting posts for the adjustable rudder.



Non-flying propeller and wheels are spare parts for the Cox Pusher control liner—dummy cylinders are from Cox burned out glow heads.

Caudron Monoplane

(*Continued from page* 21)

and camera bugs than many sleek modern jobs!

Construction is of the simple "stick-model" type and flying performance is very good with a Cox Pee Wee .020 up front. So few liberties have been taken with deviations from scale that the Caudron will very likely gather far more than average points of any of today's scale meets. Whether you fly scale models only for contests or for sport, the Caudron is fun to build, and more fun to fly.

FUSELAGE

This structure is the common built-up box type. Sides are built one on top of the other over the full size plans. When dry, install cross members by pairs starting at the cockpit and working toward the tail. Now add the remaining members toward the nose. Note that the longerons are cracked at the first bay to get the sharp angle toward the nose.

Check the fuselage structure for squareness and fill the sheeted areas with balsa as shown. Cut the slots for the wing tongue very carefully using a template if necessary to get the slot in the exact spot on each side. Install the two ⅛" sheet number 5 formers and cement well. The wing tongue is cut from mahogany or birch plywood. Cut in half and cement through the fuselage slots to number 5 formers. Check for dihedral symmetry on each side. If the number 5 formers have been installed carefully this should be exact.

Cement aluminum tubes in place for top rigging posts. Formers, stringers and front fuselage block are now added. The front fuselage block is very soft balsa carved and sanded to shape, hollowed if your models usually come out on the heavy side.

Shape and drill the firewall for engine mounting and use blind nuts or threaded nut plate behind the firewall before cementing to the fuselage. The laminated nose block is shaped and hollowed and then cemented to the firewall. Be sure to use fuel proof cement here—applied liberally.

WING

Start wing construction by building the wing tongue boxes around the tongue in place on the fuselage. Use care not to cement these boxes to the fuselage itself. We used hard 1/32" sheet for box material. Covering the boxes with tissue and doping adds a great deal to their strength. Or, if you prefer, bind the boxes with silk thread and cement.

When thoroughly dry, cement the boxes into their slots in the first 3 ribs, aligning carefully. We performed this operation "in the air" and installed the whole box and rib structure between leading and trailing edges right on the plans. The first 3 ribs aren't notched for spars at this time. The other ribs are now glued in place and top spars inserted. When dry (overnight, if possible) lift each wing half from the plans and insert the bottom spars. A lot of grief may be saved if you don't cut slots for the rear bottom spar until this point, cutting slots and inserting the spar a rib at a time with accurate alignment. Note that the center 3 ribs of each wing are flat on the bottom for strength and the bottom spars must be bent slightly to meet the flat camber.

Afer sanding the wing structure well, pin the wing halves together bottom to bottom and, using a sandpaper wrapped dowel or broomstick piece, sand the scallops into the trailing edges.

TAIL SURFACES

The rudder and stabilizer structures are simply outlines pinned in place with "spars" and "ribs" cemented in. If you desire, soft 3/32" sheet balsa may be substituted for the entire tail surfaces. A little more strength will be available this way, at the sacrifice of scale structure appearance.

A short length of music wire is cemented into the rudder as a pivot post with a long straight pin at the leading edge serving for adjustments. The wire rudder post goes though a hole in the stab into the aluminum tube at the end of the fuselage.

WIRE DETAILS

All the wire rigging posts, landing gear, etc. may be bent over the plans and soldered together very simply. Landing gear parts look sturdier and more to scale if black plastic or rubber tubing is slipped over the various pieces before binding and soldering.

The rigging posts slip into the aluminum tubes in the front cockpit block and the tailskid is cemented into 1/16" balsa let into the bottom of the aft fuselage section. A balsa sandwich holds the landing gear in place. Use lots of cement here and add some extra gussets for strength. The rear part of the landing gear structure is thread wrapped to the fuselage cross member at this point. We used a pair of wheels from a Cox Curtiss Pusher (available as spare parts for ninety cents per set of 3) but if you can't come by a set of these, a pair of plastic spoke type wheels can be found in toy stores on inexpensive toy cars.

COVERING, ASSEMBLY AND RIGGING

Cover the entire model with jap tissue or light Silkspan. Water shrink and dope with 3 or 4 thin coats or until a light sheen is apparent—at least enough dope to fill the paper pores. If you've built the tail surfaces with sheet balsa instead of built-up, cover these parts too for strength. Fuel proof if you haven't been using fuel proof dope. White or yellow tissue will approximate the scale finish. No color dope needed unless you desire paint trim on a sport version.

Slip the wings in place on the tongues and sew strong thread through the points shown on the plans to the rigging post and landing gear hook. You may wish to use rubber bands at one end of the threads for quick disassembly. The rudder pivot post slips through the small hole in the stab and into the aluminum tubing at the fuselage rear. The pin is pushed into place and may be pulled out and moved for flight adjustments. Now cement only the leading edge of the stab to the fuselage.

FLYING

Balance the model at the C.G. point shown. Both of the Caudrons I've built have been nose heavy and required a little lead or clay at the rear for correction. Since no incidence is shown on the plans, this will have to come from hand glides in tall grass. A balsa sliver approximately 1/16" thick will be needed at the point where the stab meets the fuselage rear. When the model has a long, flat glide of, say, 20 feet with no turns, cement this incidence in place and try a short medium power flight. My models needed no thrust adjustments at all and a very small amount of right rudder gives a very realistic flight pattern. R.O.G.'s are no problem at all and the model has been very stable with the Cox .020 Pee Wee. I'm afraid it might be a little hot, though, with the new Tee Dee .020!