



# Convictor

**Something different for single-channel — L. W. Lambert's  
Canard delta for .049 power**

I HAD for some time been toying with the idea of building something a little different from the normal type of model aircraft seen on any flying field on a Sunday afternoon, and set myself the following parameters. The main features of the design had to be ultra stability, and with the engine at the rear for protection—and cleanliness. Also, the aircraft had to have what I call “buildability” (i.e. be easy to build, for the comparative novice, and for the chap who likes to spend plenty of time flying and as little as possible on building!). I chose the Cox .049 “QZ” glow motor because of its willingness to run either way—a necessity for a pusher model, unless you can obtain “pusher” props easily. (*Actually, of course, pusher props are available for this size of motor.—Eds.*)

The *Convictor* performs very well, and the ability to turn very tightly may be found exciting. Re-

covery from a turn is nice and quick, so that some very interesting flying may be done, provided you are adept with the Tx button. On the other hand, it is very stable and forgiving, even in the hands of the novice, when rudder movement is restricted. The landing approach is rather steep, however, as is generally the case with this configuration, and takes some little getting used to.

It pays, therefore, to keep the model as light as possible, so select your wood carefully with this end in mind, and also go easy on the finish, to keep the weight down.

## CONSTRUCTION

### Wing and foreplanes

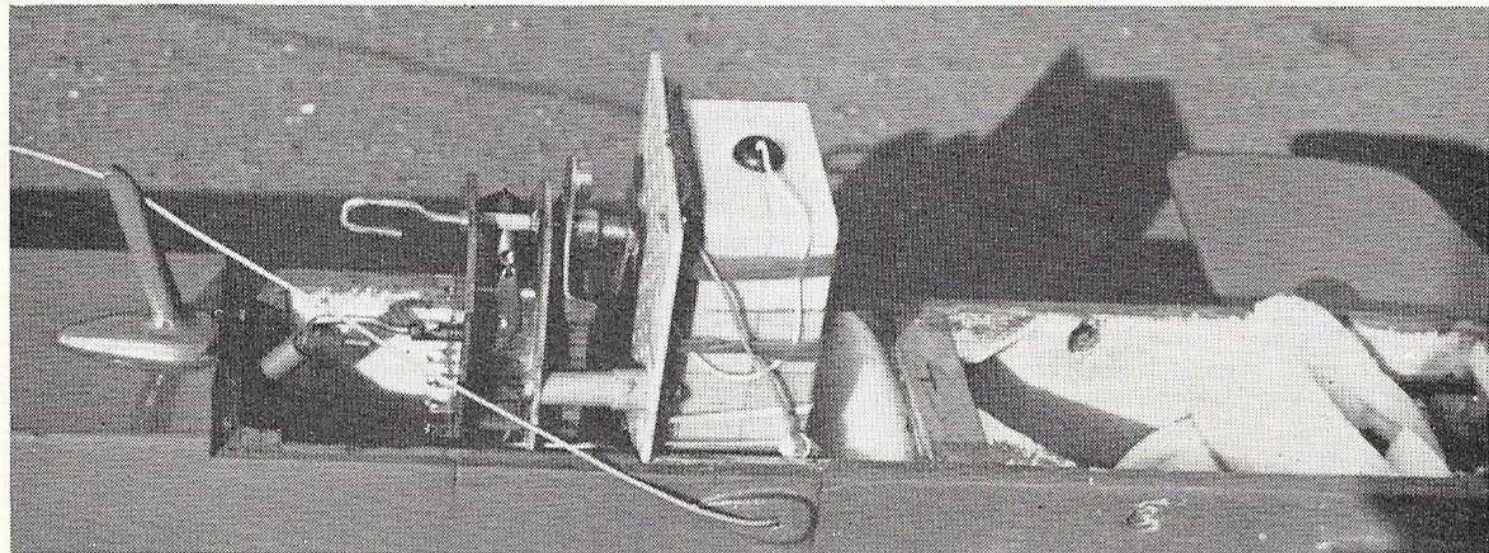
The mainplane is made up from six lengths of 4in. wide  $\frac{3}{8}$ in. sheet. Mark out the rough length of each piece, using the plan and, with a square, mark a line through each piece in the centre. Pin down the largest piece and use PVA on one

edge to glue the next largest piece to it, pinning the assembly down well. Progress with the remaining pieces until the mainplane is complete, and leave to set overnight.

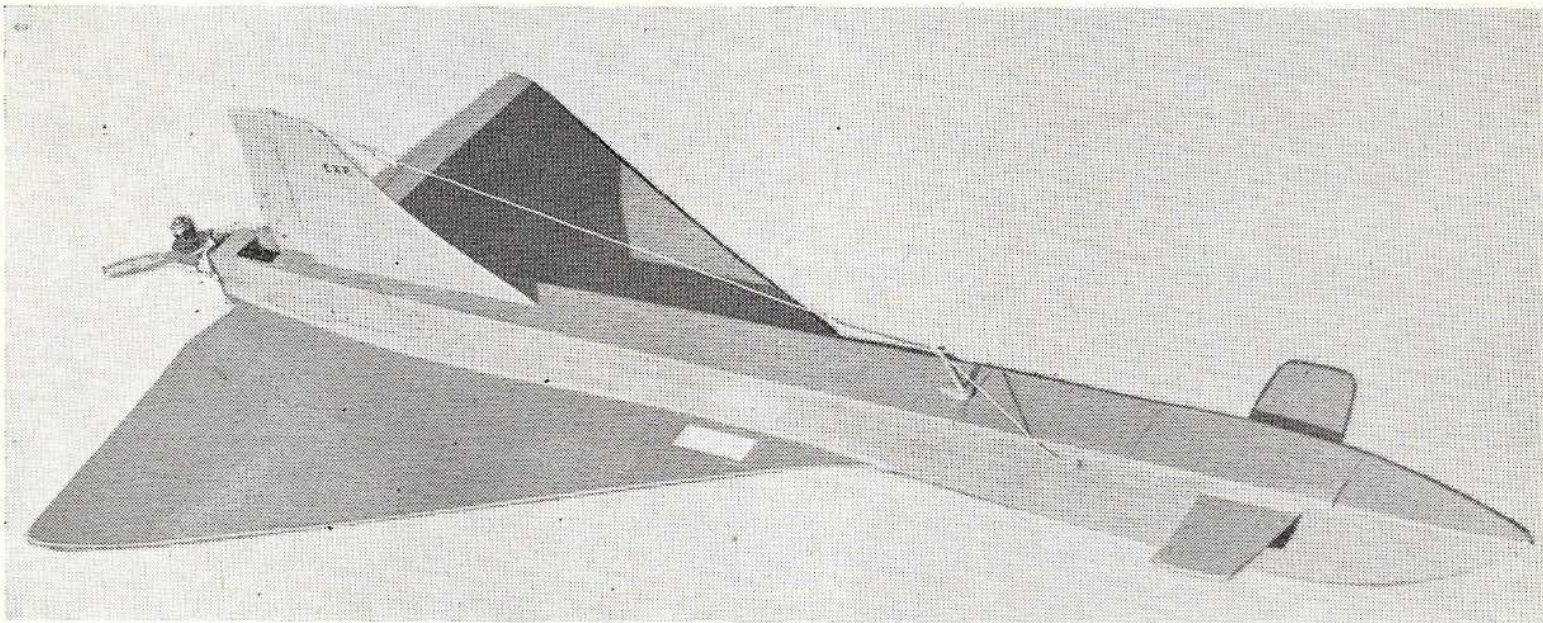
When thoroughly dry, remove the wing from the building board and place it under the plan. Line it up, marking the centre-line and, using carbon-paper, mark out the exact outline of the mainplane. Now do the final shaping, to the out-line, sand over all and cover with heavy-weight Modelspan tissue. I find it best to cover the mainplane prior to fitting to the fuselage, as it is much easier this way, due to its shape.

Make the foreplanes from  $\frac{1}{8}$ in. hard balsa and cover them with lightweight Modelspan tissue, giving them one coat of sanding sealer and rubbing down well when thoroughly dry. Mark out the fin

Novel method of mounting receiver and escapement on slide-in panel. (Not obligatory and, in fact, not shown on plan.)







Now cement the second side in place to the former, squaring up and once again leaving to set thoroughly.

When the assembly is dry, cement the top and bottom  $\frac{1}{4}$  in. cross-pieces and uprights in position, pinning the assembly down and, once again, leaving it to set. Now pin the structure down accurately on the plan and pull in the rear part, lining it up with the plan. Cement

former G in position, having previously made up (and fixed for length) the torque-rod. Next fit the engine-mounting block "I" in position. (The bolts have two washers and two nuts on each, so that any alterations to the engine thrust-line are facilitated.) All the other cross-pieces may now be fitted.

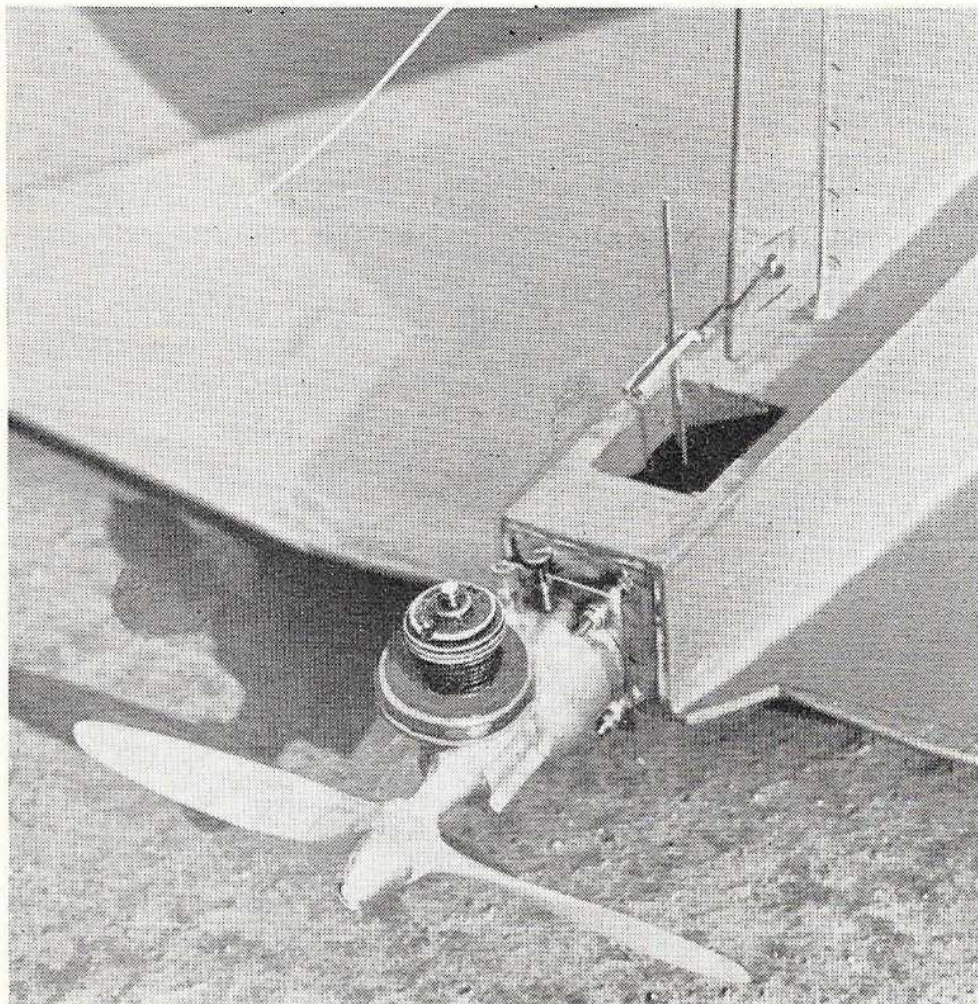
The torque-rod bearing, former G, is laminated balsa and ply, the

torque-rod being fitted prior to cementing in place. *Note:* Leave the balsa rod extra long so that, prior to cementing the former in, you can place the escapement in its intended position, cutting the torque-rod to its correct length and fitting the coupling and hardware. The spring-and-washer system, at the rear end, is used to keep the rod and coupling located securely—the spring from a retractable-type ball-point pen is ideal for this job.

Fit pieces of celluloid to the sides and bottom of the fuselage, as shown, to protect the escapement rubber against chafing when being wound up. Draw the fuselage sides together at the nose and fit former D, then the  $\frac{3}{8}$  in. nose-former, nose-block and  $\frac{1}{4}$  in. anti-compression strut. Fit the mainplane, using PVA, as this is slower setting than balsa cement and gives one time to align it and pin it down before it starts to dry. Next fit the fin, again using PVA and making sure that it is vertical and on the centre-line of the fuselage. When set, fit the small triangular-section fillets for strength.

The top and bottom of the fuselage are now sheeted, omitting the sheeting at the top hatch position as this is made separately as per plan. Use a hard grade of balsa for the bottom of the fuselage, for

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Rear-mounted Cox "QZ" motor is used by designer, running in reverse (i.e. clockwise) direction, but a range of Tornado pusher props is available through Ripmax stockists for those who prefer to flick the way they are used to!

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obvious reasons. Now make up the hatch, fit it and secure with  $\frac{1}{8}$  in. dowel. Finally, make and fit the rear escapement-winding hatch.

## Assembly and finishing

After sanding the whole airframe, cover the fuselage and fin with Modelspan tissue and give it two coats of sanding sealer, rubbing down well with fine garnet paper between coats. Cut out the  $\frac{1}{4}$  in. balsa keel, sanding it off and cement it securely to the bottom of the fuselage, using a good fillet of cement around the joint. Cut the Modelspan away from the foreplane slots and cement the foreplanes in place, again using a liberal fillet of cement around them. Note that there is  $2^\circ$  dihedral under each foreplane, so prop them up with suitable objects (dope tins or similar) while drying out.

Give the model one more complete coat of sanding sealer and rub it down, using the finest grade of garnet paper, before putting on the finishing coat of colour. (I used Humbrol enamel and fuel-proofer, though another good finish I sometimes use is International One-plus-one polyurethane.) Also finish off and paint the rudder and, when dry, sew it onto the fin, using thread as shown on the plan. When all is completed, the radio gear and engine may be installed.

## Trimming and flying

Trim the *Convictor* by adding weight to the special compartment, until the model balances at the point marked on the plan. Hold the model upside-down to check this. Check to make sure that the flying surfaces are true and that the fin and rudder are in line, and

set the rudder for  $\frac{2}{3}$  maximum throw. Now you are ready for first flights.

Check your radio gear for operation and range while the motor is running and, if all is O.K. you can launch the model. *Don't forget to have the engine running clockwise and the prop fitted "backwards."* The model needs a launch very much like the way you would throw a dart—straight, fast and level. Once you have given two or three launches you will get the hang of it. It is easier to launch in a little wind than when there is none. Give very short pulses of signal for any corrections required, at first, until you have got *Convictor* up to a safe height. You can then experiment, to get the feel of the model's response, by giving slightly longer signals, and see how she reacts. Note the quick recovery from even the steepest turns, once opposite rudder is blipped. Once you have had a few dozen flights, and really got to know what to expect from *Convictor*, it will be safe to increase the rudder throw to maximum, and really get some exciting flying!