

BROADSIDE

1/2A TEAM RACER



1/2A TEAM RACING is an attractive event, quite as exciting as FAI but much less demanding on the pocket. One of the best available engines, the Oliver 'Cub', is British, and still costs only about £20. However, the event has been in the doldrums in recent years. The time seems right to ginger up interest in 1.5cc racing especially in these noise sensitive days. So come on beginners (and experts with ancient models). Could I also ask organisers to include more of these events in future planning?

'Broadside' was built by Peter Sutherland and myself during the winter of 1975/76 and it has proved a competitive design, being powered by Don Howarth and George Copeman modified Cubs. My thanks to Mike Broadbent for the drawing – hence the composite name.

HARDWARE

ENGINE PANS: limited numbers from Jim Woodside, 15 Heathfield Road, Liverpool 15, Price £2.20.

ACCESSORIES: Fuel Stop, glass cloth, quickfill finger valves, wheels from North West Model Supplies, 5 The Harridge, Shawclough Road, Rochdale. Send sae.

PROPS: 5³/₄ x 7¹/₂in 1/2A Prop from Tribe Bros, 87 Spurrell Avenue, Bexley, Kent. Send sae.

ENGINES: John Oliver Engineering, 250 Ringwood Road, Ferndown, Dorset. Deposit with order.

TUNING: George Copeman, 15 Heol Cefn On, Lisvane, Cardiff, send an sae for details.

CONSTRUCTION

Begin with the engine pan, either from a casting or aluminium plate about 6mm thick. In either case, make sure that the engine face is flat by using a glass plate onto which 'wet and dry' paper is taped. Start with 120 grade, finish with 320. Lighten carefully. Tap 6BA for engine and 8BA for hold down to model.

Make up the tank as shown. I have always found the *Turtle* tank to give excellent engine runs without being sensitive to position. If you have the equipment, make up a fuel stop as drawn and solder to tank base. This Malcolm Ross design is reliable, light and compact. You could use a tube crusher on the style of *Sweeter* FAI model (*Aeromodeller* June 1976).

Construct the under carriage box and leg. The amount of swing gives bounce-free fast landings. Further details can be found p.586 October 76 *Aeromodeller*.

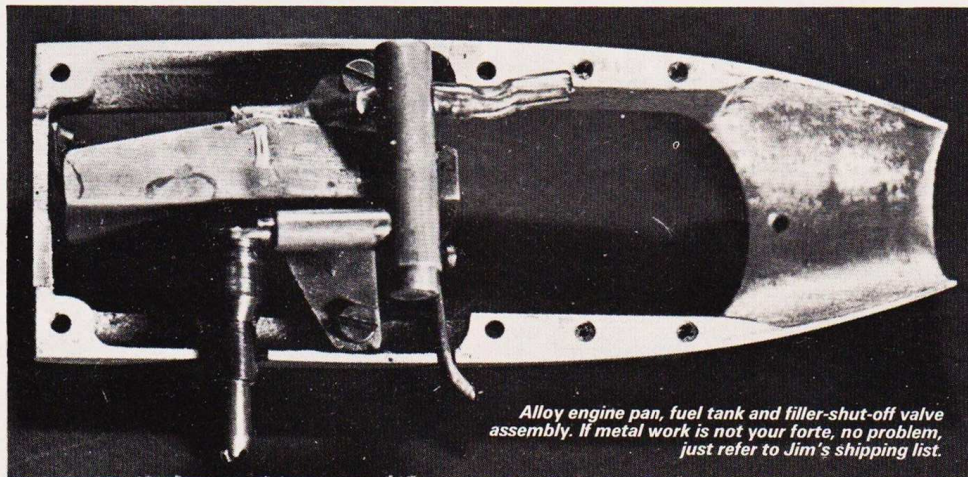
Finally, make the circular bellcrank and the elevator horn. Use silver solder wherever possible and certainly on the elevator. The use of hard solder and brass

by
**Jim
Woodside**

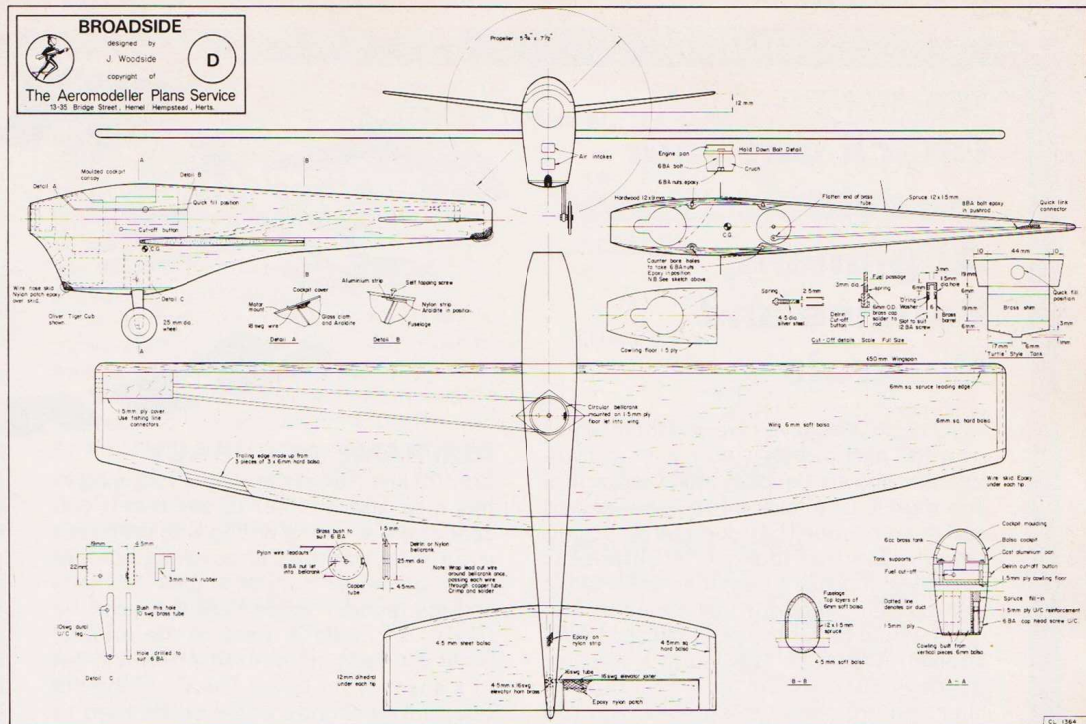
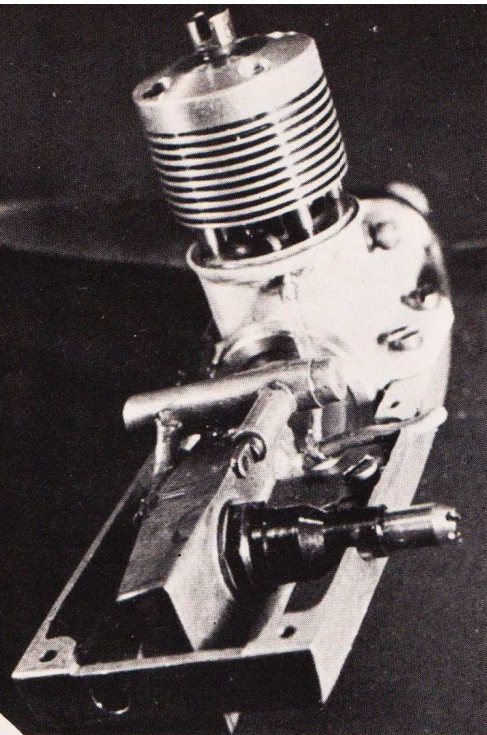
seems the permanent answer to tank leaks and general failures. You now have a kit of hardware bits. Do not be afraid to change any of the parts to suit your own preferences and experience.

WING

Choose a medium to light straight grained 6 x 100mm sheet of balsa and cut out the basic outline. Note this is 12mm less than the full span. Cut the hardwood leading edge to full span. Try to find a piece with even and horizontal grain. Take three lengths of 3 x 6mm hard balsa, cut to length for trailing edge. Now, using PVA glue, start to glue up the wing blank. Put a film of glue on leading edge with grain horizontal, and a film of glue on front edge of balsa blank, then bring both together remembering that hardwood leading edge overhangs by 6mm each tip, working quickly make a sandwich of the three 3 x 6mm trailing edges. Curve them around the edge of the wing blank and tape the whole thing with sellotape. Leave to dry. Cut out hole for bellcrank and then a wedge in the inboard wing for the lead-outs – see 'Classic Clarkson Quickies' in the Control Line *Aeromodeller* Special. Fit the lead out tubes and glue this back in place, leaving the centre section square, carve and sand wing to a symmetrical section. Add wing tips. Cut through channels near wing tip for line connectors – the link from fishing swivels are ideal. Let in a



Alloy engine pan, fuel tank and filler-shut-off valve assembly. If metal work is not your forte, no problem, just refer to Jim's shipping list.



Above: *Oliver Cub* installed in pan showing exhaust primer pipe running from overflow T junction through circular flange on crankcase. Right top: Inside of engine cowling shows venturi intake, shut-off reset button and pan fixing holes. Middle: Air inlet and exit positions in cowl. Bottom: Latest modifications include extra cooling slots cut into pan and cowling at nose and to rear of canopy.

Full size copies of this 1/16th scale reproduction are available as plan CL11364 price £1.10 plus 20p postage. Export orders obtainable from appointed agents price £2.50 plus 25p postage (\$4.40) or direct by post (add 50% to order value for air mail) from Plans Service, PO Box 35, Bridge Street, Hemel Hempstead, Herts, HP1 1EE.

0.8mm ply cover. Let in 2mm ply bellcrank mount. If you are experienced enough, you can taper the wing to 3mm at the tips.

TAIL

Cut blank in 4.5mm medium balsa, add leading edges and tips. Sand to section, again leaving centre section square. Cut out elevator and clearance for horn and joiner. Now score centre line with razor saw and lift one tip by 25mm and tack with rapid epoxy. Later reinforce with cloth and glue. Fit and hinge elevator.

FUSELAGE

Bolt two strips of hardwood to pan. Fill in nose section with block. Carve to shape. Add 1.5 x 12mm spruce strips to complete crutch. Add cowling floor in 1.5mm ply. Using soft sheet make up bottom of model. Carve air inlets and exhaust duct. Note venturi has separate intake. Let in undercarriage box, using epoxy glue. Reinforce with glass cloth.

With pan in place, tack glue top sheeting in place and sand to shape. At this stage mould the cockpit by pulling heated celluloid over the model. Wear gloves for this. Cut free the canopy. Add ply faces, hollow and fit cockpit.

ASSEMBLY

Split fuselage into crutch, top and bottom blocks. Using epoxy glue wing and tail to crutch, ensuring that all is square. Fit control system and check for free movement. Do not forget to attach a piece of cable to the rear end of the push rod to be used to trigger the fuel stop on down elevator. Glue on bottom block. Check clearances around cylinder head, engine lugs etc.

Add top block making sure controls stay free. Fit tank and cut clearances for filler valves etc. Set fuel stop to operate on 10° down elevator.

FINISH

The original was tissue covered. Humbrol matt black was used to paint the fuselage with Tufkote as fuel proofer. However, you may like to try lightweight glass cloth. K&B and Humbrol epoxy paints or Tufkote are all excellent resins. Simply lay an appropriately trimmed piece of cloth over the model and paint on. Rub off ragged edges with 'wet and dry' when cured. Really easy with fuel proofing built in.

FLYING

Use a close spaced handle, lines 50mm apart. Single strand lines on the Red Keil Kraft card are the right gauge but lightweight stranded cable will suffice for practice. Balance on or near the leading edge.

The fuel I have used for the last year has been Castrol M 20%, Ether 35%, Paraffin 45% and nitrate 1.5% added. I find this gives better warm up characteristics and cool engine runs.

Props have usually been thinned and trimmed FAI, usually those damaged on windy days! About 5½in seems right on diameter. Pitch is around 7½in. Thin the hub to ¼in and taper blades to suit. 40 laps is not too hard to obtain – remember this saves a stop in a final if not in the heats.

There are no real secrets in racing, nor are 'super' engines needed. Reliable equipment and good teamwork is more important. Read (re-read) Rob Metkemeijer's article of October 1973. See you at the circle.

