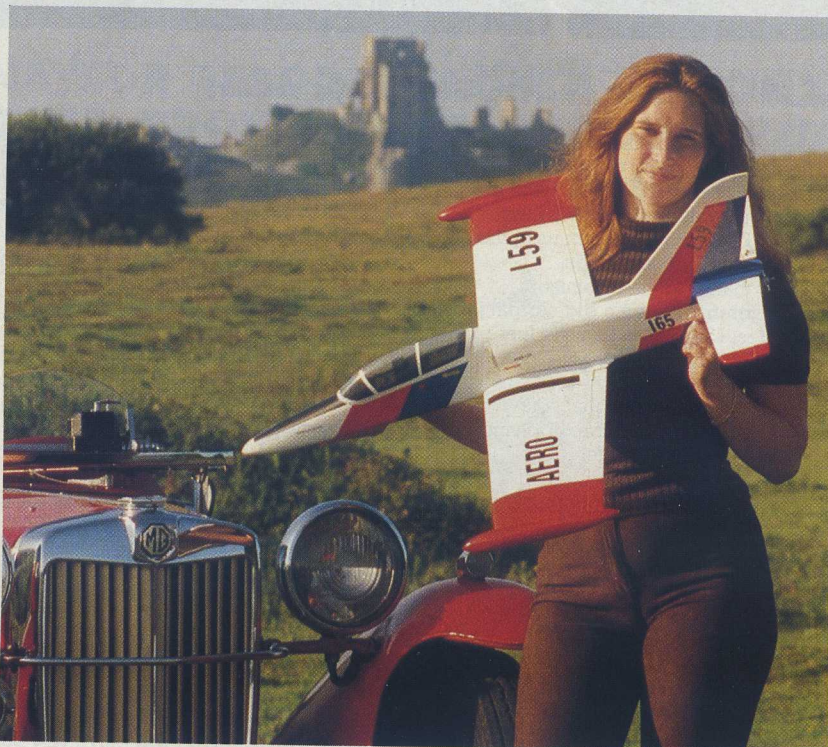


# AERO L59

CYRIL CARR INTRODUCES HIS MULTI-PURPOSE SEMI-SCALE JET FOR ELECTRIC 540 OR PSS



Cyril's daughter Stephanie with the L59.

I was initially drawn to the L59 when I saw a static model on the Aero stand at Farnborough, for, not only did the model have attractive lines, it had a particularly eye catching colour scheme too. I have made several semi-scale jets for electric flight and thought that the L59 could be designed as a pusher model whilst also being ideal for PSS (Power Scale Soaring). I have found that pusher propellers are very effective, possibly giving up to 15% more thrust, but for some reason propeller noise is higher.

To ensure a satisfactory performance in model form, some dimensions have been modified a little, but I have been very careful not to disturb the overall lines of this very shapely aircraft. The body is marginally slimmer and the wing area has been increased, however, if you wish to achieve an even closer scale appearance then the span can be reduced by removing the outer panel of each wing. Only do this if you are fully aware of the effects that the modification will have on performance and handling.

## FUSELAGE

Construction begins by cutting the two fuselage sides from 1/8" medium balsa. Whilst working with the 1/8, cut out formers F1 to F8 and then move to 1/2" soft balsa and cut B1 to B5. Notice the slight angles to the sides of B3 and B4. Mark the position of all these parts on the inside surfaces of the fuselage sides. Scoop out parts of B2 and B3 where the Rx NiCad will fit. It is important that all batteries are fitted as far forward as possible to achieve the correct centre of gravity.

Glue B2 and B5 together at the correct angle and glue formers F1 to F5 in position on B2 and B5. Allow to set. Glue the lower half of the two fuselage sides to B2 and B5, allow to dry and then glue B1, B3 and B4 in place. When ready apply glue to the top half of the formers, pull the sides in and pin in place to achieve the correct shape. Remove the part of B2 where the wings will fit and add the servo tray F17 (1/8" ply) and ply facings F9 to F11 (1/32" ply). The dummy air intakes are

made by gluing half formers F12 - F16 to the fuselage sides followed by a covering of 1/16" sheet. Chamfer the edges as required and glue these in place to take on the correct curvature. As you will find out, the biggest part of the 1/16" intake side covering, is glued to the 1/8" fuselage side, at the rear. Sand the fuselage to shape and cut battery access slots in F6 and F7.

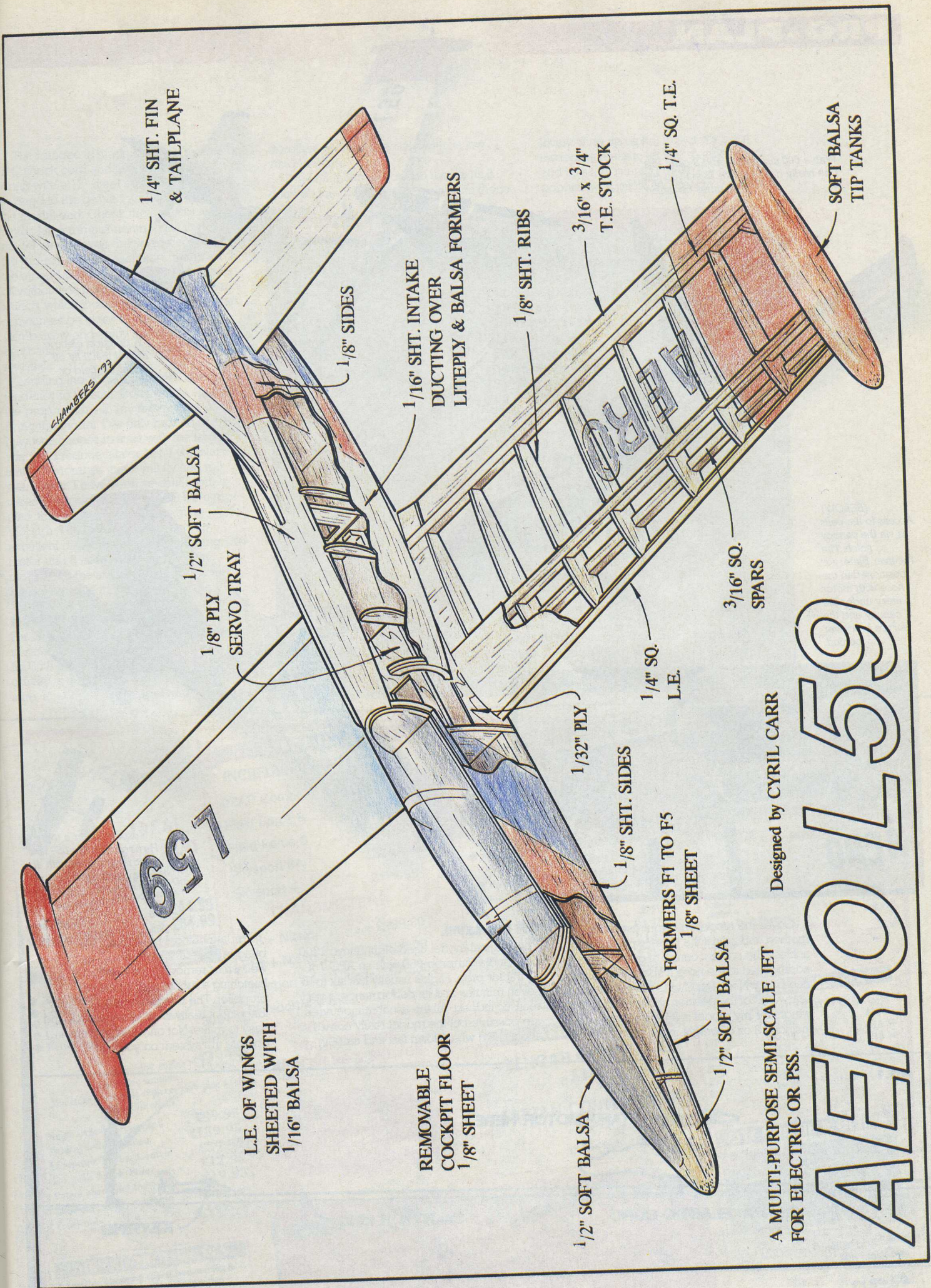
Sand the fin and tailplane to shape, cut the appropriate slots in the fuselage and install as accurately as possible. Make the cockpit glazing and fittings. A moulded canopy is available from the Nexus Plans department.

To finish the fuselage construction, make the motor tube from a two layer roll of 1/64" ply. Install the tube and cut the cooling slots for the brushes. Use a good 540 or 600 size motor, preferably timed for reverse running and a 7 x 4" prop. If the recommended bungee launching system is to be adopted (see page 70), install the launching hook at the position shown.

## WINGS

The wing profile shown on the plan is suitable for relaxed electric flying and PSS, however, as mentioned earlier, the span can be reduced by one panel on each side if you wish. No washout is required and if you prefer, the wings may also be completely sheet covered.

Cut all the ribs from 1/8" balsa and lay the lower main spar and aileron hinge line spar over the plan. Glue the ribs in position followed by the top spar and leading edge. Sheet the i.e. with 1/16" balsa and sheet also between R1 and R2. When dry remove from the plan and sheet the lower surface. Repeat for the second wing and cut a slot in the lower surfaces and R1 where the wing brace W1 will go. Join the wings with 8 degrees dihedral and wrap the joint with a reinforcement bandage of your choice. Install a plastic tube in one wing from root to tip for the Rx aerial and drill two holes for the wing fixing dowels as shown. Fit the wing fixing bracket at F11 and finally make and fit the ailerons noting that the movement is +/- 8 mm. The tip tanks can be detachable using dowels if you wish.



Designed by CYRIL CARR

A MULTI-PURPOSE SEMI-SCALE JET  
FOR ELECTRIC OR P.S.S.

# AERO L59

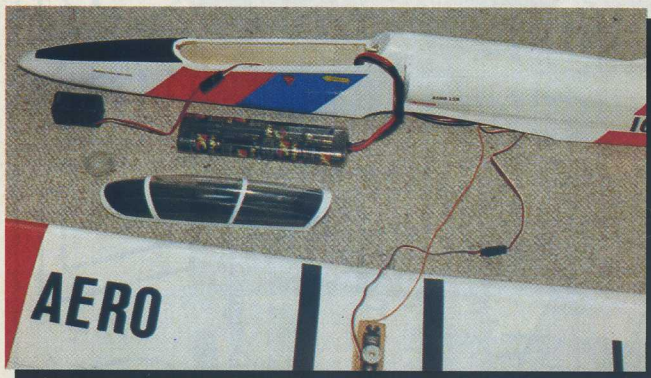
With a 600 size motor and 8 cells, this one really does groove. Don't you just love those tip tanks?



"A practical electric model that'll fly off either flat field or slope."



(BELOW)  
Access to the cells is via the canopy hatch. The receiver battery is positioned in the nose with motor battery under the canopy and the servos / receiver behind.



Inspired after a trip to Farnborough the L59 is a striking model with an equally striking colour scheme.

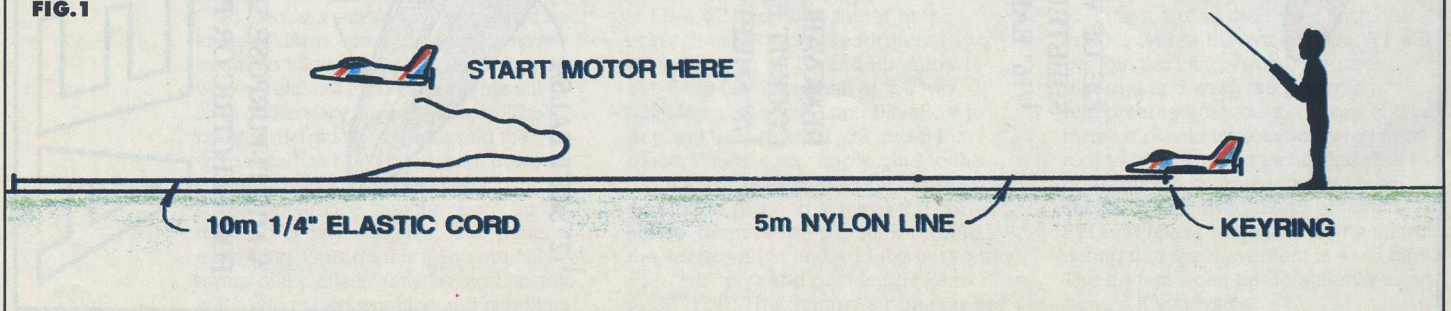
Cover the model with your preferred method and adjust the battery positions to achieve the correct centre of gravity adding lead to the nose if absolutely necessary. Note, the C of G must not be rearwards of the position shown! The flying weight for my model is 3 lbs which includes 2 oz of weight in the nose.

### ON THE LEVEL

The original model used eight Sanyo 1700 cells and a Simprop 660 with an APC 7 x 4" tractor prop. Flights usually last six to seven minutes and its performance is very realistic indeed. All the usual manoeuvres are possible but the model really comes into its own when flown fast and smooth.

For launching, I have found that the bungee system (Fig. 1) works extremely well whilst removing the dangers of hand launching a model with a pusher propeller. The bungee needn't be very long and it really is extremely quick and easy to make. Not only that, you can operate the system on your own.

FIG. 1



The bungee is made from ten metres of 1/4" shock cord and five metres of nylon string with a 12" steel spike firmly secured to the ground and a key ring at the model end. Check the controls and motor, have trims at neutral, pull the model back eleven or twelve paces along the ground and release! Start the motor in the air and you will have achieved a take-off without the possible struggle of a hand launch, which in zero wind conditions can sometimes be close to stalling speed. Climb away and enjoy some scale-like aerobatics, i.e. large loops, axial rolls and reversals.

Landing the '59 is easy, there is no tendency to tip stall. Don't worry about the prop. either - In my three years of flying the model, I've only broken one. You may well choose to start with the largest wing and reduce it later but if you start small, remember that it will fly and roll even faster. I have seen several models recently which have been built from my plan, the latest at the BEFA event at Woburn. The builder performed an excellent display with the larger wing, 600 motor and 8 cells, whereas my own model with the smaller wing was faster but not so agile in the vertical plane.

#### NOT ON THE LEVEL!

For use on the slope all you need to do is to remove the motor and NiCad pack and fly. With these removed the centre of gravity is about right but check to be sure. In good lift the model makes an

excellent glider especially with its low wing loading.

The L59 looks as good in the air as it does on the ground (especially with those

lovely wing tip tanks) in fact, it's long sweeping realistic jet like manoeuvres and its silent running make it a joy to fly - popular with pilots and spectators alike. ●

### DATAFILE

<b>Name:</b>	<b>Aero L59</b>
<b>Aircraft type:</b>	<b>Semi-scale sport model</b>
<b>Designed by:</b>	<b>Cyril Carr</b>
<b>Span:</b>	<b>40" standard layout 31" to scale outline</b>
<b>Wing area:</b>	<b>280 sq. in. (220 sq. in.)</b>
<b>Weight:</b>	<b>3 lb (electric) 1 lb 10 oz (PSS)</b>
<b>Wing loading:</b>	<b>24 oz/sq. ft (electric) 31 oz/sq. ft (electric - reduced wing) 13 oz/sq. ft (PSS) 25% of root chord.</b>
<b>C of G:</b>	<b>32"</b>
<b>Fuselage length:</b>	<b>2/3</b>
<b>Req. No. of channels:</b>	<b>2/3</b>
<b>Control functions:</b>	<b>Aileron, elevator, speed control</b>
<b>Control movements:</b>	<b>Aileron +/- 8 mm. Elevator +/- 8 mm.</b>
<b>Motor:</b>	<b>540 to 660 (20 turn) running in reverse with tractor 7 x 4 prop. or forwards with pusher.</b>
<b>Cells:</b>	<b>7, or preferably 8 cells pack.</b>

#### BUILD MATERIALS

<b>Fuselage:</b>	<b>Balsa</b>
<b>Wings:</b>	<b>Balsa</b>
<b>Canopy:</b>	<b>Available from Nexus. Telephone the Plans Department on 01442 66551.</b>



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