

# Firemen



## Aeroraces

**Well, it's the same old thing every weekend ... know what I mean? There we are, we've shot the breeze for an hour, done all the aeras known to man - twice, done two sessions of touch and goes, tail chased the Chairman's Quickfly..... even beat up the Clubhouse and buzzed the Pits! (Got severe earache from the Safety Officer for that) .....**But now what's there to do?

*The Firemen do fly and fly very well.*

you started. Three distinctive but quite different outlines, all simple to build and all sharing the same basic airframe to keep things competitive.

THE FIREMEN are happy to do any aerobatics you can do but maybe somewhat faster than you're used to doing them!

In the end racing comes down to speed, and speed is dependent on the balance between thrust and drag; so to keep the competition close and exciting, The Rules are written to regulate these critical elements. Thrust we control by an engine and propeller limitation. As for Drag ....well, for simplicity we can divide this into the effects of three major components. Wing, Fuselage plus tail feathers, and any fixed U/C. Wings are a common 41" net span, they all have the same low drag section and almost exactly the same surface area. Fuselages all have similar cross

### What about some sort of Race then?'

'Na, takes too much organisation, anyway, round and round's just boring'.

'What if we simplify everything, so it only needs two or three people say, and build in a few simple aeras along the way, as part of the race ..... sort of aerobatics and pylon racing, all rolled into one ..... that should spice things up a bit', eh?'

'Na, the Chequebook Modellers will win it every time, all posh engines and moulded kits!'

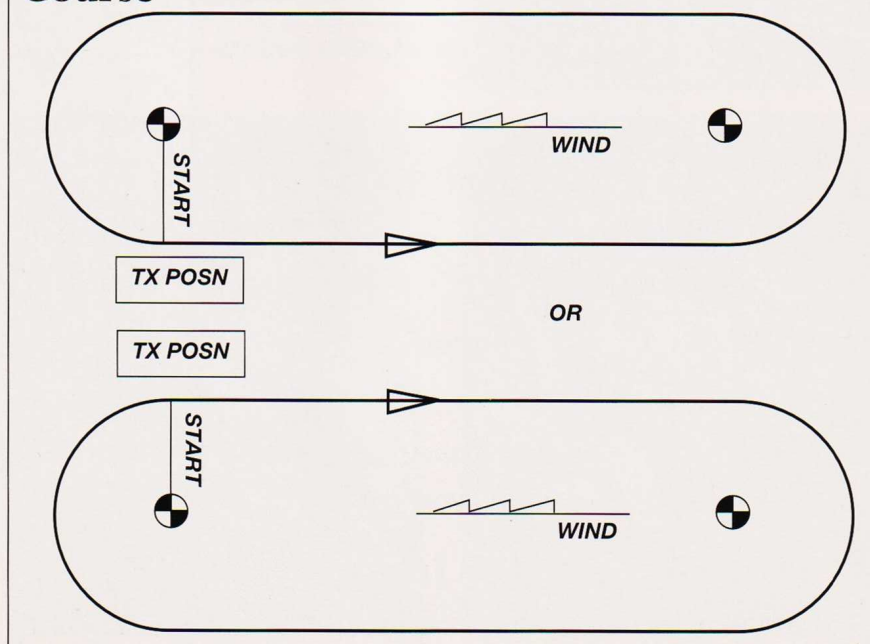
'That's OK, we can fix them with 'THE RULES', no hand built motor and no glass airframes!'

'Well just don't go and make it too complicated, or it'll get boring again!'

'OK, let's see just how simple we can make it.....'

So, here are THE FIREMEN, three smart aeroplanes designed to get

### Course



## Well how do we run these AERORACES then?'

'Three possible formats, depends on how many models fly in each race and time available': -

- |   |  |
|---|--|
| 1 Run against the Clock<br>(sequence as no. of A/C) | Fly one at a time and use a stopwatch. Time the full 5 lap sequence for each model, fastest time wins.                                 |
| 2 Race as a Fly off<br>(up to eight race sequence)  | Each race flown with a competing pair in heats, a win gets you 1 point. Two highest then race for 1st/2nd and two lowest race for 3rd. |
| 3 The full Monty!<br>(three race sequence)          | The best, all colours together, last man drops out each race, the last race ends up between the two fastest men.                       |



The 'racy' profile of Fireman No 1.

sectional areas, the tail ends all have the same wetted area and the wheels come off for racing anyway!

Incidentally, if you want to design your own Aeroracer, just stay inside the rules, use some common sense and it will be competitive I assure you! Have a go, you'll be surprised.

Now, for all those expecting a blow-by-blow account of how to build THE FIREMEN ....Tough! ..... If you've been modelling long enough to be playing this game, then you didn't start yesterday. So just figure it all out from the Plan, it's not difficult. All you're going to get from me are some points to watch and a reminder of the old adage 'build in all the lightness as you can'.

### Wing

After removing strips of veneer for the 1/4" U/C plates, tack 80 grade sandpaper to one plate and use this to sand out all the slots before gluing in place.

Utilise the wing-blank cut-offs, one propped up for dihedral, to maintain an accurate alignment when joining the wings.

Bandage the wing join with a 2" strip of 50-100 gsm fibreglass and resin after fitting the T.E. and torque rods.

### Fuselage

Don't forget to trim the nose of the right-hand side to accommodate the side thrust.

Build the lower fuselage upside down on the board with F1 hanging over the edge. To keep everything dead

## THE RULES

### Technical Rules ...As few as possible!

#### Power:

- |           |   |
|-----------|---|
| Engines   | Any mass produced 0.25 cu.in. motor (unmodified) with throttle.     |
| Fuel      | Any mass produced fuel with nitro content of 5% or less.            |
| Propeller | Any mass produced prop with 2 or more blades (unmodified).          |
| Silencer  | Expansion or mini / quiet pipes allowed; must pass Club noise test. |

#### Model:

- |            |   |
|------------|---|
| Style      | Scale-ish with cowled engine and clear canopy (pilots head min 1" dia)    |
| Wing       | Must use FIREMEN standard no.1, 2 or 3 veneered foam wing.                |
| Fuselage   | Must have minimum x-sect. measurement of W2.5" x H4.75" at cockpit        |
|            | Traditional structure, glassfibre restricted to local area reinforcement. |
| Radio      | Minimum throt./ail./elev. with alternate crystals available.              |
| Left wing  | Finished top and bottom in 'Dayglo' orange/yellow/pink or green.          |
| Right wing | Mainly white overall with black 4" two digit 11 -99 numeral.              |

#### Team:

- |            |   |
|------------|---|
| Pilot      | BMFA 'B,' or SAA 'Silver' required or dispensation from Club CFI. |
| Assistants | One or more, to act as starter/launcher and observer.             |

#### Officials:

- |             |  |
|-------------|--|
| Base Judge  | Senior judge, race starter and base pylon 'cut' caller.                  |
| Pylon Judge | Upwind pylon judge and 'cut' caller.                                     |
| Flag man    | Responds to pylon judge, raises appropriate flag when a 'cut' is called. |

#### Equipment:

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|--------|---|
| Pylons | Made from a 'wigwam' of three 6' canes with a 'chequer board' sleeve. |
| Flags  | Two foot squares each covered with a dayglo colour O/Y/P or G.        |

#### Course:

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|---------|---|
| Layout  | Set out on the far side of the runway, the Base Pylon placed opposite the Pilots Tx position and Upwind Pylon placed 100 - 150m upwind. |
| Start   | Launchers spaced 4m apart on line between Tx position and Base Pylon  |
| Circuit | Direction as appropriate for field and runway.  |
| Finish  | Line joining Tx position to Base Pylon.   |

#### Race:

- |          |  |
|----------|--|
| Sequence | Up to 4 main races, last man eliminated in each. More than one aircraft of same colour will require preliminary fly off. |
| Format   | SIGNAL Start engine and prepare to launch within 60 secs   |
|          | COUNT / SIGNAL Hand launch.  |
|          | Outbound leg 1. Straight flight then round pylon and return.   |
|          | Outbound leg 2. Roll inverted for leg, upright round pylon, return.  |
|          | Outbound leg 3. Two axial rolls then upright round pylon, return.  |
|          | Outbound leg 5. Straight flight then round pylon and return.   |
|          | Finish SIGNAL First to round Base Pylon and cross Finish Line.   |

#### Penalties:

- |                    |  |
|--------------------|--|
| Upwind Pylon 'cut' | Return round same pylon before continuing. |
| Base Pylon 'cut'   | No excuses !.....Disqualification.         |
| Dangerous Flying   | No excuses ever !.....Disqualification.    |

NO OTHER RULES SHALL APPLY



*Not quite in accordance with the rules but none the less an interesting colour scheme for a Fireman.*

there for strength and to reduce interference drag - in fact a full Spitfire type fairing would be even better, but watch the weight!

## Finishing

This is where the race can be won or lost! Not at all whether you can produce a superb 'mirror' finish but more a case of 'how little weight can I add'. The underside of the nose and wing root must be glassed with 100gsm cloth and resin, just for protection, but if you put the resin on with a Phonecard, you can also scrape all the excess off again!

Radio installation is flexible, there is room for all standard servos, but obviously minis would be lighter. Use ball and ring type clevis's on all flying controls and select them for as little play as possible. Just move things around to achieve a C.G. position approx. 10mm ahead of that shown. (no farther back - at least not for the first flight). By all means experiment later with the balance point and the control throws, all in that quest for speed.

## FLYING

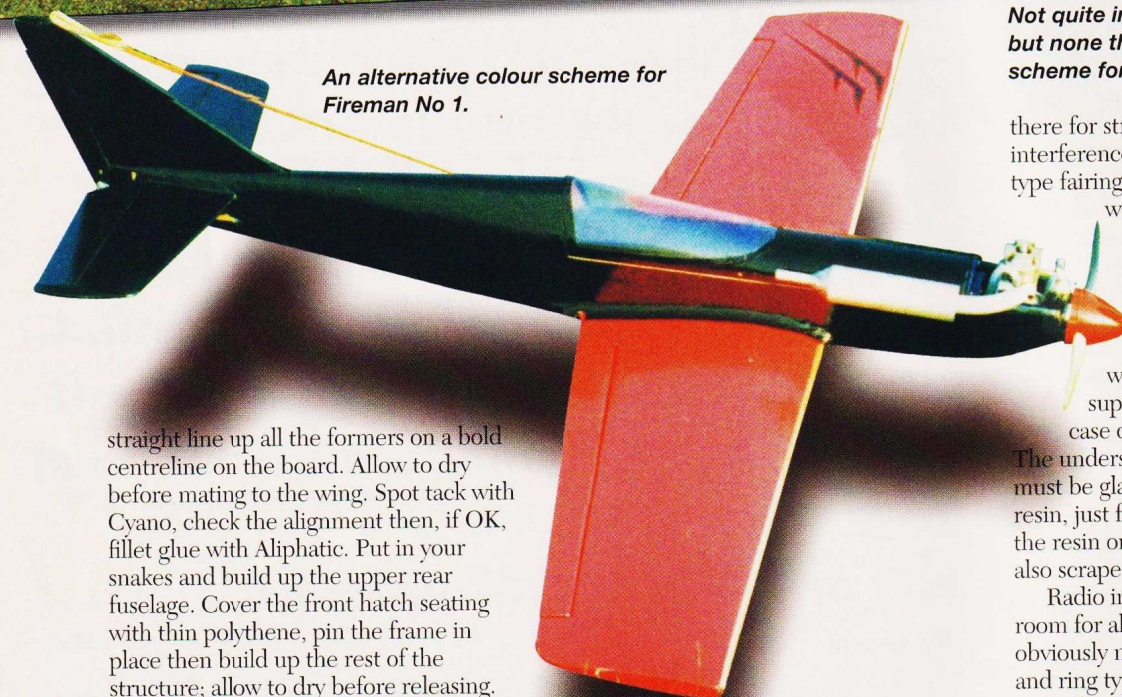
THE FIREMEN have no real vices, so speed is all up to your technique. If there's a wind down the strip, maximise ground speed by staying low into wind then going higher downwind. Generally speaking, don't pull too much 'G' in the turns and try not to use big control inputs or all you do is scrub off speed.

Well there you are kiddies, can't get any simpler than this, get whittling.

Now we'll sort out the TOP DOGS from the plain old HOT DOGS!!!

Peter Button

*An alternative colour scheme for Fireman No 1.*



straight line up all the formers on a bold centreline on the board. Allow to dry before mating to the wing. Spot tack with Cyano, check the alignment then, if OK, fillet glue with Aliphatic. Put in your snakes and build up the upper rear fuselage. Cover the front hatch seating with thin polythene, pin the frame in place then build up the rest of the structure; allow to dry before releasing. Line the front hatch from F1 - F4 with 50gsm glass cloth or tissue, it will survive the constant handling better that way.

Don't forget the wing/fus. fairing, it's

*A not to slow fly past!*

