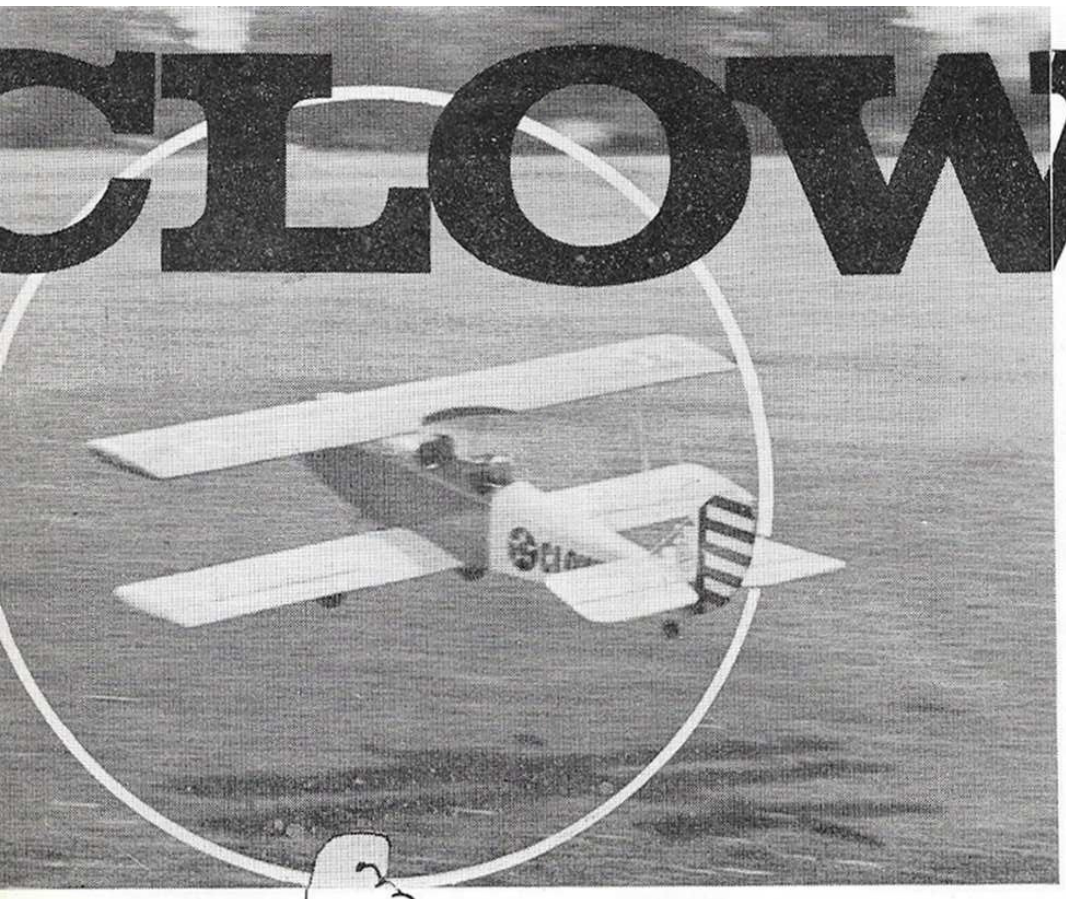
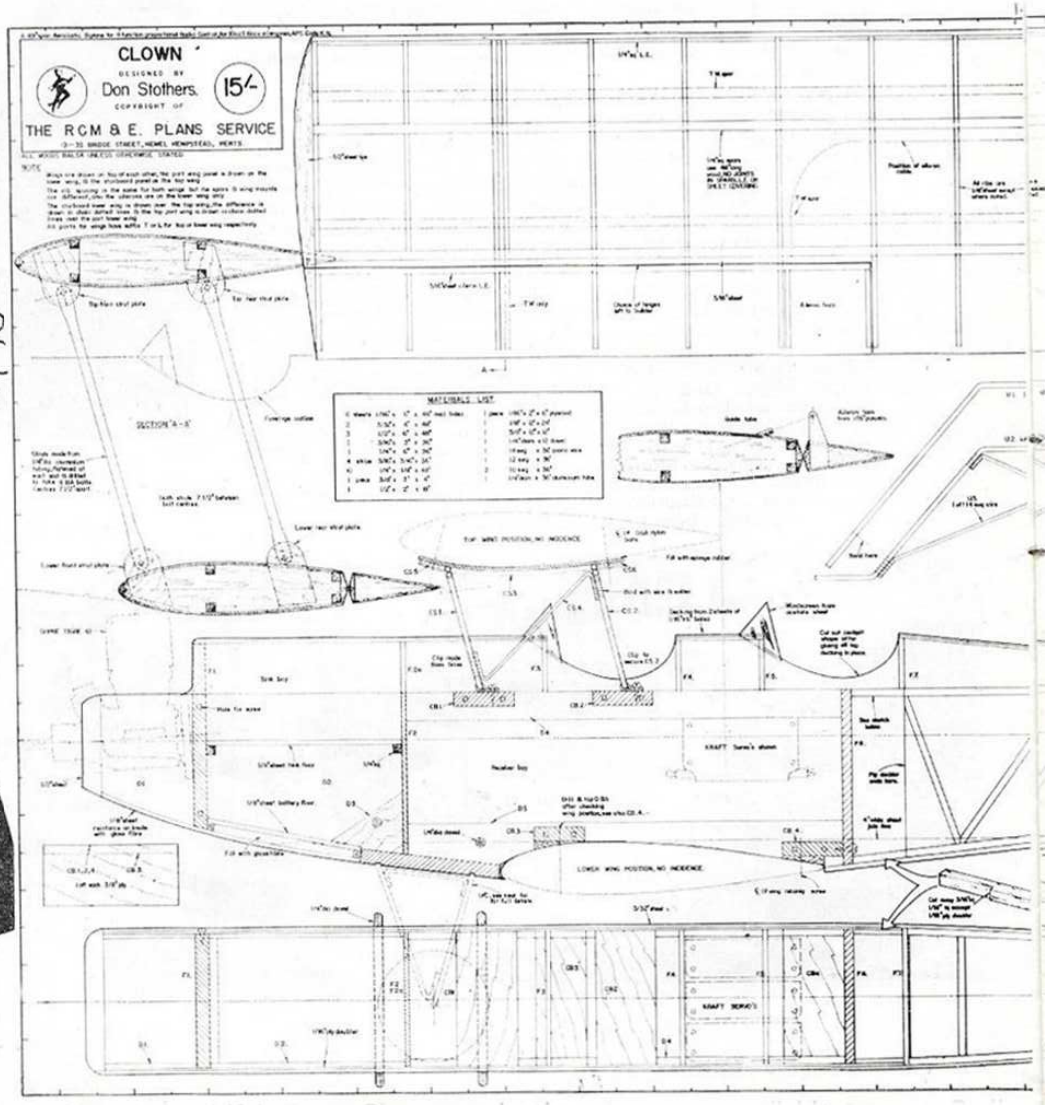
CLOWN



BY DON STOTHERS



49 in. span multi bipe for sport R/C

I'M terrified of beautiful scale models (all that time involved, all the calm summer evenings spent at the building board, instead of glo-fuel fumes out at the flying field!). Yet, being a biplane lover, I wanted a robust BARON BASHER and so the Clown Mk 1 was born.

I drew plans out after my *Fokker D7* bit the concrete at TERN HILL and splattered my beloved *Fox* 59 into it's basic molecules.

There was the plan, and that's how it stayed until a week before our annual New Forest jaunt last July.

Then suddenly I got the urge, and spent a week's spare time cutting ribs, bending wire and generally making myself a prefab kit.

Away we went on our holidays, caravan in tow, loaded with cement, dope, portable drill and everything else we owned.

Once settled in the New Forest (conveniently near Beaulieu Airfield of course) out came all the bits, and I got badly sunburnt putting it all together in four days, which included chasing away inquisitive ponies and swimming etc.

I had everything I needed except a 12v iron for Mono-Kote! So I did it the hard way, all clear dope and sticky enamel, which the flies loved!

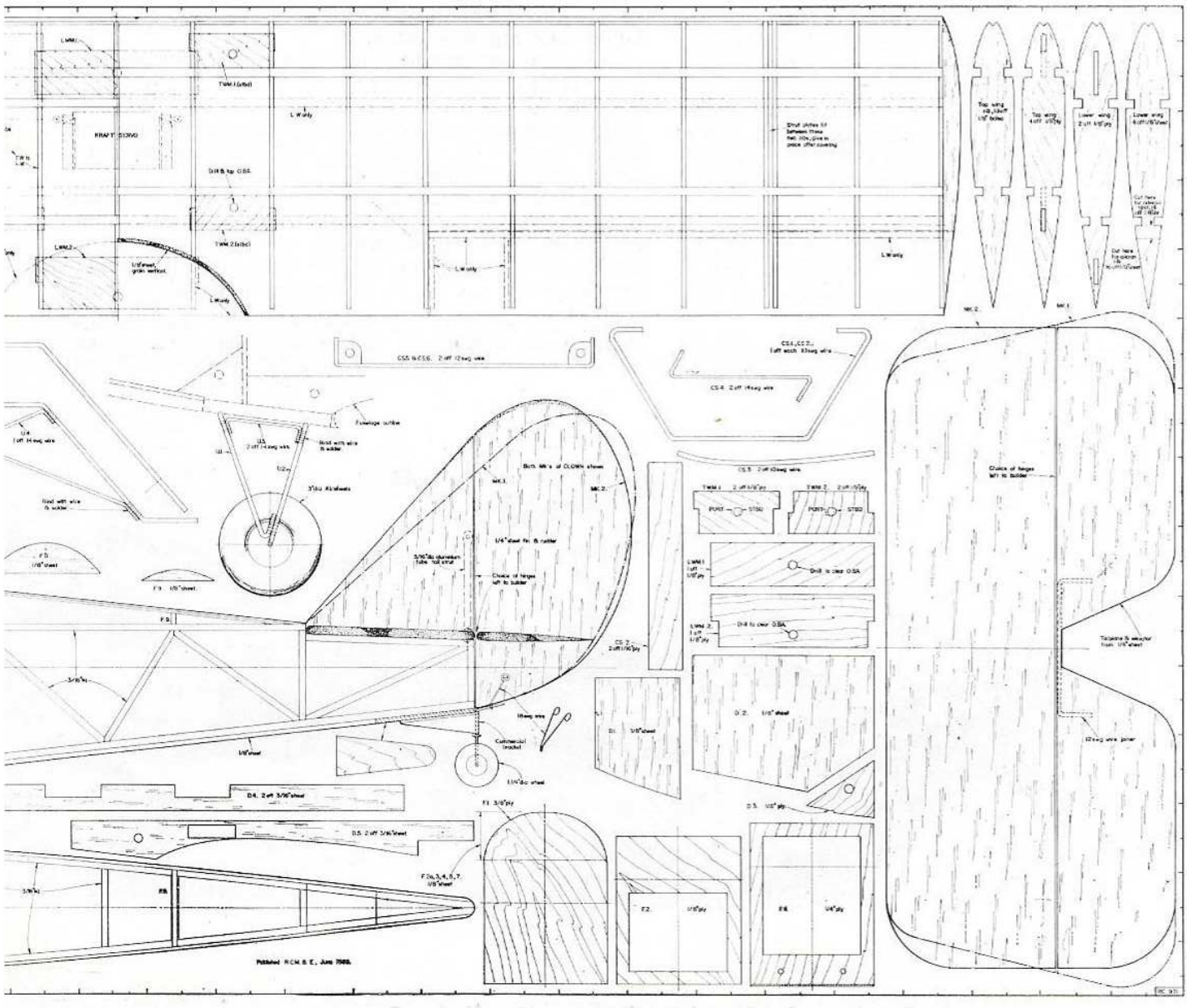
Up to the Airfield on the Friday evening (not a breath of wind) and the ancient Super Tigre 56 had it in the air after only 25 ft take-off run. I only dared two flights that night but flew it every evening the next week (I had to waste the days on silly things like shopping, fishing and sunbathing etc.). Altogether the best holiday I've ever had!

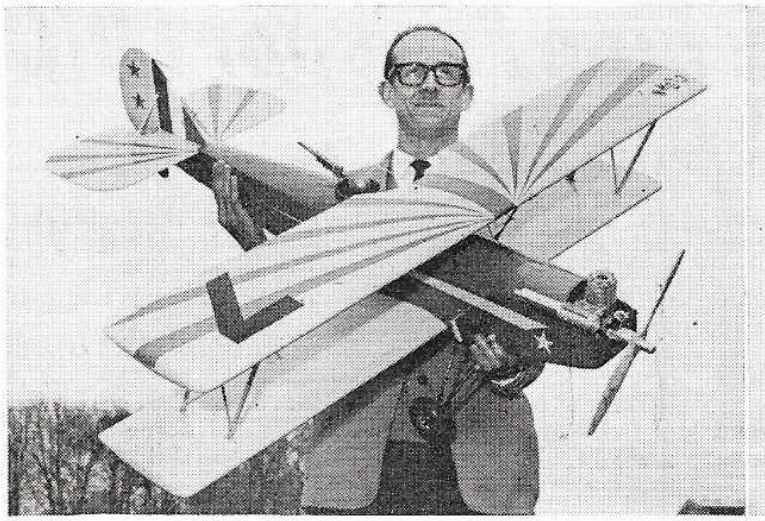
Incidentally this first model used *Orbit* 3+1 with coupled aileron/rudder. Anyhow, if you too like a boisterous biplane and have a lot of nerve, grab a bundle of balsa and let's go.

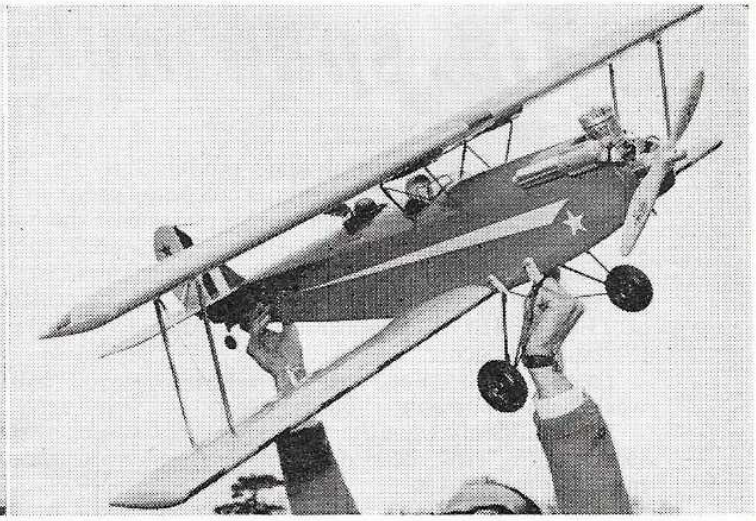
If you're a carpenter by trade, this will suit you, lots of woodscrews and ply!

Cut an $\frac{1}{8}$ in. ply rib template first, to use when cutting the fuselage sides and as a pattern to bend the birdcage to. Do all the wire bending in one go. Note that there are two of everything in the cabane detail. Use 48 in. sheets for the sides and employ a rib template to cut the bottom wing location. Use PVA to fix 1/16 in ply doublers and leave overnight to dry.

Next, build on 3/16 in. square framework, cement in D1, D2, D3, D4 and D5. Drill dowel holes, slide fit for $\frac{1}{4}$ in dowels. Now prepare F1, drilling for motor mount, and install nuts at rear, soldered to tinplate







Above left: designer Don Stothers displays his Mk 2 Clown, resplendent in red and yellow MonoKote. Above: view from front showing motor, Super Tigre silencer and cockpit layout.

Cut F6, CB2, CB3, CB4 & UM.

Tack or screw through sides to F1 etc., chamfering sides to fit together at the tail post. Try cabane strut assembly for fit.

When installed, the wing rib template (told you it would be useful) should be at ZERO incidence, easily corrected by a washer or two between the tin clips and the ply. When you're happy that the incidence is right, blob fibreglass over the wire, screws and all so that nothing can come adrift later. Use PVA on all ply parts and hammer and nails if you like!

Note: Fill the bottom of the cockpits in so you can fly in the rain without getting your costly servos wet!

Fill in under bottom wing mounts (CB3, CB4) with soft balsa. Fit tank now, plugging vents to keep the dust out. Make a battery compartment to suit your particular DEAC pack, and Epoxy glue your throttle cable guide in place. Cement on the undercarriage mount. Cover fuselage bottom in $\frac{1}{8}$ in sheet crossgrained, add $\frac{1}{2}$ in soft sheet on nose. Turtleback formers go on next, F2a, F3, F4, F5, F6, F7, F8, F9.

If you don't like planking, cut a thin cardboard pattern to cover the top of the fuselage to the back of the rear cockpit and cover the cardboard in soft 3/32 in (PVA) and glue the whole mess on using masking tape to hold it down (much better than pins).

Note the POSITIVE incidence on the tailplane and the safety struts, you'll be glad of these if you do a cartwheel landing, the tailplane and rudder can get knocked off clean with no other damage.

Make tail and rudder of $\frac{1}{4}$ in medium balsa and hinge, but don't fit till the fuselage is covered and finished.

Use all 48 in timber for the wing. Note, that the wings are built flat, with no dihedral.

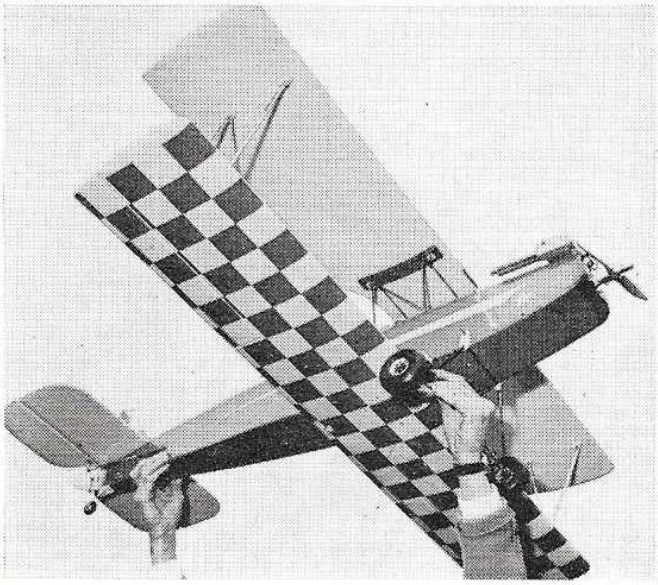
Join 4 in wide sheets of soft 1/16 in to cover all surfaces and sand smooth before using. Note that ailerons are cut out when bottom wing is completed, but don't forget to add the cables or bellcranks for the control linkage before the top is sheeted.

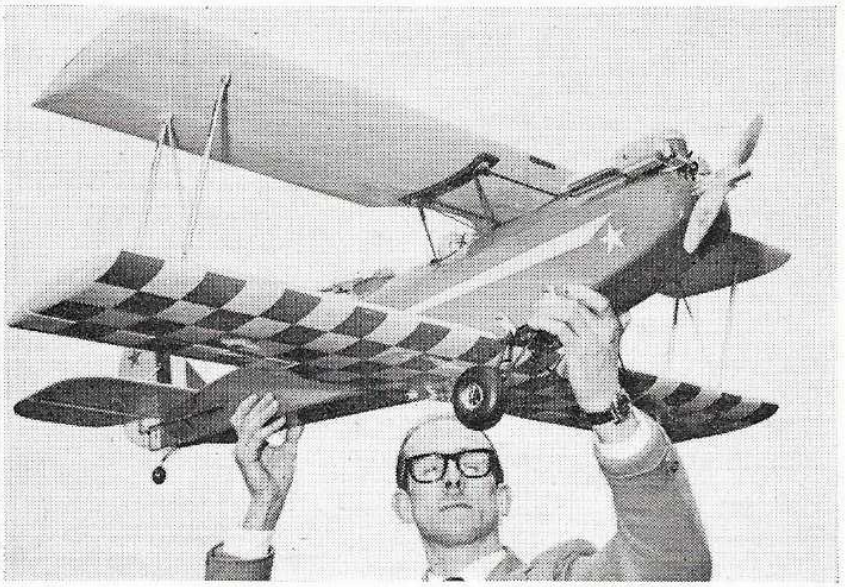
Drill through cabane into top wing mounts and tap 0BA. Drill through bottom wing and into CB3, CB4, and tap 0BA.

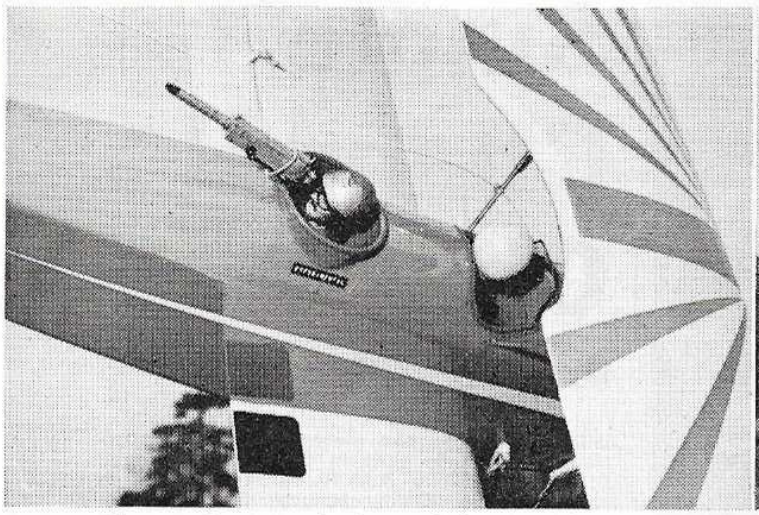
If the screwed together assembly looks terrifying, don't worry, it pays off in strength and you'll never 'lose a wing', no matter how many G's you pull.

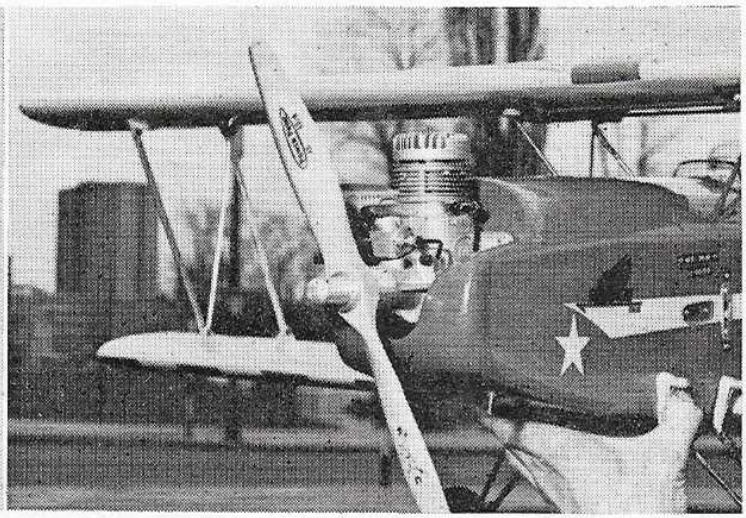
The wooden threads are immensely strong, especially if you daub nylon screws with cement and screw them into each threaded hole, the cement will form a coat on the thread without sticking to the screw. All my models use this method, I like it! The only use for rubber bands

Below: two views of the underside, emphasising constant chord wings. Ailerons on bottom wing only. Note checkerboard finish—good example of what can be done with those iron-on covering materials.









Above: close-up of the cockpit area showing pilot and gunner. Gunner is a little bit out of place perhaps in a model with such a colour scheme but he adds something to the appearance anyway. Right: close-up of nose section showing motor mounting.

is on the U/C, which needs a bit of give, especially if your landings are like mine!

After painting, Evo-Stick strips of sponge rubber on top of the cabane and under the fuselage. Interplane struts are alumn. tube, slightly squashed to an oval section. The only difficulty if you intend to leave the aircraft in one piece, you'll need a charging socket to plug into. Ply strut mounts are slotted in after wings are completely finished.

3 Kraft servos fit side by side easily across fuselage, I used nylon tubes as pushrods running in bigger nylon tubes, very simple to make, no soldering here. There's plenty of room for any propo. outfit but be sure to distribute the weight well forward, it will fly nose heavy, but tail heavy? WHOOPS!

Don't forget the downthrust which is 3° right, 3° down. Elevator throw set-up is, $\frac{1}{2}$ in up and down, 1 in right and left rudder and about $\frac{1}{2}$ in up and down aileron.

Use as much power as you can. Clown Mk 1 had a Super Tigre 56. The second one has a Super Tigre G60 and I'm waiting for a .71 to come in. (You'd better take that MAP Insurance transfer off then Don – *Ed.*).

Below: rear ¾ view showing sun-ray pattern on top of wing and tail. Below right: close-up showing detail of cabane struts and undercarriage legs. Note mounting.

The Mk 2 model uses Kraft 4 which makes flying much easier, I don't have to let go of the steering stick to throttle up or down. As to flying the brute, well, if you can fly a multi model you can fly the Clown, but here are a few tips anyway.

Hold a little UP as she moves away or the positive incidence on the tailplane will lift the back end too soon, once rudder steering speed is reached you can relax on the elevator and enjoy the sight of a tail up tearaway and a lift off when ready. The model shows no vices and flies hands off either side up when trimmed correctly.

The plane should be trimmed to fly level with full power and yet still be okay when the motor is shut off. If it dives when the motor is off you need MORE down-thrust and a little elevator UP trim, if it turns to the right on the glide more RIGHT thrust is indicated and a little left rudder trim.

Alter trims progressively until you can fly hands off at top speed and idle.

Shallow beat ups and a roll away to the cloud base are impressive, as are low snap rolls (all of everything, full up, full rudder, and full aileron, recovery is just by letting go of all controls, to leave the hands free to pray of course).

Three point landings are a breeze, but remember to hold UP while taxi-ing round or the tail will lift. (The wheels are near the balance point to stop ground loops).

Hope you have as much fun as I've had, get a buddy to build one with Maltese crosses and install an Action Man machine gun in the rear cockpit! Enjoy yourselves . . .