JULY 1990 £1.95

AERO MODELLER

SUNSHINE SPECIAL

Our super Designs Day at Old Warden

PERCY'S PROGRESS

A Vintage Wakefield revisited

TWO FOR CO_2

Rumpler C IV and mini-Pinocchio plans

ISSN 0001-9232
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JULY 1990
Volume 55
Issue 654

ISSN 001-9232

AERO MODELLER

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Cover: Just one of the many ASP subjects at our Model Designs Day at Old Warden on 29th April – Jonathan Howes chose the famous Bleriot XI for rubber power, added a gentle modifcation or two to Jim Greenland's original design, and presented as pretty a series of circuits as you could wish to see. Our report begins on p.384. Inset: John Walden's mini-Pinocchio for CO_2 is a real charmer. Build yours from the feature on p.383.

ASP
Argus Specialist Publications

Argus House, Boundary Way,
Hemel Hempstead, Herts HP2 7ST

ABC
MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS

AN ARGUS SPECIALIST PUBLICATION

Advertisement Offices: Argus Specialist Publications, Argus House, Boundary Way, Hemel Hempstead, Herts HP2 7ST. Tel: 0442 66551.

Postmaster: Send address changes to Aeromodeller, c/o Mercury Airfreight International Ltd Inc, 2323 Randolph Avenue, Avenel, NJ 07001, USA.

Subscriptions: Direct subscription rate: Home £23.40. Europe £28.20. Middle East £28.40. Far East 330.20. Rest of the World £28.70 or US $50.00. Airmail rates upon application from Infonet Ltd., 5 Riverpark Estate, Billet Lane, Berkhamsted Herts HP4 1HL. Tel: 0442 876661/4.

Overseas Availability: Second class postage paid at Rahway N.J. USA. Postmaster send address corrections to Aeromodeller, c/o Mercury Airfreight International Ltd Inc, 10B Englehard Ave, Avenel, NJ07001. Distribution to news stand sales by Eastern News Distributors Inc, 1130 Cleveland Road, Sandusky, Ohio 44870. Distribution to North American hobby and craft stores, museums and bookshops by Bill Dean Books Ltd., 166-41 Powells Cove Blvd. Post Office Box 69 Whitestone NY 11357, USA. Tel: 1(212) 767-6632. USA Subscription agent Joseph D Daileda, Wise Owl Worldwide Publications, 4314 West 238th Street, Torrance CA 90505.

HANGAR DOORS

Over the hangars at Manston drifts a DB Models Hurricane on finals... Malcolm Martin and his team plan a Channel crossing in July to commemorate the Battle of Britain – and to benefit the RAF Benevolent Fund.

Trials and Tribulations

The doubling-up of FAI events as a F/F Team Trials at the Easter meeting, subsequenl curtailment thereof (on the Saturday), and ratification of the Trials as complete, despite the fact that only nine of the scheduled fourteen flights had been acheived, has led to recriminations and fear of repercussions. Such questions as: when is a Team deemed complete; what should be the status of a Trials anyway; at what state should rules be altered, and on what grounds (and by whom), are all ready to be aired.

Rather than rush into debate, we have chosen to seek opinion by those involved (some of whom have confimed their views ahead of request); next month we will present the results of our invitations.

One message is clear. There is no substitute for an awareness of the rulebook – by everyone involved in competition flying.

Schleis of the action

As followers of the full-size aviation scene will be aware, the Oberschleisheim Airport building in Bavaria has been the subject of considerable restoration, largely thanks to the efforts of Vintage aviation and modelling enthusiast Gerhard Everwyn. During the course of work activities in Germany, fellow modeller Pat Mardell has been able to report on progress at first hand. Apparently the Deutches Museum intends to build two large storage warehouses on the site – completeley out of character, not only with the Airport fabric but the nearby Royal Bavarian Palaces and gardens. This would also mean the sacrifice of part of the existing building, which dates from 1912, as part of a new corridor leading to these premises. Gerhard is not unknown for his persistent lobbying for causes, so we wish him well in his endeavours to keep this site unsullied by crass development.His ultimate aim is to create a home for aeromodelling memorabilia in conjunction with scale models of significant German aircraft. As part of this team, model flying meetings would be held on the airfield which is currently in low-key use for local flying clubs. More news to follow.

Hurri Hurri Hurri

Various events are scheduled to commemorate the Battle of Britain, fifty years distant by the autumn. Readers with full-size interests will already be aware of many ; here we must mention a most worthy aeromodelling equivalent. Malcolm Martin and his live-wire team intend to fly a DB Models Hurricane across the Channel from Gravelines to Manston in aid of the RAF Benevolent Fund. Control at ground level will be augmented by an airborne, helicopter team for the across-water bit. Special sponsorship reflects the authority of this project; we wish the team well and anticipate success on 13th July.

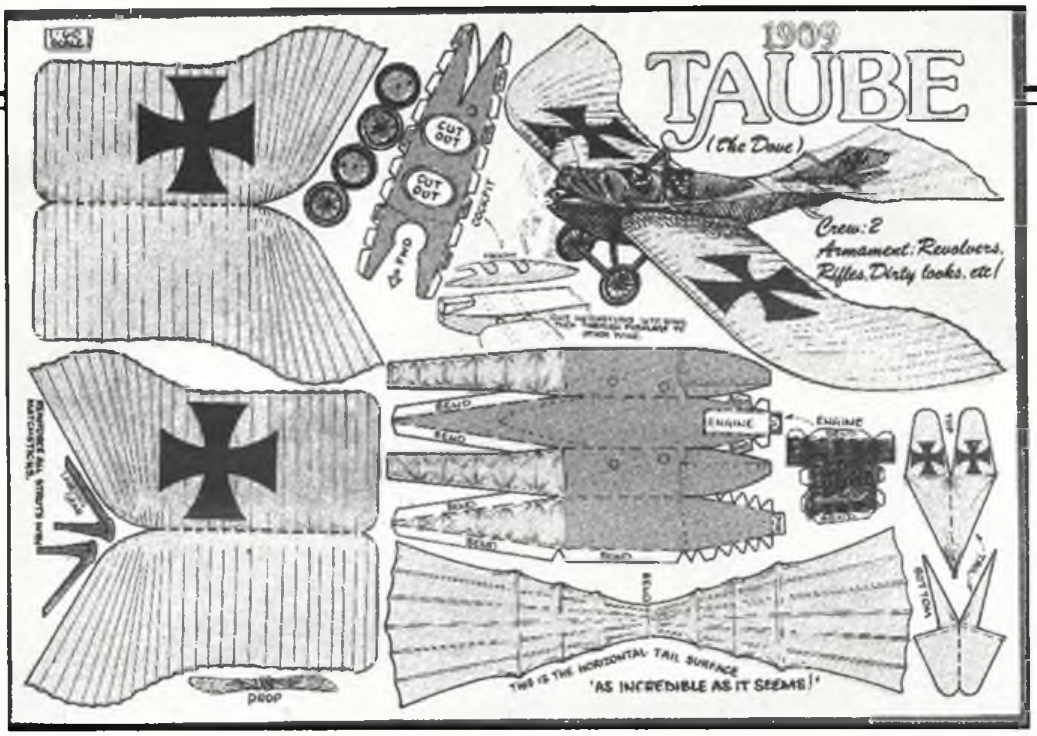
Just for U

Arch-Vintage C/L enthusiast Steve Betney reminds us that the Jim Walker designed Fireball, the model which many believe started the whole C/L scene, is fifty years old. To celebrate, the American Junior Aircraft Company, created by Jim in 1925, is producing a replica kit which should be available by the time you read this. Following advertisements in the US model press, demand was unexpectedly strong, causing a temporary hiatus in supply; but all should be on course now.

Two versions of the Fireball are on offer – a full kit for collectors and a 'short' kit for builders and fliers which, although less expensive, will nevertheless include fully carved and shaped fuselage halves, wing ribs, hardware and decals. 'Fireball' wheels are another possibility.

A-J Manufacturing hope to sell at least 500 collectors' kits. This target demands a price of

Left: Got £75 to spare? Incastec Windy digital anemometer is available from the manufacturers at 75-77 Christchurch Road, Ringwood, Hants BH24 1DH. Below: Restored airfield buildings at Oberschleisheim are the subject of current debate, as explained in text.



Thanks to Richard Hathaway for sending this 1:60 scale cut-out-and-fly Taube. Model demands one penny of noseweight and is twirled gently around by a cotton line attached to a wingtip.

$179.95. If twice that number are ordered, the price will reduce by twenty dollars. If less than 200 orders are received, the kit will not enter production, and deposits will be refunded. Interested? Contact A-J at PO Box 68132, Portland, Oregon 97268, USA. We look forward to seeing Steve's versions as a Fireball Trophy contender at our Vintage Weekend in August.

Of course, Jim Walker's diverse talents extended beyond C/L flying. A trio of 'classic' designs is also available – the Hornet rubber 'stick' model from the early 1930s, the 74 Fighter glider from 1948, and (most interesting to us) the 404 Interceptor, a 16.1/2in chuck glider featuring an innovative folding-wing mechanism, as shown in our diagram. Dating from 1939, the Interceptor was used during World War II as an aerial target for military machine gun practice. These designs are produced as a '3-pack' for $19.95 (postage extra). We've seen them, and they look good.

More Indoor Scale...

Another successful Indoor Nationals is but a pleasant memory (full report next month). Organiser Doug Sheppard reminds us that next on the agenda at the Alumwell Centre, Walsall, is the Indoor Scale Meeting on 28th October. Competitions will be for Peanut, Open Rubber, CO^2/Electric and Air Racing. Biplane Kit Scale and Jet Prototype flyoffs are further attractions. Entries accepted on the day. Doors open at 8.30, with a closing time of 5.30. Any questions? Contact Doug on 0272 687595.

...and extra events

Just too late for inclusion in What's On are the following contest details:

The Crookham Gala will be held on 5-6th August at Beaulieu Old Airfield, advises Ted Tyson of Crookham Contest Modellers. Mini events, run in rounds starting at 1pm, are scheduled for the Saturday, with Open Power, Open Rubber, Open Glider, All-in FAI and Slow Open Power starting at 9am on Sunday. Contact Ted on 0202 303748 for more details.

And from over the border comes news of the Scottish F/F Nationals. Venue is Newbigging, near Lanark, and the date is 11-12th August. The first day is occupied by F1A, F1B, F1C and a Junior Kit event, all starting at 11am; All-in mini will be run on Sunday from 9am to 1pm, accompanied by Open Rubber, Open Power, Open Glider and Vintage from 12-5pm. Jim Arnott has all the gen on 0383 419340.

The SE Gala – and a Dewsbury correction

Trevor Gray has confirmed the date of the BMFA SE Area F/F Gala on 15th July at Ashdown Forest. Open Rubber, Open Glider, 1/2A Power and Vintage will be contested from 10am. Contact: Martin Stagg on 0892 832612 for more news.

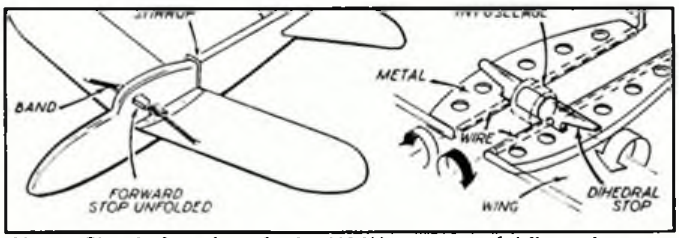
We must correct the information in What's On regarding the Class A and 1/2A Combat competitions hosted by the Wharfedale Club. Both events will take place at Dewsbury on 24th June. We repeat: this is now a combined event. Jeff Smith may be reached on 0532 663432 for more news.

Jack Jansen

A domestic accident on 5th May caused the death of Jack Jansen, who during his time of involvement with aeromodelling made an unforgettable mark in the world of F/F Scale thanks to his refreshingly unfettered outlook. Jack chose as his speciality the larger variety of model, happily pursuing a course already charted by such notables as P C Norman and Fred Longbon at Epsom Downs – his own preferred field. The 1970s was Jack's period of greatest oputput. His Dornier Do18 flying boat and bright red Bristol 77 (Aeromdeller covers subjects both, and neither an inch under five-foot wingspan)were snappily followd by a further selection of majestic aircraft including the Rohrbach Roland and Short Sarafand, each defying the prevailing rule that 'Scale' means 'Small and light'. Jack was not to be bounded by convention, and his enthusiasm was irresistible. Aeromodelling friends became used to a merry rap on the door – sometimes close to midnight – when news of the latest project just had to be shared. The same energy swept Jack through other channels – sailing, photography, music and, latterly and foremost, painting – which were to claim the majority of his interest; but one always half-expected further news of yet another giant F/F creation. There was always the chance. Our sympathies are with Dorothy and Liese.

Transfer attention

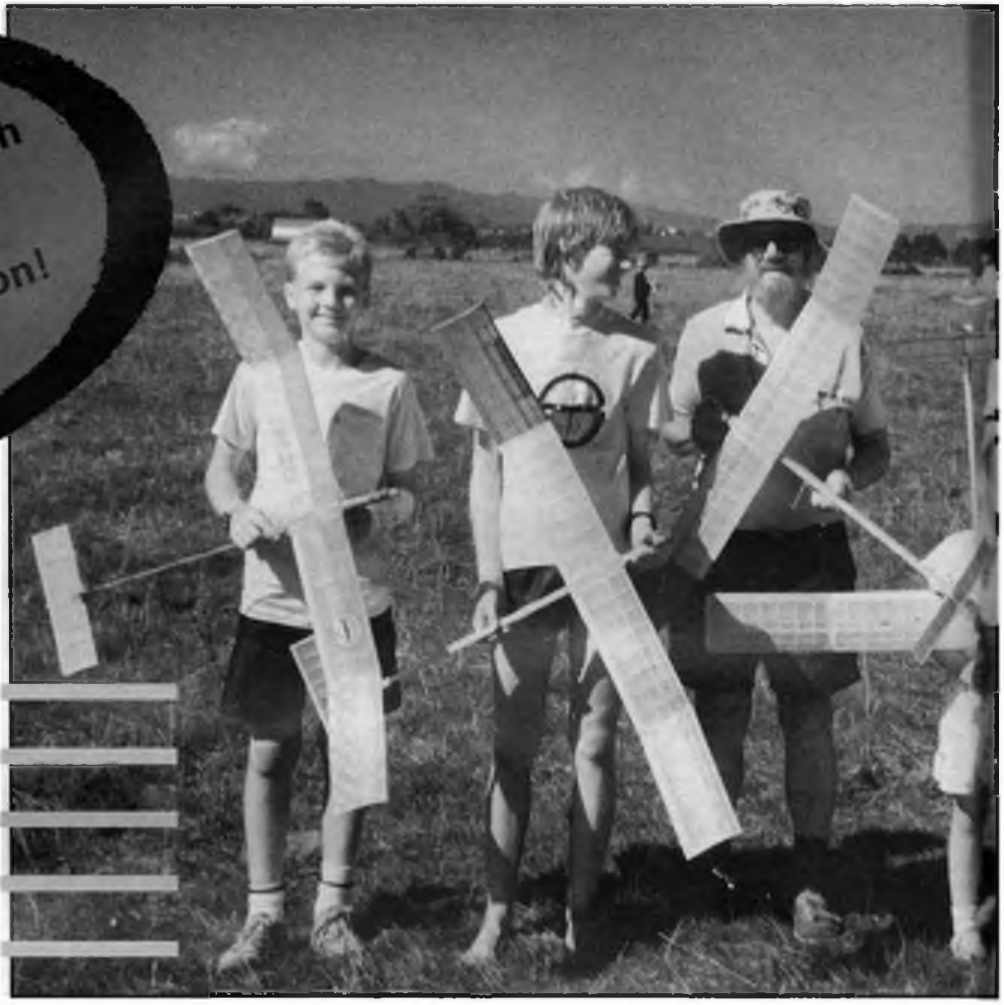
Mr J A Calloway writes that he has turned to Vintage – but needs NGA decals to add the finishing touch. These were freely available some years ago, but it's gone quiet since. Is there still a source? Let us know at Aeromodeller and we'll pass on the news.



Above: Classic American Junior '404' Interceptor folding-wing chuck glider designed by Jim Walker is still in production; 1990 will see the 50th Anniversary of U-control, or control line; A-J Company are to produce a special edition of Walker's Fireball to celebrate. Below: Al Backstrom loves the unorthodox; Westland-Hill Pterodactyl is his latest.

See you there!
Don't forget our Scale Weekend at Old Warden on 23-24th June. A great Scale Fun-Fly.

Stay tuned next month for trimming hints and details of our Autumn competition!



Got FFOXY – last month's full-size plan? Good! Here's Rod Lewis with all the building gen...

COME ON YO

PUBLICATION of this attractive A/1 glider in Aeromodeller will, it is hoped, have the same effect on Junior free-flight aeromodelling in the UK as it has in New Zealand, its country of origin. For in NZ we have managed to dramatically reverse the world-wide – at least in the West – trend of few or no young people taking an interest in aeromodelling. the genesis of our programme was in the observation of the French CLAP scheme which features a simple towline glider and real guidance by experienced free-flighters, both in the construction of the aircraft and also in their trimming, flying and eventual competition participation and enjoyment.

Guilty!

It then occurred to me that I was guilty, along with most of the others, of not being as supportive of Juniors as I should be. Certainly, when casting my mind back to my youth, it seemed that I had benefitted from much more encouragement and real assistance such as transport to the flying field, donations of modelling material, and flying guidance, than I myself was now giving young people on the fringes of our sport. I thus decided to promote the construction and flying of an A/1 that I had designed a couple of years before – the FFOXY. Noteworthy features were its ease of construction, excellent towing characteristics (thanks to the relatively thick wing section and 'hatchet' fuselage) and ruggedness. We produced some lucid 'how to build' diagrams and notes, coupled with John Cooper's guide to towline techniques, which appeared in Aeromodeller back in 1979, and offered them free, with a 'Free Flighters of New Zealand' transfer, to any young person wishing to build a F/F aeroplane. Announcements were made in The Fliers World (the NZMAA journal) and naturally, FFoNZ NewZ. More than sixty sets of plans were sent out, Friday-evening building sessions attracted up to 25 ten-to-fourteen-year-olds. Before long I was privileged to see no fewer than ten young lads tow and launch their new A/1s.

Most rewarding. Now – over to the youngsters...start building!

Building!

Study the plan – if you already haven't – which was featured in last month's Aeromodeller. Read the following instructions – and don't start building until you understand how each part is constructed

Make sure you have obtained all the materials required according to the list published last month (and repeated here, in case you missed it). Stripwood must be straight and firm. Aliphatic Resin is a good choice of glue. Your building board must be flat, or you will be unable to create 'true' wings and tail. And a sharp blade in your modelling knife is essential.

You have the potential to create a splendid flier, but only if you take the time to build an accurate model. No rushing the task, please.

Let's get going

Cut out the fuselage sides according to Fig 1. This means you will get them both out of one sheet of 1/16 x 3 x 36in. Careful, though; there's only about 1/4in to spare at overlap.

Next, cut the fuselage core from 3/8in balsa. Follow the outline shown on the plan. Cut the outline first; then the cut-outs for timer, ballast – and at the rear. See Fig2.

Roughly shape the noseblock from 3/8in hardwood. Ply is a good choice; but don't use balsa which is far too soft. Now glue the fuselage together. Make sure all is flat and 'square'. Leave overnight to dry. Next sand the fuselage to remove 'high' grain. Round the corners slightly. Then give one coat of dope, and cover with tissue, doped on, except where the wing mount goes. See Figs 3 and 4.

Now add all the fittings. Carefully cut and sand away the tissue so that the fins and aluminium tube guides can be blued directly to the wood of the fuselage with epoxy glue. To glue then over issue means they will fall off. Add no ballast yet. Fig 5 details.

Wing next!

If you cannot get any 1/4 x 1/16in and 1/4 x 1.8in spruce for the mainspars, use very hard, straight balsa instead. In this case, make the bottom spar from 1/4 x 1/8in balsa too. See Fig 6.

Cut a rib template from 1/16in ply. Allow for the notch into the trailing edge (TE).Use this template to cut out the wing ribs. Forget the spar notches for the time being.

Cut four ribs from 3/16in sheet; Two from 1/8in sheet, and 28 from 1/16in sheet.

Pin them together in two stacks – one for the centre panel of the wing and the other for the tips. Sand to uniform shape, taking care not to reduce the size or change the profile.

Cut spar slots with a razor saw, finishing off with a small, flat file. Check the notch frequently with the actual spars to get a good fit. This is vital – or your wing will be weak. Now cut the notches in the TE with a small, flat file or two hacksaw blades taped together. Figs 7 and 8.

This cheery band of FFOXY fliers hail from NZ. All set to go are: David Cambers, Mark Halliday, Win Manson, Terry Magee and his daughter, with Graeme McVinnie at far right.

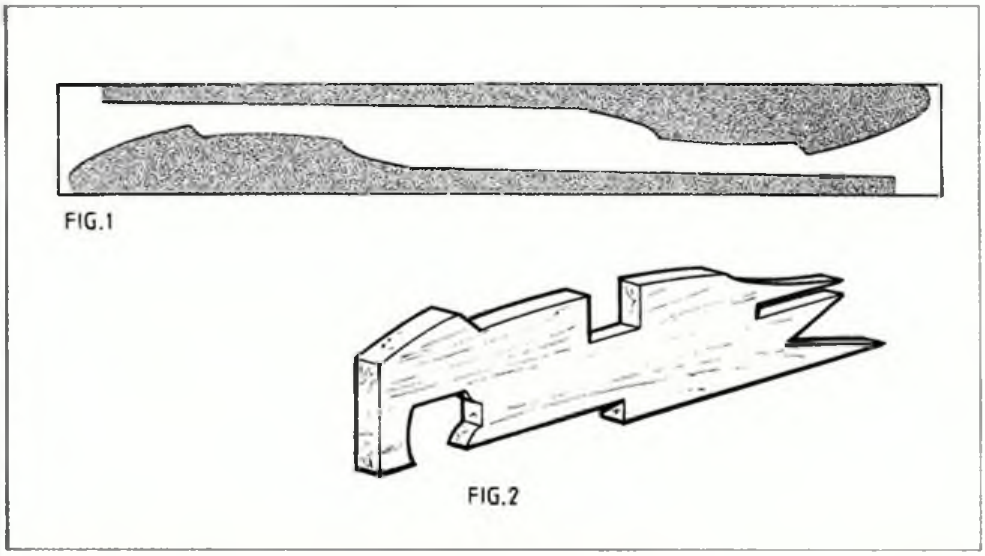


FIG.1

FIG.2

Cover the plan with clingfilm. Pin down the leading edge (LE) and TE. Note that the front of the TE must be packed (under the clingfilm) with a strip of 3/32in balsa. Clue in all the ribs, one at a time. Ensure each is 'square' and vertical. Check that the lower ends of each rib match with the bottom of the TE strip and LE. (Fig 9).

When ribs are dry lift the wing panel from the plan. Glue in spars and pin down the wing again to dry. This prevents built-in warps. However, we do need an 'artificial' warp in the left (port) wing tip panel. A piece of 1/8in balsa should be placed under the TE to produce this. See Fig 10.

Now add the webbing between the spars. It must be a good fit, and should touch both spars. You may glue the webbing to the back edge of the spars; this is easier but slightly less strong.

Add gussets and tip cap-ribs. Shape the LE with a razor saw and sanding block; as long as possible. Extra effort here makes all the different. Check all joints, re-gluing where necessary.

Sand dihedral angles, using the template. Glue tips onto centre panel.

Tail affairs

Make a rib template from ply, as you did for the wing.

Cut out ribs. Pin together and sand to uniform shape.

Cut spar slots with a razor saw or small hacksaw. Check with the spars to ensure perfect fit. (Figs 11 and 12).

U JUNIORS!

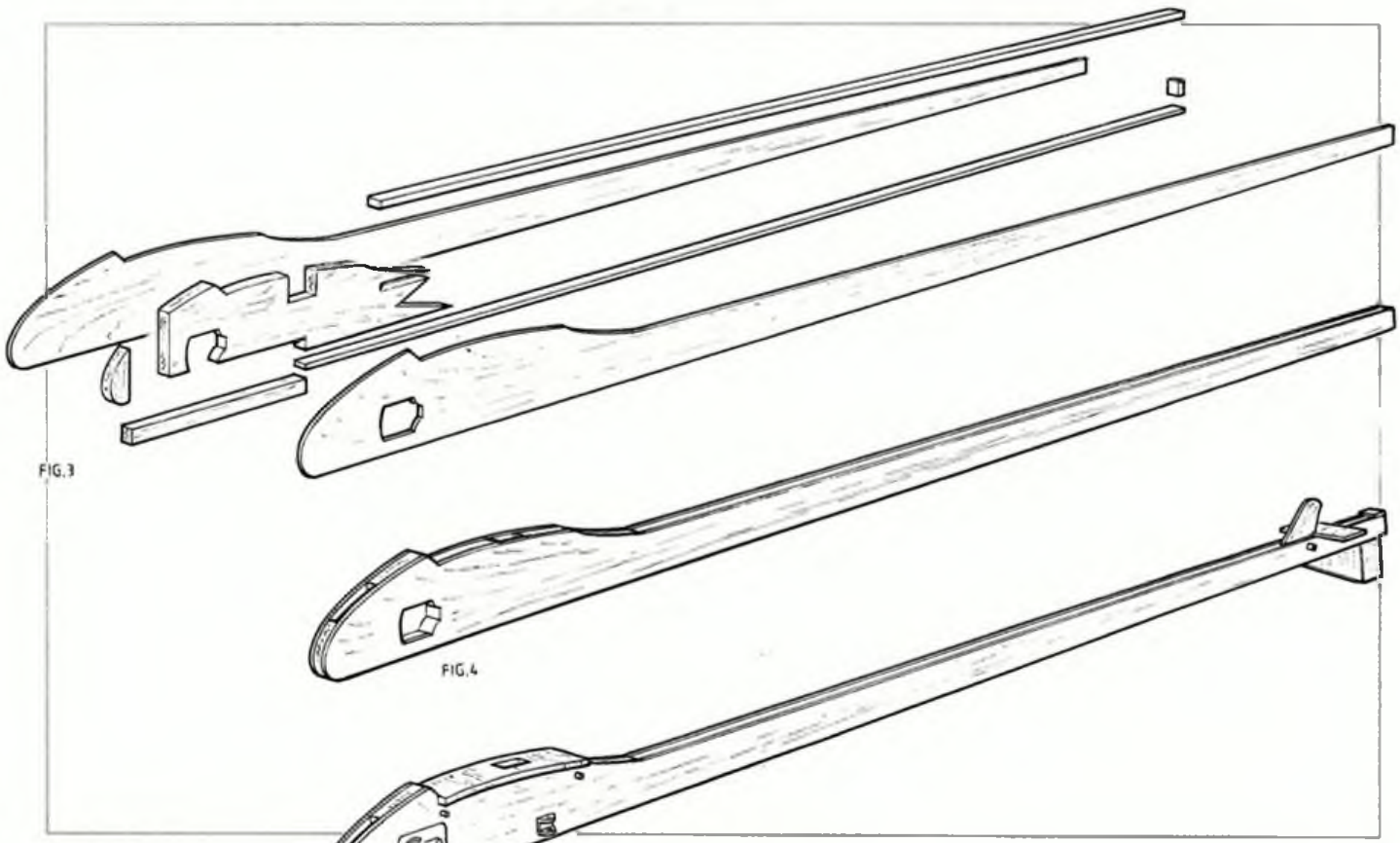
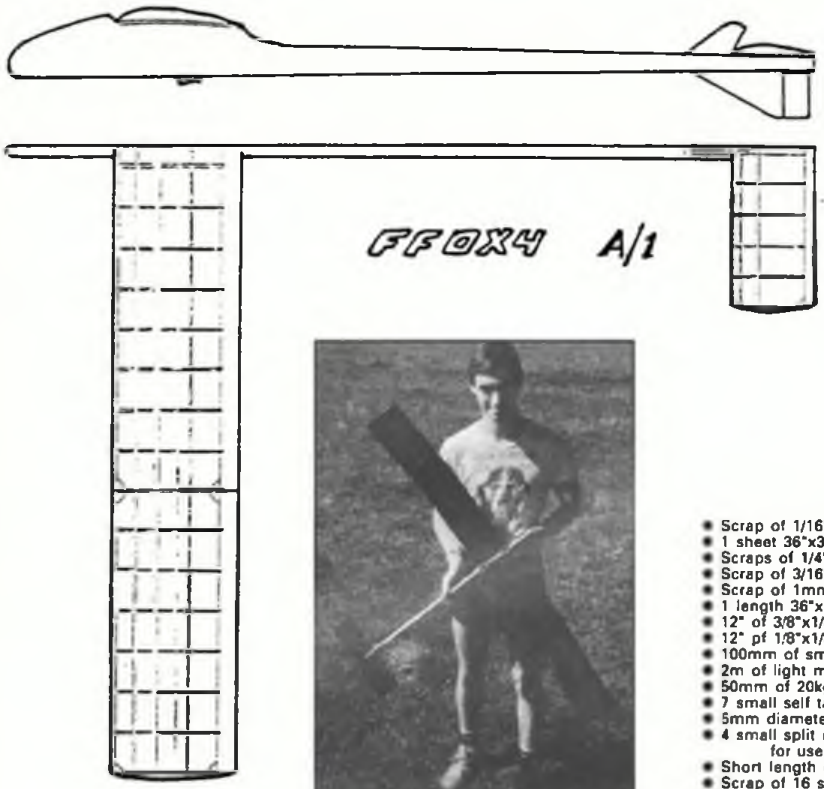


FIG.3

FIG.4

FIG.5



Straightforward lines of FFOXY seen at left; Reece McVinnie displays his version below. Yes – he's a heavy metal fan too...

FFOXY A/1 MATERIALS LIST

- 1 sheet 36"x3x1/16" balsa – hard straight grain for fuselage sides
- 2 lengths 30"x3/8"x1/8" balsa – hard, straight for fuse. top and bottom
- 1 piece 3/8"x3/8"x163mm hardwood (pine) for towhook mount
- 1 piece 20mmx36mmx3/8" hardwood for noseblock (alternatively 3/8" marine ply)
- 150mm of 3mm dowel for wing & tailplane rubber bands
- Scrap 1/16" ply for tailplane mount
- 12"x1/8" quarter-grain sheet balsa for fins, rudder, wing mount
- 9"x3/8" balsa sheet for fuselage pod core
- 2 lengths 36"x3/4"x3/16" shaped Trailing Edge – nice and straight
- 2 lengths 36"x1/4"x1/4" vary hard straight balsa for Leading Edge of wing
- 6 lengths 36"x3/32"x3/32" v. hard straight balsa strip for wing spars
- 1 length 36"x1/8"x1/4" spruce for top spar in wing centre panel
- * 1 length 36"x1/8"x1/4" spruce or as above for bottom spar in wing c/panel
- 1 length 36"x1/8"x1/4" hard straight grain balsa, top spar in wing tips
- 1 length 36"x1/16"x1/4" hard str. grain blasa, bottom spar in wing tips
  NOTE: If you reallly cannot get ant strip spruce then make both top and bottom spars on wing centrepanel from the hardest 1/4"x1/8" balsda you get.
- Scrap of 1/32" sheet blasa for infill behind L.E. of tailplane
- Scrap of 1/16" sheet balsa for wing spar webbing and gussets
- 1 sheet 36"x3"x1/16" medium density quarter grain balsa for wing and tail ribs
- Scraps of 1/4" and 1/8" soft/light balsa sheet for wing and tail cap ribs
- Scrap of 3/16" quarter grain balsa sheet for dihedral wing ribs
- Scrap of 1mm ply for tailpane D.T. hook and T.E. protector on wing
- 1 length 36"x1/8"x1/16" medium straight grain balsa for tailplane spars
- 12" of 3/8"x1/8" shaped T.E. for tailplane
- 12" pf 1/8"x1/8" hard str. grain balsa for t/plane L.E.
- 100mm of small diameter aiuminium tube for guides for D.T. and A.R. lines
- 2m of light monofilament nylon (5kg is about right) for D.T. and A.R. lines
- 50mm of 20kg monofilament nylon fishinig line as towline
- 7 small self tappng woodscrews for towhook timer and start pin bracket
- 5mm diameter keyring to use as towline ring
- 4 small split rings (about 6mm diam. – get from fishing gear shop) for use on ends of Autorudder and Dethermaliser lines
- Short length of 16swg piano wire – bend to shape for start pin
- Scrap of 16 swg aluminium sheet for towhook and start pin bracket
- Scraps of sheet lead for ballast and some epoxy to encapsulate it
- 2 polypropylene hinges for rudder hinges
- 1 K.S.B.6-Minute Dethermaliser Timer
- 2 of 3mmx16mm long nylon bolts as rudder adjusters
- Short length 22swg piano wire - bend to shape for start spring for D.T. timer
- Small piece of brightly coloured lightweight cloth (nylon is ideal) for pennant on towline. The rules say it must be 2.5 square centimetres minimum area, so use a piece of 250mm x 100mm or slightly larger
- 2 sheets of lightweight tissue. Modelspan is great to use if you can find it. Peck Polymer and Jap types are slightly harder to apply but you can still get a range of bright colours.

RECOMMENDED TOOLS

- Modelling knife – X-ACTO or P.O. Instruments type
- Glass headed pins
- Metal straight edge and rule – at least six inches long
- Nice flat building board – say 1m x 600mm minimum – coreboard with ply faces. You must able able to push the pins into it. DO NOT cut on it!
- Blocks and strip of wood to make into sanding blocks. Cut and glue good quality abrasive paper to these blocks and strips – use contact cement. Recommended grades – 80 grit for coarse shaping and 220, then 360 grit for finishing.
- Small drills, small screwdriver, needlenose pliers, wire cutters
- Soft artists type brush for doping
- Small flat file and some Emery-boards as used for fingernails are useful
- If you can afford it, a Safety Cutting Mat is very nice to use and the 'Self-healing' type are great and do not blunt your knife. An A3

Cover plan with clingfilm, as before. Pin down LE, TE and bottom spar. Glue in the ribs, checking fit of each.

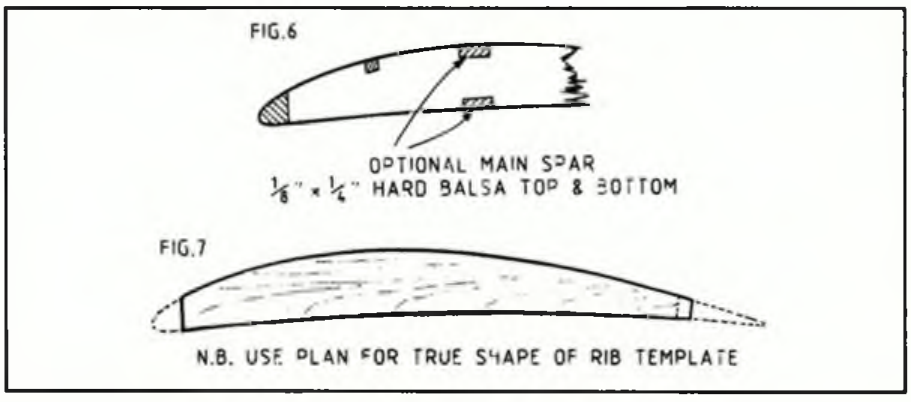
Glue in top spars. Leave to dry. Lift from building board and add tip cap ribs, gussets and bottom sheeting. Sand everything smooth. Make the slot for the ply hook in the centre rib but leave it off until the tailplane is covered and doped.

Covering

Cover wing and tail with lightweight tissue stuck on with dope. Try the tailplane first for practice.

Wings: Dope overall with a coat of 50/50 dope/thinners. This seals the structure against moisture and raises the grain. Sand the wing gently. Next coat with full-strength dope – but only where the tissue will touch. A second coat will be needed on the underside of each rib, which is a concave surface.

Cut the tissue for each panel about one inch oversize all round. Start with the underside, then the top of each panel. Stick the tissue on with thin dope, starting at the mainspar. Then work forwards and backwards, brushing dope through the tissue onto the edge of the ribs, and then the LE and TE. Gently pull out any sags or wrinkles. Rub the tissue with a finger



to ensure it is stuck to the bottom of each rib and to all the bottom spars. Use a narrow brush – the idea so far is to stick to all the balsa, not dope across the panels.

Trim the tissue away by sanding with a small piece of sharp glasspaper on the LE and TE. A feathered edge will result. Seal with a lick of dope.

Cover the tip in the same way. You will not need to stick the tissue to each rib. Just the outline will do.

Now shrink the tissue with a most of water from a plant spray. Let it dry thoroughly.

Dope with up to four coats of thinned dope (this means less than 50/50. 30/70 dope/thinners is fine). Waiting for a day between coats is best.

Check for warps. All panels should be flat except for the left tip which has 1/8in washout. If there are any other warps, get rid of them by steaming and twisting.

The set-up

Mark the balance point on the underside of

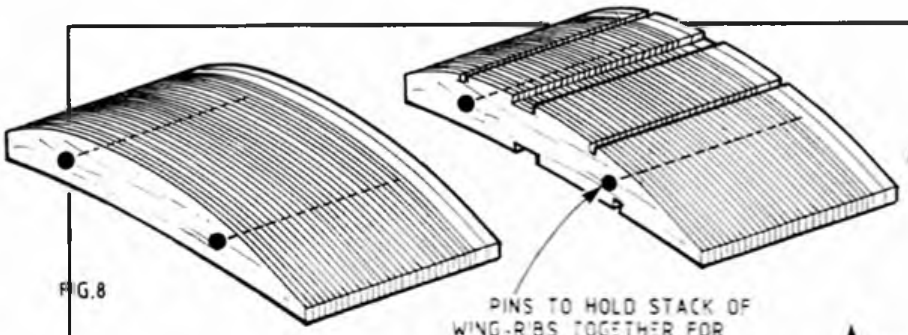


FIG.8

PINS TO HOLD STACK OF WING-RIBS TOGETHER FOR SANDING & NOTCHING.

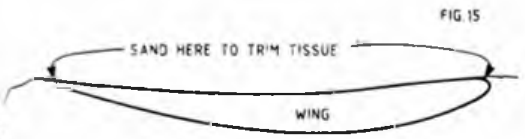


FIG.15

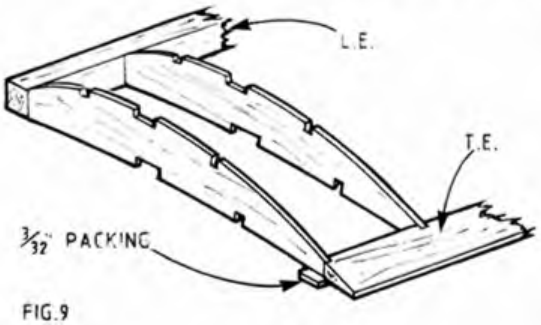


FIG.9

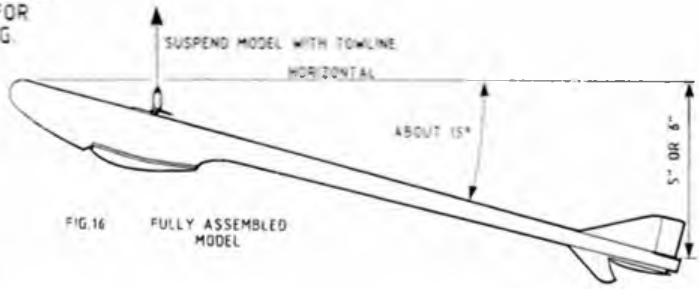


FIG.16 FULLY ASSEMBLED MODEL

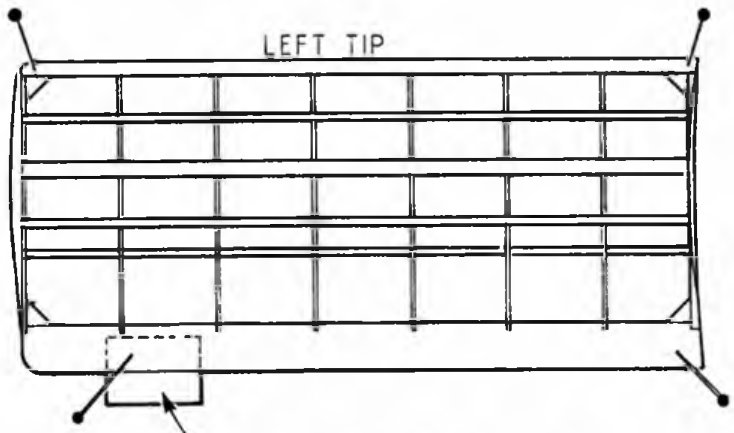


FIG.10

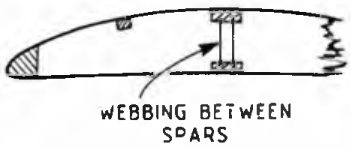
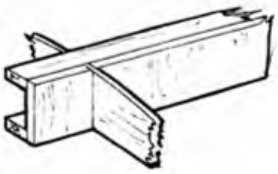


FIG.11



ALTERNATE METHOD WEBBING BEHIND SPARS

FIG.12

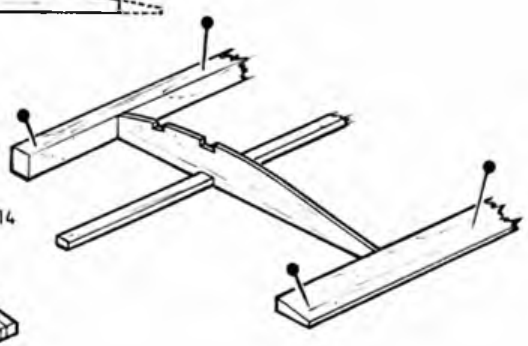


FIG.14

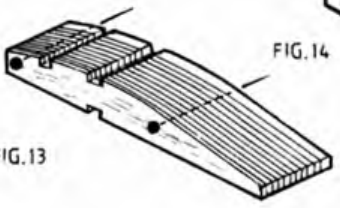


FIG.13

the wing mount platform. Rubber band the wing and tail onto the fuselage. Add lead in the nose ballast box until it balances at the correct place. Fix the lead with epoxy and tissue cover over the ballast cavity.

Check the towhook position. It may still be necessary to move the twohook forward or back when trimming.

Now ensure your FFOXY is ballasted to the correct weight. Add lead to the ballast box at the centre of gravity (CG) position until it is up to the minimum allowable weight of 220 grams. Use scales! See Fig 13.

Make sure the auto-rider (AR) works correctly. Don't use too strong a rubber band to actuate the rudder – it must not overpower the other band at the front end of the AR line where it is held by the start pin. Make sure the timer and dethermaliser 9DT) work every time.

Put your name and address on the model – and check those warps again!

Flying!

1 Do not try to fly your FFOXY until you have completed the 'Setting Up'.

2 Start off with some hand glides over long grass on a calm morning to get an initial trim. It should be a gentle slow glide turning slightly to the right. Adjust the thickness of the packing under the back of the tailplane to achieve this.

3 For the first flights all you want to do is to get it to tow straight and tow to the top of the line, so set a short time of about 20 seconds on the DT timer. If it veers to one side, release the line immediately to save the model from crashing and correct with opposite rudder 9in the tow mode) for the next test-flight. If it can veer either side then the position of the towhook may need adjusting, probably forwards. If the model will climb to the top of the line then the hook may need to move backwards. Try adjustments if 1/4in at a time.

4 Practice towing the glider to the top of the line and releasing it cleanly and smoothly without a stall.

5 Adjust the packing under the tailplane to obtain a slow glide, but if it stalls from a good steady launch then take packing out 1/32in at a time.

6 The glide circle must not be too tight; 25-30 seconds for one complete circle is OK.

7 Always set the Dethermaliser when you fly your FFOXY, even test flights! This model loves thermals and it will fly away if you let it.

More details on trimming and flying next month! Stay tuned...

Spanish Flying

Dick McGladdery visited the 2nd Open International at Vidreres, 13-15th April

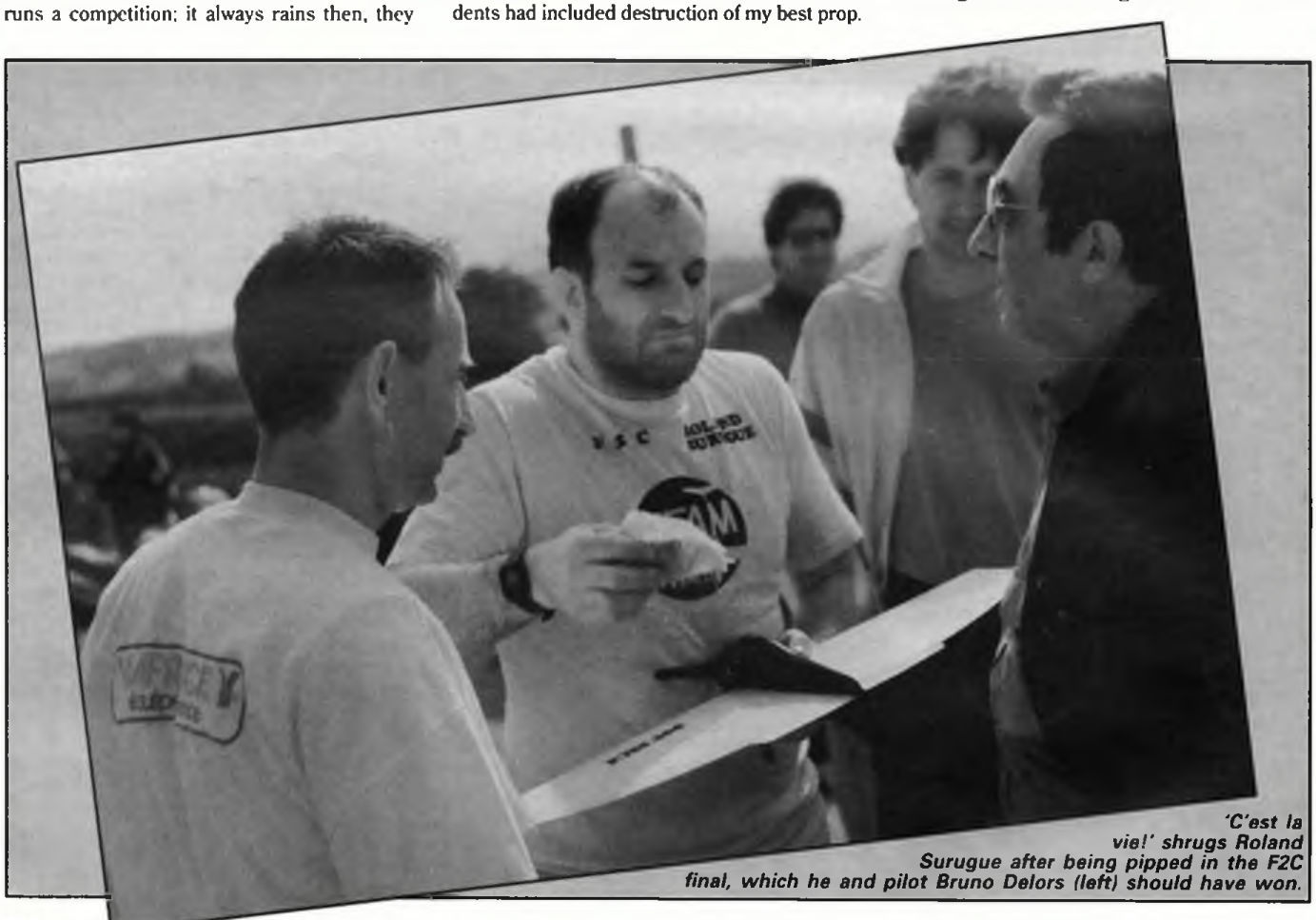
VIDRERES is a small village in north-east Spain, about 70Km from Barcelona and a mere 15Km inland from the holiday resort of Lloret de Mar. Unlike Lloret, it is refreshingly undeveloped, part of the 'real' Spain, and the last place you might expect to find a C/L club with its own caged flying circle. Its existence owes much to the enthusiasm and energy of 'Pace' Mato, who is also largely to thank for mounting this international competition. This represents a lot of very hard work on the part of Paco and his small band of helpers and I hope that the response will encourage them to run it again in 1992.

Mixed

Support this time came from France, Italy, Portugal and the UK who provided one F2A and two F2C entries. The weather was a bit mixed, rather cool on the first day and some rain on the second (the locals like it when Paco runs a competition; it always rains then, they say!) but the final day was sunny and pleasant. The organisers kindly arranged accommodation for Daves Rudd and Fry and myself at the (only?) hotel, the Can Pou, a small, family-run concern with a local reputation for fine cooking. By tourist-resort standards, it would probably not pass muster; 'quaint' might be the best a travel brochure would dare, but everyone in our party loved it. The village boasts upwards of a dozen restaurants, is generally quiet and restful, and we all enjoyed our stay. F2A (speed) attracted six entries; Team Zanin (Elio and Estafano) annexed the top two places, tieing their 1st round flights at 283.46kph and Estafano nosing ahead by the smallest possible margin of 0.01 sec in the second round. I was toiling along some 5kph behind, but was fairly pleased with my three officials of 277/8kph; the previous weekend, at a home competition, I had bent two models fairly seriously, and found on arrival here that one of those incidents had included destruction of my best prop.

The Zanins used their usual OPS15s, extensively modified with about half the crankshaft dremmelled away, steel pipe (very neat) and exhaust stack using a 10mm length of resilient temperature-resistant tube in place of the more usual Viton O-ring. The pipe has a very substantial clip brazed on to the socket which engages a beefy steel clip bottled on to the crankcase, as they reckon a springy clip can stretch, causing a significant loss of top-end rpm. Estafano's model was fairly conventional as far as I remember, but Elio's featured a high-set symmetrical tailplane with a centrally positioned elevator.

In both, the tank simply sits in the wooden fuselage, held in place by a piece of rubber tube protruding upwards from the bottom of the pan. Another prominent feature of the motor is the large 'ram' intake feeding a carburettor that looks as though you could poke your forefinger into it. The engine is a real beast to



'C'est la vie!' shrugs Roland Surugue after being pipped in the F2C final, which he and pilot Bruno Delors (left) should have won.

get stoked up for take-off, but once airborne and on the pipe', it howls like a good 'un. Elio and Estefano have worked very hard to make the OPS 'go'; this motor always looked right for F2A, with a beefy, rigid crankcase and liner/piston materials that never suffered from the persistent 'brightening' that afflicts Rossis and Irvines, but most of us simply could not extract the horses from it. Maybe the parallel cylinder bore was the problem.

My third place model was my '89 Russian-inspired effort, with rolled 'Miraply' near fuselage boom permanently glued to the pan, which started life as a conventional 'half-pan', heavily chopped and dremelled down to about 50g, with a turned dural cone bolted and glued on at the back to provide an attachment for the boom. The wing is 915mm span which dismantles into two pieces for transport and convenience of construction.

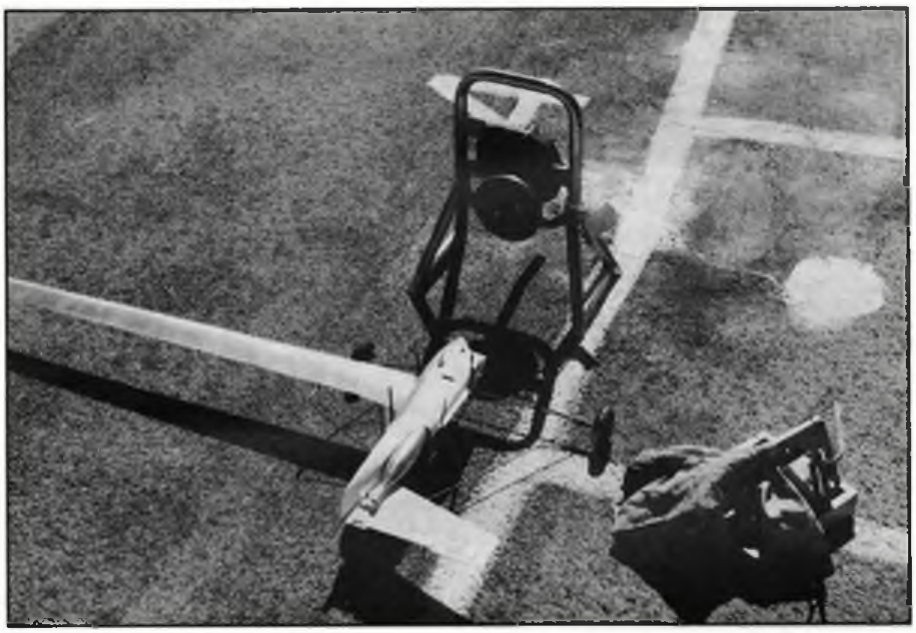
Elio Zanin's F2A. Note steel exhaust stack and tank in the woodwork.

overcooling problem and snagged on R/P's lines in to land. 'Wings' have many good points, but gliding isn't one of them! This resulted in M/P being D/Q'd, so when restarted, only S/D and R/P were left in contention.

R/P got their warm-up wrong again, though not quite so bad as the first time; but S/D also got it wrong, cooking up quite badly by the end of the first tankful, though holding a useful lead at that point. R/P meanwhile had been down and up, trying to get a sensible setting, then things got a bit confused with S/D trying to cool their engine down, and R/P trying to get their's warm enough to work properly. A lap-count board would have been a boom now, but gradually both got themselves sorted out and settled down to a steady rhythm, and R/P squeaked home nine seconds (about five laps) in front.

The F2B (Aerobatics) event was contested by six entrants, but what with one thing and another, I did not see much of it. To gain an appreciation of the story of such a competition demands prolonged and informed observation. It was won by F Rampnoux of France, who also won when the first international was run here.

The prizegiving was enhanced by champagne prizes for the winners, which was duly sprayed over the audience (Radicchi of Italy demonstrated the most assured technique here) before being decanted in to the prize cups for quaffing all round. A super comp, thanks to Paco and his doughty helpers; roll on 1992!

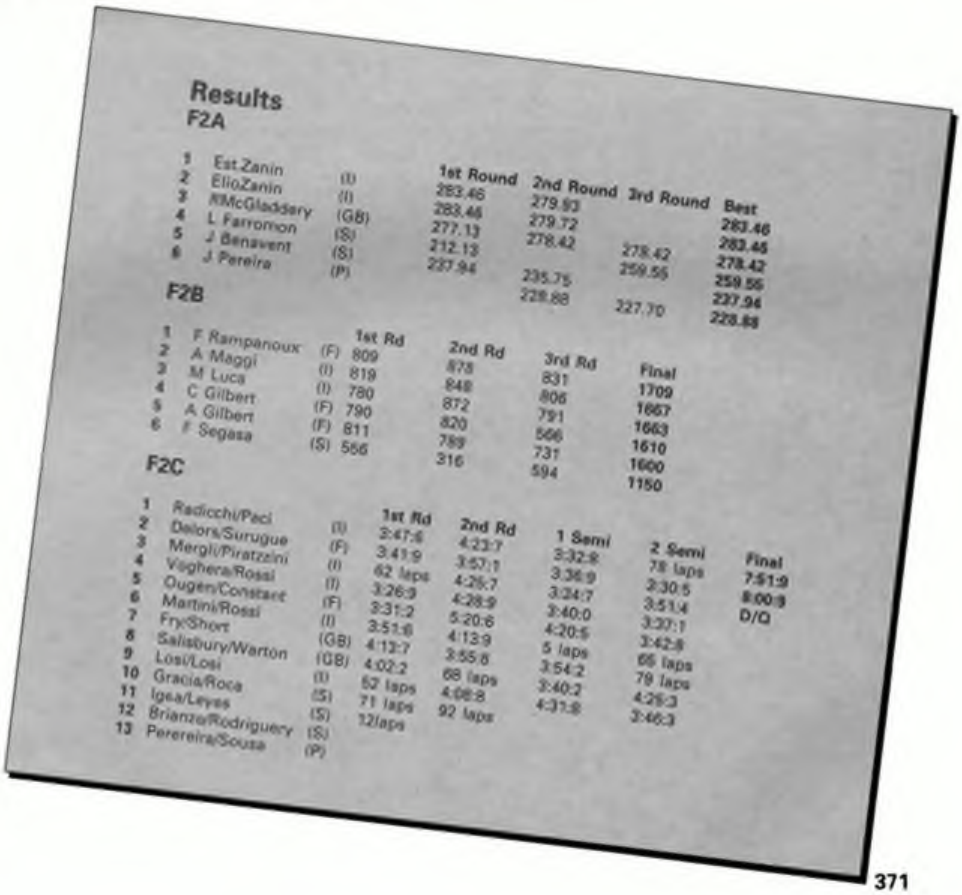


The MkII Rossi .15 F2A of Spain's Benavent.

TR time

F2C (Team Racing) was characterised by very strong support from Italy; apparently results here would count in selection of their team for the World Champs in Blenod near Metz, France, in July. They all seemed to have a lot of potential in their motors, which were mostly Cippola-based specials by Italy's engine wizard, Paolo Voghera. When these go right, they can produce Russian – standard performance of around 17.50/10 laps with 33/34 laps range. However, they mostly seem to run on a knife-edge between cooking up and overcooling, and only Paolo got anything like a good run. His best heat time was 3:27, but he has one engine (kept for special occasions) which is really strong, and has done a practice heat of 3:12! Meanwhile, he is labouring to make another as good or better.

Despite his excellent heat-time, Paolo could not repeat the trick in the semis, and had to content himself watching compatriots Radicchi/Paci (R/P) and Magli/Piratzzini (M/P) fight out the final with Surugue/Delors (S/D) of France. Of these three, S/D looked the best bet, being much the most consistent and right there as regards speed and range. The first try at running off the final was aborted when both P/R and M/P got their warm-up all wrong; first, R/P stuttered to a halt and had difficulty restarting, meanwhile M/P suffered the same



Results

F2A

			1st Round	2nd Round	3rd Round	Best
1	Est.Zanin	(I)	283.46	279.93		283.46
2	ElioZanin	(I)	283.46	279.72		283.46
3	RMcGladdery	(GB)	277.13	278.42	278.42	278.42
4	L Farromon	(S)	212.13		259.55	259.55
5	J Benavent	(S)	237.94	235.75		237.94
6	J Pereira	(P)		228.88	227.70	228.88

F2B

			1st Rd	2nd Rd	3rd Rd	Final
1	F Rampanoux	(F)	809	875	831	1709
2	A Maggi	(I)	819	848	806	1667
3	M Luca	(I)	780	872	791	1663
4	C Gilbert	(F)	790	820	566	1610
5	A Gilbert	(F)	811	789	731	1600
6	F Segasa	(S)	556	316	594	1150

F2C

			1st Rd	2nd Rd	1 Semi	2 Semi	Final
1	Radicchi/Paci	(I)	3:47:6	4:23:7	3:32:8	78 laps	7:51:9
2	Delors/Surugue	(F)	3:41:9	3:57:1	3:36:9	2:30:5	8:00:9
3	Mergli/Piratzzini	(I)	62 laps	4:25:7	3:24:7	3:51:4	D/Q
4	Veghera/Rossi	(I)	3:26:9	4:28:9	3:40:0	3:37:1	
5	Ougen/Constant	(F)	3:31:2	5:20:6	4:20:5	3:42:8	
6	Martini/Rossi	(I)	3:51:8	4:13:9	5 laps	65 laps	
7	Fry/Short	(GB)	4:12:7	3:55:8	3:54:2	79 laps	
8	Salisbury/Warton	(GB)	4:02:2	68 laps	3:40:2	4:25:3	
9	Losi/Losi	(I)	62 laps	4:08:8	4:31:8	3:46:3	
10	Gracia/Roca	(S)	71 laps	92 laps			
11	Igea/Leyes	(S)	12laps				
12	Brianza/Rodriguery	(S)					
13	Perereira/Sousa	(P)					

VINTAGE CORNER

Alex Imrie examines motives, extends a welcome and sounds out sources

Seen at our ASP Designs Day – Peter Michel with Percy III described elsewhere in this issue, and David Baker with 56in Southern Sentinel which won at Taft last year.

WHEN this column started over nine years ago, its purpose was to show the reader the amount of activity taking place in vintage modelling and in that first issue (May 1981), readers were invited to contribute details and photographs of the vintage models they were building. Over the years many readers kindly did so, but generally, the amount received was less than desired. Periodically, when it dried-up completely, reminder appeals for input usually resulted in stirring someone to write in. I have always found your own experiences highly interesting, and I know that readers have too. Sometimes, it was the mention of a particular subject in the column that evoked a reader's reply. Indeed, this month some recent examples of readers' comments are given. Vintage Corner was never intended to be a 'how-to' column. Very occasionally, some such crumbs might have fallen from its table, although really I like to leave that aspect to builders more capable than your humble scribe. A fair amount of historical coverage has been given, especially in the appreciations of work done by prominent aeromodellers, but it may be that this of lesser interest to the majority of readers. Apart from the enjoyable research involved, I persevere with this in the hope that my writings provide (as stated in Vintage Corner No 1) 'an educational aid for new readers'. However, if the original main aim of the column is to be maintained, contributions are needed – the column remains yours – so do write and tell us what you want to see in it and we will do our best to comply, bearing in mind the availability of material: or better still, tell us about your own activities, the sharing of experiences can only be to the betterment of the whole movement.

Back to the fold

When I wrote of the return of one-time modellers to the game after a lapse of many years (June 1989) I did not mention the effect that technological advances in the interim might have produced, but this is highlighted by Robert Carter of Middlesex in the following amusing account:

...another aspect of coming in out of the cold is the extraordinary change in some materials now being sold in place of the materials of 40 years ago, some of which, while bearing the same names seem to have the oddest characteristics... I felt like a Rip Van Winkle when I first asked for Banana Oil; all the people in the shop were rolling around on the floor holding their sides, so I used dope instead. Imagine my surprise when the tailplane that I used it on promptly assumed the shame of a curly-brimmed bowler. I certainly did not know that you are supposed to dilute the stuff. Whatever happened to the dope which could be applied straight from the tin (or in those days, the bottle)? At the time, the dope now sold would have been described as heavy glider dope, extra strong. Banana Oil seems to have gone the other way. Some firms used to supply two grades, No 1 (Thick) and No 2 (Thin), or vice versa, but good old firms like O-My and Joyplane did a nice thickish Banana Oil, which, as well as being a good grain filler, would produce a highly glossy finish with a slight trace of translucency – quite a novelty in those days, if not now when everything seems to be not so much translucent, as positively transparent. That glossy finish was a good general purpose finish, though too heavy for the contest hounds. The end result had a 'feel' about it, a bit like oilcloth – tended to develop circular cracks like oilcloth too. The model I am currently building has had so far, one coat of 50/50 diluted dope and about five coats of Banana Oil-scented thinners (daren't give it another coat of dope) and looks like nothing on Earth...'

Bob could have mentioned balsa wood too, whose quality has changed drastically over the years... it used to be light, white and flawless – if you want wood like that today, you have to ask for 'indoor' balsa and pay accordingly. Much of the balsa wood used nowadays is more suitable for repairing fences than making model aeroplanes. Here I suspect that our R/C brethren have been the influence that has caused the grades to get coarser and heavier.

Geoff Parker takes a break from chasing his Irvine Mills powered Popsie, which was in the air for most of the day at Old Warden on 29th April.

Juniors

Ron fielding of Rochdale was moved to write about the motivation of juniors as raised in this column (August 1989). He agrees that for the present day high technology youth, unless they are provided with something that involves electronics, that is, an R/C model aircraft, interest is bound to be at a low ebb. He draws attention to the current Members' Handbook of the BMFA which lends credence to this assumption since it lists model aircraft, helicopters, silent flight models and large models all of the R/C variety, then there are space/

Unmistakable lines of the HJ Pridmore designed Ladybird biplane; this one the work of Brian Downham.

model rockets.... and although control-line, free flight and indoor models are covered, basic rubber models are not mentioned in any detail. It is surely a sad reflection on our official governing body that guidance is not given for beginners to learn the gentle art of aeromodelling. Ron then recounts his own beginnings when he progressed via folded paper gliders and stick rubber models to simple rubber duration models, a type that has retained his interest right up to the present day (some 70 years). He maintains that what is needed is sponsorship and tells us how it used to be:

...I recall that in 1936 or 1937, the Northern daily newspaper "Daily Dispatch" launched its "Daily Dispatch Aero Club"; coupons were clipped from a number of issues (possibly with a small charge of a shilling or so) and sent into the paper's Editorial Office in Manchester – in return, one received a rubber-driven stick duration model of balsa construction, around twelve to fifteen inches span, with a 4.1/2 in bentwood propeller (possibly of Frog manufacture). Flights of about a minute were quite possible; the paper ran competitions and badges were awarded – I think the whole affair ended with a "Grand Championship Fly-Off" – possibly in Heaton Park, Manchester, with I think, a flight in a real aeroplane as the Champion's prize!

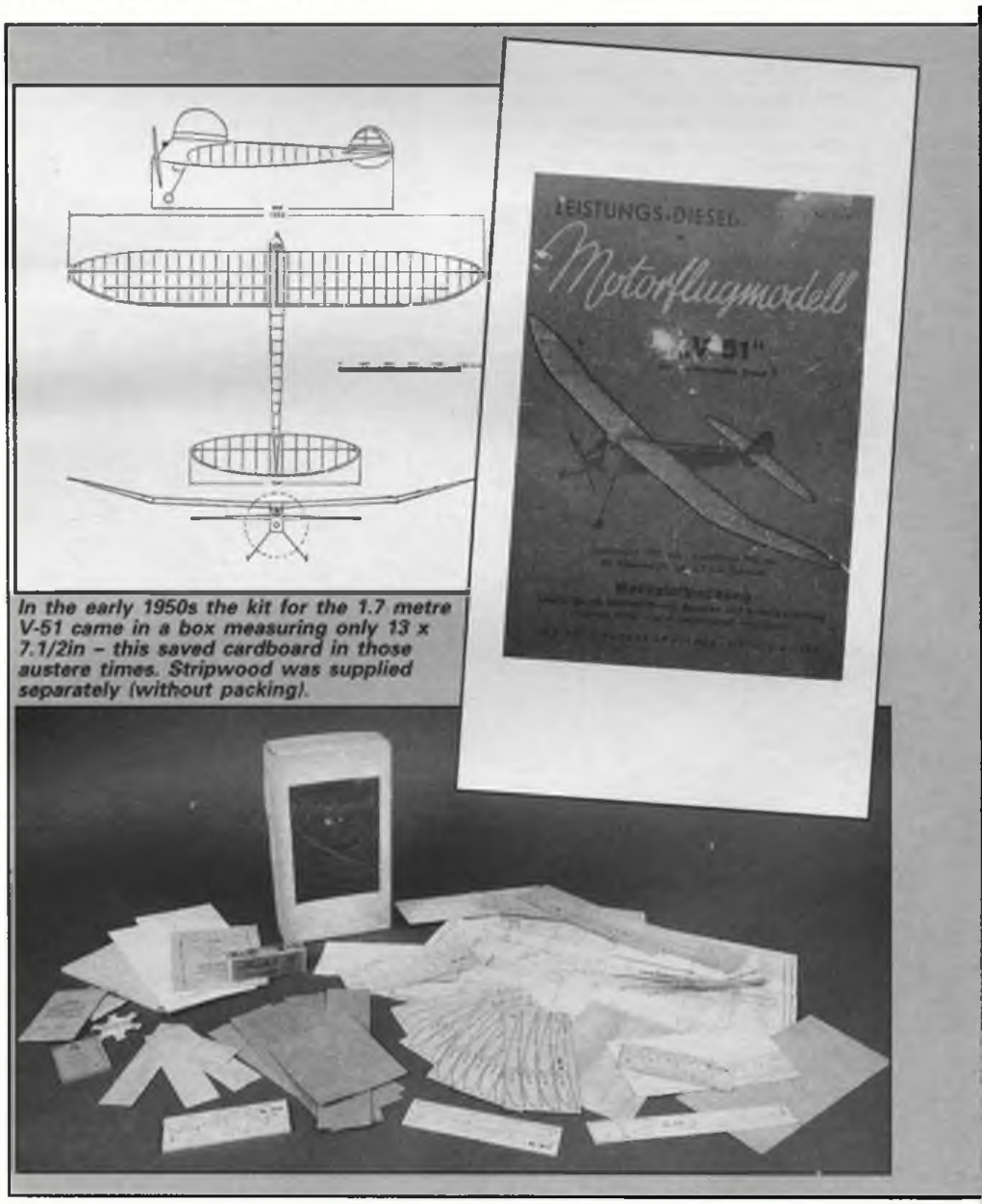
Ron then suggests (with tongue in cheek he says!) that I get in touch with the Editor of the 'Sun' to get some publicity for models (aircraft). He adds: 'Page three may never be the same again...' Seriously, such an approach would have to come from the official governing body, thus once again I'll raise the question asked in the August 1989 issue. How about it BMFA?

Selley-Tex

Doug McHard supplies this interesting thought on the origin of the basic material used to make the moulded parts in the kits referred to in March last issue:

'I have come across reference to a material which, I think, may help us to re-create these models: it is a SIG product called Celastic, a "colloid treated fabric", about 1/32in thick, but also, I believe, available in a heavier grade. The property which interests me is that upon being soaked in cellulose thinners, it becomes completely mouldable, and re-stiffens upon evaporation of the solvent, retaining whatever shape it has been formed into! Could it be the original material, I wonder? The name sounds almost the same...'

Doug has yet to get his hands on this material, but doubtless when he does, we will know about it. I expect that if it lives up to the claim made for it, we will then be a stage nearer being able to duplicate the Selley-Tex style of mouldings. On the same theme, an interesting letter arrived from G R Kay of Warrington who is a regular reader of Vintage Corner, himself a modeller of long standing, an aviation enthusiast and an ex-full-size pilot. He relates that between the years 1935 and 1940 he had an enormous pile of the old magazines like Flying Aces, Air Trails, and Model Airplane News, and thus was well aware of the existence of the Selley-Tex models from the advertisements carried in all these magazines. However, he only became aware that Elite Model Airplane Supplies of Manchester had stocked these after reading the March Vintage Corner – at the time he lived only 18 miles from Manchester and

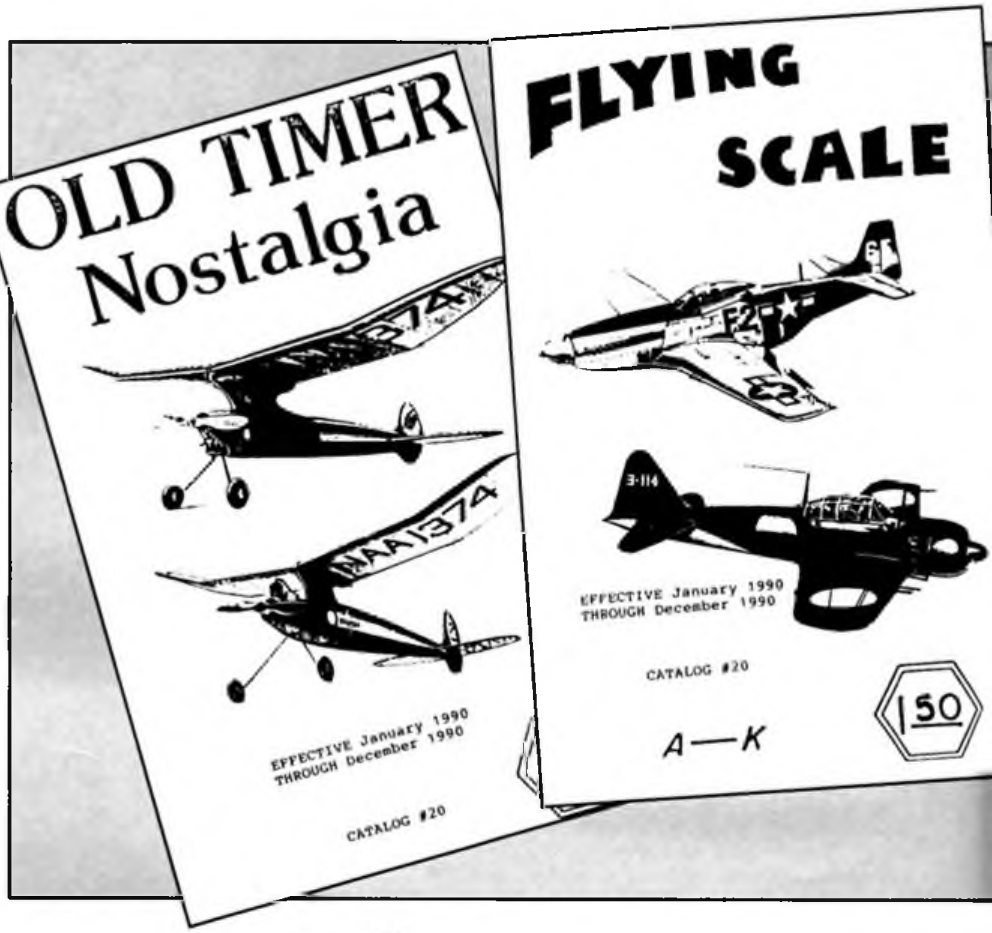


In the early 1950s the kit for the 1.7 metre V-51 came in a box measuring only 13 x 7.1/2in – this saved cardboard in those austere times. Stripwood was supplied separately (without packing).

had he known of Elite's stock he would certainly have obtained a Selley-Tex kit. He writes:

The composition of the mouldings has always puzzled me. From the adverts we are told that it is a moulded fabric. The fabric would almost certainly be a lightweight cotton cloth, impregnated with something and then moulded under pressure and heat to produce left-hand and right-hand half-shells. Sometime ago it suddenly came to me that the answer must be in the name; Selley-Tex gives the clue! "Tex" is short for textile, the material from which the moulding is made. If we make the "S" into a "C" we get "Celley", short for cellulose, I think. This would indicate that the fabric was soaked in (maybe) thin model cement before moulding. When dried, this would stiffen the cloth. This is the sort of idea that would occur to someone connected with aeromodelling. Have you ever dropped cement on your clothes and allowed it to dry? It goes hard and you cannot get it out! Also, the two half-shells would easily stick together with model cement. Anyway, that is my theory, and I'm sticking to it!

After receiving these letters I heard that a small moulded fuselage had been located by David Carpenter in Southampton. He kindly gave this into the care of Mike Wilson and although I have not been able to examine this component, it is, I understand, 8.3/4in long, being the fuselage of a low-wing monoplane complete with radial engine cowling and very like that used on the Lockheed Orion. However, the Orion plan shows the fuselage to be 12.1/2in long, so it is obvious that the moulding is for a smaller model of say 16 inches span; yet a perusal of the Selley-Tex advertisements does not reveal such a model. Might it have been that other manufacturers also adopted this system? Further developments are awaited with interest.



Tom Hughston of Plano, Texas with his large rubber-driven Megow Stinson 105.

Big Burds and others

Tom Hughston of Texas enjoyed the Burd article in the March last issue, and with it mention of Doug McHard's Rearwin Speedster. He wonders if Doug might be persuaded to detail more fully the changes that he made to this design. Tom also enclosed a list of forth-two giant rubber scale models, not one of them under fifty inches span; while one, the Bay State Models' Curtiss Robin, is 70in span. These designs are all available as full-size working drawings from John Pond Old Time Plans Service (see below). Also in the Burd article Doug McHard bemoans the non-availability of Bamboo Paper, but George Bushell of Enfield was quick off the mark to tell me that this material is available in white, yellow, red, blue and black in 21 by 31 inch sheets at 45 cents each from Oldtimer Model Supply in USA (again, see below).

Vintage goldmines

Mention above of the John Pond Old time Plan Service and Oldtimer Model Supply warrants a short description of each of these specialist businesses that cater for the vintage enthusiast. I have also included a resumeé of the holdings of a German source for vintage items. Many letters are received from readers who wish to know where certain plans or materials are available and I recommend that they obtain the lists put out by John Pond, ken Sykora and Dr Sturm to receive an eye-opening revelation of just what is available.

(a) John Pond Old Time Plan Service, 253 North 4th Street, Box 90310, San Jose, CA, 95109-3310, USA

John Pond was one of the instigators of the Society of Antique Modellers (his membership number is SAM 001). He sparked off interest in vintage models when he arranged an inter-0club contest for such models in California in 1962. A columnist on the subject and is still at it in his Plug Sparks column in Model Builder. Much of the enthusiasm of the whole vintage movement is due to John's untiring efforts, especially in the provision of old time plans. He issues four listings which cost $1.50 each, there are two on flying scale (encompasses some 4000 titles!), one on power models and one covering rubber, towline glider, control-line and radio control. His current catalogues are his twenti-eth issue.

(b) Oldtimer Model Supply, PO Box 7334, Van Nuys, CA 91409, USA

This business originated some twenty-five years ago in pioneer modeller Jim Noonan's

No self-respecting enthusiast would be without John Pond's plans list; current edition is in the 20th year of issue.

with all parts like ribs and formers, cut out and sanded. Includes models like the 2.31 metre span Goldhahn (1938), 2.10 metre span JS-7 Ostland (1939) and the 1.62 metre span HS 100 (1940) and the range extends to the 1.90 metre span Funk-Star and the 1.22 metre span Grupner Satellite of the post-war years. There are twelve famous sailplanes similarly treated from the 1.20 metre span Babny (1934) to the post-war 2.30 metre span Bergfalke. Additionally over 20 control-line kits are available, some of them from the wellknown Graupner line like the Mew Gull. There are pages of accessories (many of them original) like plugs, coils, condensers, propellers, wheels and piston rings for both the 4cc and 10cc Kratmo petrol engines. Over 100 engines are available, many of them replicas of early German types, long since rare collector's items. A random look at these reveals Kratmo 4cc and 10cc, Thaler 8cc, Felgiebel 7.6cc and 14.3cc spark ignition from 1938 to 1941: French Allouchery 1.25cc diesel: Webra Rekord 1.5cc diesel (original); Eisfeld 2.5cc and 6cc diesels from 1942; a seven-engine range of Taifun diesels from the .98cc Junior to the 3.5cc Super. In addition there are jet, CO_2, and glow engines. It is well worth investing £2.00 for this fine listing whose contents, although not entirely of German original provides a very comprehensive compendium of undoubted interest to all vintage modellers.

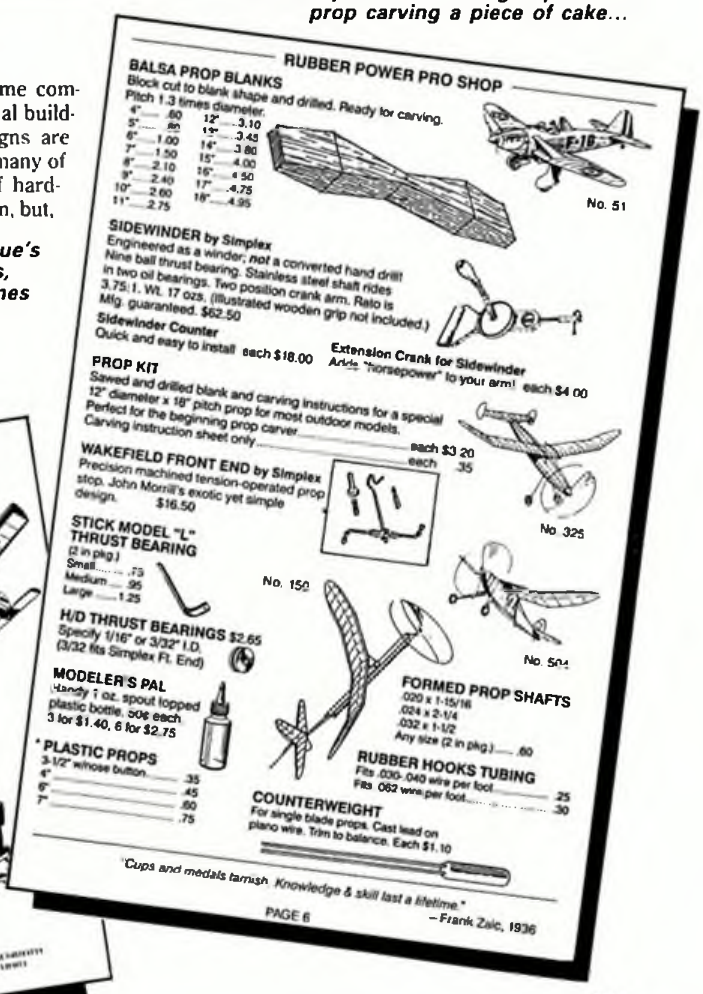
Below: Sample page from the Oldtimer Model supply catalogue. Note mention of the Prop Kit which allegedly makes prop carving a piece of cake...

basement in Milwaukee. Since he could not find many of the old-type goods, he set about obtaining raw materials from source and processing these and making them available to modellers. He last produced plans and tooling for various parts like turned balsa wheels and propeller blanks. However, by 1980 he could not physically cope with the vast amount of orders and disposed of the business, which for the last few years has been in the capable hands of Ken Sykora who issues a detailed catalogue priced $2.00. So if you seek silver tissue, Bamboo Paper, screwed brass bushes, bobbins, prop blanks, balsa wheels and a host of other such things – try Oldtimer.

(c) A-M-Z, im Strasser Feld 29, D-5120 Herzogenrath, Germany.

Dr Sturm's enterprise Antik-und-Fesselflug-model-Zentrum (Antique and Control-line Model Centre) has recently been advertising in Aeromodeller, but these do not adequately indicate the vast amount of material handled by A-M-Z that is of direct interest to vintage modellers and a closer look at their excellent 64-page catalogue, (very reasonably priced at £2.00) is necessary. Most currently available vintage and replica items are stocked. It would appear that this is Europe's largest vintage store. However, I will confine myself to goods of German or Continental origin since readers may not be aware of their availability. There is a good selection of German vintage plans for models from 1931 to 1956, which come complete with copies of the original building instructions. These designs are also available as replica kits, many of them in the original style of hardwood and plywood construction, but,

Below: The A-M-Z catalogue's 64 pages bulge with plans, kits, accessories and engines – a fine offering from Europe's largest store of Vintage items.



MOTOR MART

...in which Tony Brookes investigates a new CO_2 motor from the USSR

Open the box and this is what you get!

FOR a number of years the most popular CO_2 motor in continental Europe has been the 0.27 c.c. Modela, designed by the late Jaroslav Studnicka and distributed under the MVVS trademark. A few years ago, reports began to appear of a similar motor manufactured in the Soviet Union – the Dvigatyel DP—03. An improved version has since been introduced and an example of this later motor has been acquired and put through its paces.

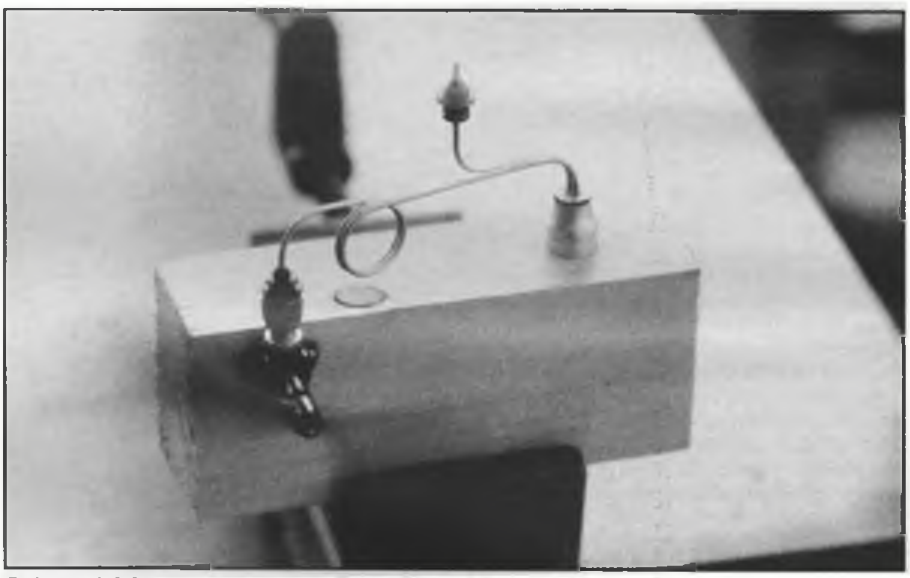
First impressions

Previous experience of the abysmal quality of Russian packaging led to the first agreeable surprise – the Dvigatyel came in a very adequate and well designed EPS box which survived the journey in excellent condition. Opening it revealed the usual motor-tank-filler assembly, a black plastic prop slightly larger than the Modela prop, a very hefty black plastic charger, an eleven-page manual (in Russian) and the most comprehensive kit of spares the writer has ever seen supplied with any motor..

Detailed examination

The motor looks much bigger than the Modela, but is in fact of identical displacement, although a little heaver at 30 grams. The crankcase is of black plastic, with a bright blue snap-in backplate. The cylinder is apparently aluminium, anodised gold. It is finned, as usual, and the largest fins have knurled edges. The cylinder screws into the crankcase and is provided with a locking ring, also knurled. The head is of black plastic. There is a conventional aluminium tank. The filling nozzle, like that fitted to the later Modelas, has no mounting lugs. An interesting touch is the use of transparent plastic for this component so that the valve ball is clearly visible.

The pipework is made from brass, and is of larger bore than the Telco pipework. The tank-to-motor pipe is attached to the head by means of a union as in the Modela, but the union nut is made of plastic and knurled for operation with the fingers.



Dvigatyel 0.27 purrs away merrily on its test bench...

The prop is driven by means of a flat ground on the extended end of the crankshaft. A consequence of this is that the prop can be fitted in only one position, in which it stops more or less horizontal.

The motor is radially mounted via a stout flange at the rear of the crankcase..

Charge!

Operation of the charger was a little awkward. This is one of those chargers with no cut-outs in the body to enable a 'breech loading' technique to be used. Instead, the head must be completely removed and a 'muzzle loading' operation performed. At first, much gas was lost as the head was screwed in place. Eventually it was realised that the method often necessary with Telco chargers – screwing in the head until gas escapes and then backing it off slightly to allow the O-ring to seal – does not work with this charger. There is no O-ring – the neck of the capsule is sealed with a tapered rubber sleeve. Often the frangible seal is broken before the neck is fully engaged with the sleeve, so if gas is heard to escape, it is time to screw the head in as quickly as possible – backing off makes matters worse. Once this was understood the charger became much easier to use.

Even then, there was sometimes a slight tendency for leaks to occur. This was rather mysterious at first, since the leaks were unpredictable. One bulb would seal perfectly, while the next would leak audibly even when fully tightened. Examination of the used bulbs showed the reason. In the ones which had leaked, the hole formed in the frangible seal was always well off centre, whereas in the successful ones, the hole was right in the middle. An off-centre hole would appear to indicate that the bulb had not engaged with the sleeve in a perfectly concentric manner, so the neck of the bulb would be hard against the rubber on one side but less so on the other, allowing the possibility of a leak. This is thought to be one cause of the wide variation of run times from one bulb to another..

Running

Bench running was done with the motor mounted on a pine block with a hole drilled in it to accommodate the tank.

It was soon apparent that the design makes for very convenient operation. The knurled locking ring holds the throttle setting secure while making it very easy to change. The arrangement for slackening and retightening the

Attractive packaging is of pleasantly high standard.

pipe junction to allow the cylinder to be screwed in and out is equally user-friendly – no spanner is required and adjustment while the motor is running is just about possible provided care is taken. The union nut must be tightened hard or it will leak, but that is the only source of possible difficulty.

After thorough running-in, tests were carried out at three settings, using thee bulbs for each test and carrying out three runs in rapid succession with each bulb. The motor and tank were allowed to attain room temperature between bulbs, but not between runs with a single bulb. First of all, a high setting was arrived at by screwing in the cylinder until the point was reached at which further adjustment brought no apparent increase in speed. Beyond that point, maximum cylinder pressure is attained too soon before TDC, and the motor runs rather like an over-compressed diesel. (A further, rather startling sign of this condition is that the motor actually speeds up at the end of the run as the gas pressure falls). To establish a low setting, the motor was throttled back until it would not run at all, and then gradually opened up until it would start and keep running as long as there was anything in the tank. A medium setting halfway between these two extremes was also used. Asda bulbs were used throughout the tests.

The first surprise was that only three usable runs were possible with one bulb. In every case the second run of the three was the best by far.

On the high setting it was necessary to use Lock 'n' Seal on the prop screw. Without this precaution the screw vibrated loose and the prop flew off. The second time this happened the screw was lost and the spare had to be brought into use. The run durations achieved varied considerably from one bulb to another. A contributory cause of this may have been the intermittent charger leak mentioned above. There may also have been some variation in the gas content of the cartridges themselves.

The intermediate setting also showed some variation between cartridges, and the same pattern of run times was observed. The first charge, delivered into a tank at room temperature, gave an average run of 23 seconds. The second, delivered into a cold, ice-encrusted tank, averaged 81.7 seconds. The third run was always the shortest, and it is thought that by then there was just not enough liquid left in the bulb to fill the tank completely.

Test results

	Bulb	Run 1	Run 2	Run 3	Avg.
High	1	20	34	10	21.3
	2	14	65	35	38
Setting	3	21	140	25	62
	Avg.	18.3	79.7	23.2	
	Bulb	Run 1	Run 2	Run 3	Avg.
Medium	1	20	66	13	33
	2	22	80	30	44
Setting	3	27	99	18	48
	Avg.	23	1.7	20.3	
	Bulb	Run 1	Run 2	Run 3	Avg.
Low	1	165	178	27	123.3
	2	190	230	51	157
Setting	3	141	205	24	123.3
	Avg.	165.3	204.3	34	

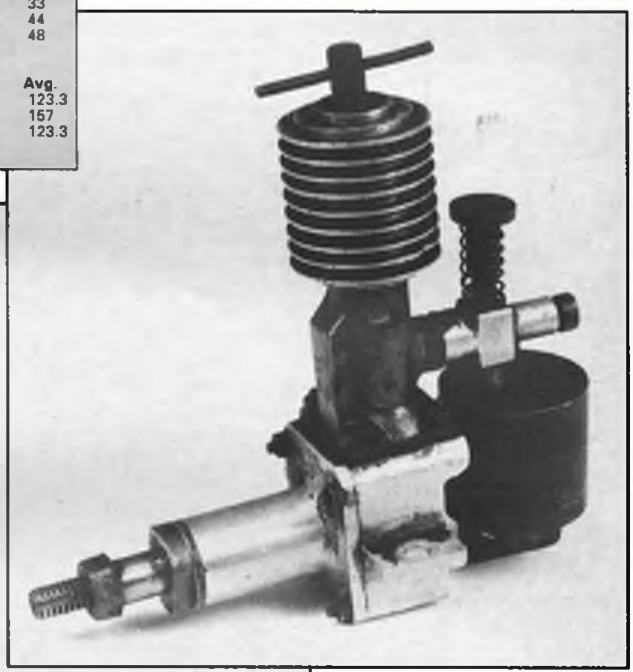
Purring

On the lowest possible setting the motor ran smoothly and with less vibration than expected. It appeared to keep purring away for ever. In fact the best run duration achieved was 230 seconds.

This tank obviously makes better use of the available liquid CO_2 than the Telco tank does, and one starts looking for an explanation. One possibility is that the wide bore pipework has no effect, allowing liquid to flow into the tank far more quickly. The pressure rise in the tank as the liquid starts to boil off acts against the incoming flow of liquid. The faster the flow the greater the quantity of liquid transferred before that happens.

Finally, a few filling tests were done with other makes of charger. The Shark charger does not fit, but the Telco and Modela chargers both work very well. Should the Dvigatyel charger ever cease to work, one of the latter should serve as a satisfactory substitute.

To sum up, the DP-03 is a motor of excellent quality and performance. It can be considered as a very useful alternative to the Modela in most applications for which the latter is suitable. An opportunity to fly it is eagerly awaited.



Two interesting motors seen recently – Baby Cyclone at left features seldom-seen exhaust stack; but what's the diesel above? Crankcase looks amateurish, but not the cylinder assembly. Capacity is about 1.5cc. Any ideas?

MIND THE LINES

More on the old-time control line circuit with Ron Prentice

Not what it seems – Super Zilch here is actually R/C, not C/L. Gordon Counsell looks a bit fierce about it all.

NEWS this month of a series of Vintage Speed Contests to take place in 1990 (and, hopefully in the future). Regular visitors to Vintage Weekend at Old Warden will, I am sure, have seen Dick Roberts flying his McCoy 60 powered Arkansas Traveller and Little Rocket speed models. Dick has decided to run a series of vintage speed events in response to suggestions from modellers who would like to see speed competitions for models bigger than the well-known Mercury Midge. He spent part of last summer canvassing opinion and has formulated a set of rules. The events planned for 1990 are expected to take place at the Rolls Royce vintage C/L meeting on 15th July, Three Sisters vintage meeting 9th September and the Midland Area Rally, Barkston Heath, 14th October.

The end of 1951 was chosen as the cut-off date for several reasons – all the 'good' engines were in production and later versions of the ED Racer, ETA 29 and McCoy 60 are within many peoples' reach. Model choice is very wide, as Aeromodeller and the Annuals of that time featured much coverage of Speed. So did the American magazines. The aim of the competitions is a bit of low key enjoyment for as many people as care to turn up. *Any* control line model is eligible, subject to age. A Weatherman with 15 or 19 engine, or even an Arkansas Traveller, could do quite well and help to create a spectacle. Dick makes the point that safety is the most important feature of speed flying; hence pull test and minimum-size line requirements. He says that he knows it sounds a bit bureaucratic to have such things, but a two-pound model doing 130 mph pulls very hard. The line sizes are good for much higher speeds than he envisages – quite deliberately.

SAM 35 Vintage Speed – 1990 Rules

1 **Model** – Any control line model, kit or plan, published by 31.12.51. Any in production at 31.12.51, including direct descendants (ideally unmodified engines to be used). No Schnuerle ports. No ABC. No rear exhausts. Unrestricted within SMAE safety rules.

2 **Engine**

3 **Fuel**

4 **Propeller** – Wood or commercial moulded plastic (no GFRP/carbon/metal).

5 **Entrant** – Must be SAM member and builder of model – model must carry SAM number. Entrant may nominate proxy pilot.

6 **Number of entries** – Each contestant may enter no more than one model per class.

7 **Timed Distance** – 1/4 mile for class 1. 1/2 mile for all others. Timing will commence two laps after entering pylon or indications of readiness by pilot (depending upon availability of pylon).

8 **Pull Test** – Model, handle and lines to be pull tested prior to each attempt. (A safety strap will be worn between handle and wrist).

9 **Flights** – To take place over tarmac/concrete.

10 **Verification** – The entrant will provide necessary documentation to verify authenticity of models and engines.

11 **Number of Flights** – A maximum of two flights per model, two attempts per flight. (an attempt will be called by the organiser when a model fails to get airborne within a reasonable time, or when a speed is not recorded.

13 **The Contest** – Will be a handicap competition for six engine capacity classes up to 10cc (0.61 cu.ins) displacement. For this first contest, class records as in Aeromodeller Annual 1951 will be taken as 100 per cent. The winner will be the entrant whose model achieves the highest percentage of its class record. For all subsequent contests, the highest class speeds previously achieved will be taken as 100 per cent and results calculated accordingly.

14 **Venues** – Three meetings are planned for 1990.
a Rolls Royce vintage C/L meeting 15/7/90
b Three Sisters vintage meeting 9/9/90
c Midland Area Rally. Barkston Heath 14/10/90.

15 **Class Definitions**

Class	Capacity	Line length	Line dia (min)	Laps	Test Pull
1	1.5cc	35'0"	2x.008"/1x.012"	6	12 lbs
2	2.5cc	52.6"	2x.012"/1x.018"	8	25lbs
3	3.5cc	52.6"	2x.012"/1x.018"	8	25lbs
4	5.0cc	52.6"	2x.016"/1x.022"	8	40lbs
5	8.2cc	60'0"	2x.016"/1x.022"	7	50lbs
6	10.0cc	60'0"	2x.016"/1x.022"	7	50lbs

Note: Line length measured from centre of handgrip to centre of model.
The National Records as shown in the 1951 Aeromodeller Annual are:

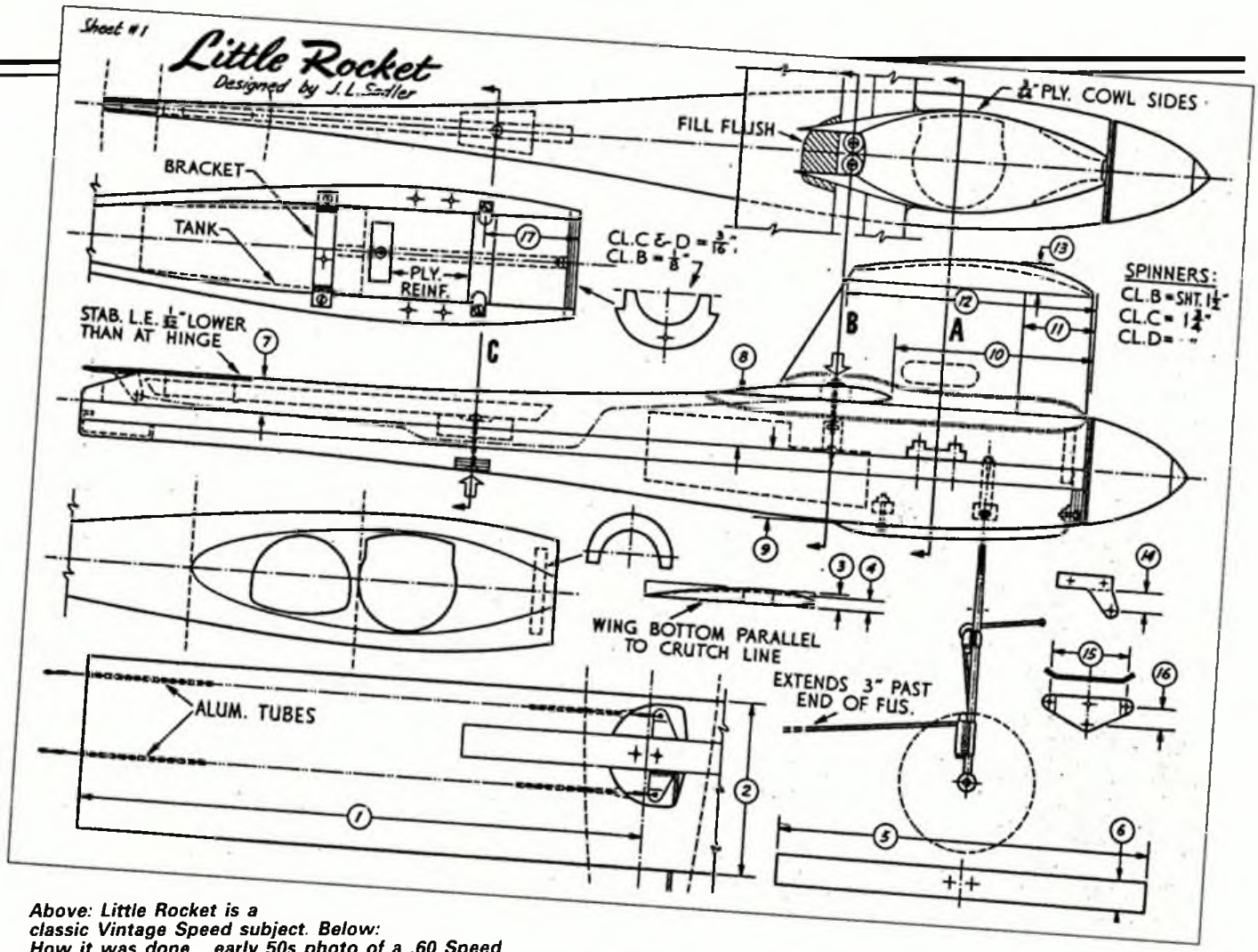
Class 1	80.00 mph	11.25 seconds	Roland Scott 9/7/50
Class 2	99.41 mph	18.11 seconds	A. V. Coles 18/8/51
Class 3	95.00 mph	18.95 seconds	M. Billington 6/8/51
Class 4	124.54 mph	14.45 seconds	P. Wright 14/7/51
Class 5	118.42 mph	15.20 seconds	C. A. Shaw 19/6/49
Class 6	133.10 mph	13.52 seconds	F. Guest 14/7/51

Thanks

Many thanks to Dick Roberts for spending so much time formulating the rules and for arranging these competitions. I see that in his column in SAM Speaks, Keith Harries laments about the lack of vintage speed competitions and asking whether we can beat old records with old speed models. So come on chaps, support Dick Roberts and start building those models. There are dozens, if not hundreds, to choose from. I have one of Fred Deudney's original record holding models in my possession. If only I hadn't sold the original ETA 29 I would have had a go!

Motor matters

While on the theme of motors, I am reminded that I have had some information on the subject of those perennial favourites of stunt control line flyers – Merco Engines. Forest Engineering who produced the motors for a number of years, has been taken over by Premier Engines and Plastics Ltd. of Southmin-



Above: Little Rocket is a classic Vintage Speed subject. Below: How it was done... early 50s photo of a .60 Speed job firing up courtesy of electric starter. Is that a lawnmower chassis?

ster, Essex and their managing Director, Vernon Smith, telephoned to give me the latest news regarding the Merco range. He said that some of the tooling for diecasting crankcases was rather worn, so they were spending around £40,000 re-tooling for the entire range. In the near future they also expect to produce new tooling for the AM 25 and AM 35 crankcases. There are some alterations in the pipeline, the 29 will become a 30, the 35 stays as original. An entirely new 40 is on the stocks, which will use a new crankcase. The 49 will become a 50 and the 61 will be unchanged. The 61 Super Stunt, which features two piston rings and timing differences, will still be available. The diesel version of the .30 will also be in the shops shortly. Although all these engines come with R/C throttles, control-line venturis are available for all models. Mr. Smith made it quite plain that spares for all the original sizes of motors would be available for a long time to come. He also said that 250 AM 10s, 250 AM 10 Glows and 250 AM 15s were being assembled at present. His aim is for 1000 engines of all types per month, so you should be able to obtain one for your favourite stunter before too long.

Those of you who read this column in April's Aeromodeller, will have seen the letter from Sid Sutherland under the heading 'Fireball fun'; this laid out guidelines to help Fireball Trophy entrants. Since publication of the article I have had several telephone calls asking for confirmation of the cut-off date for the competition. I contacted Mike Beach and pointed out that there wasn't a cut-off date mentioned in Sid's letter. Mike replied that he did not really think it was important – what did matter was to get those lovely models to Old Warden, and get them flying. However, he realises that modellers must have a date to use as a criterion and if it was necessary to specify a date, then he would like 31st December 1951. So there you are chaps; now you know!

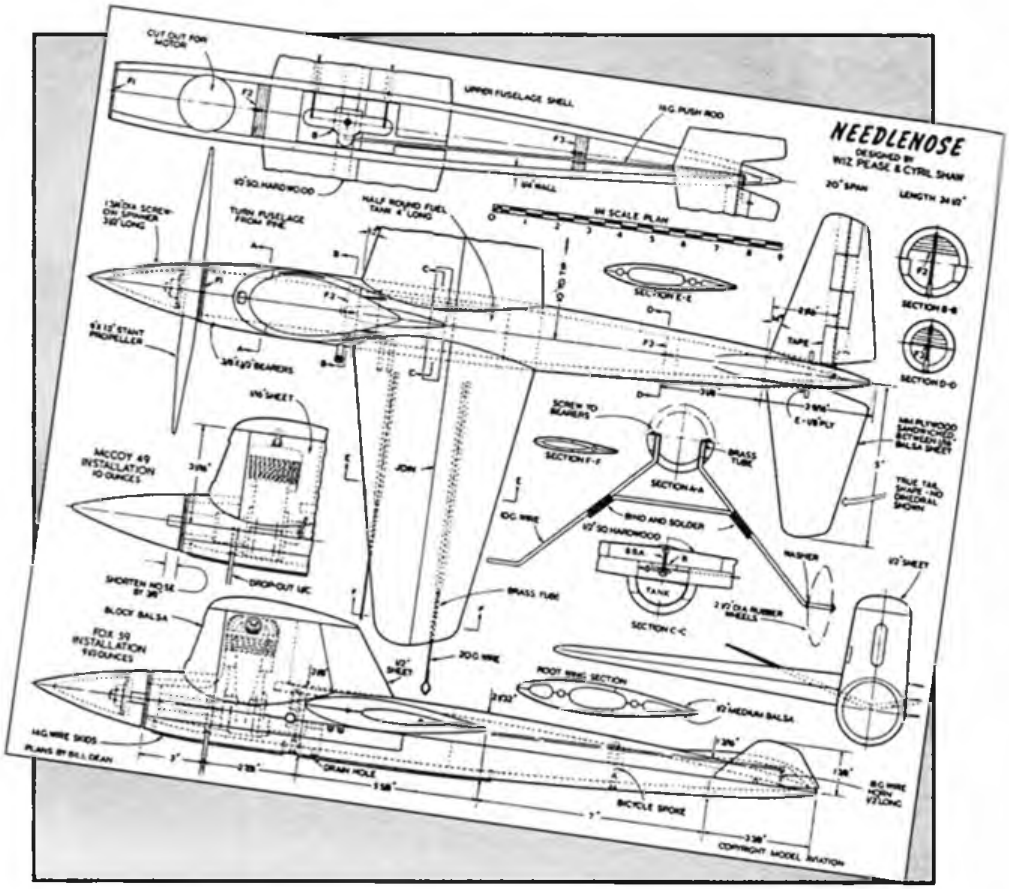
Lay it on

Finally I have an update on the Lightweight Laystrate saga mentioned in August '89 (and again in April). I have had a letter from SAM 35 control line Competition Secretary John

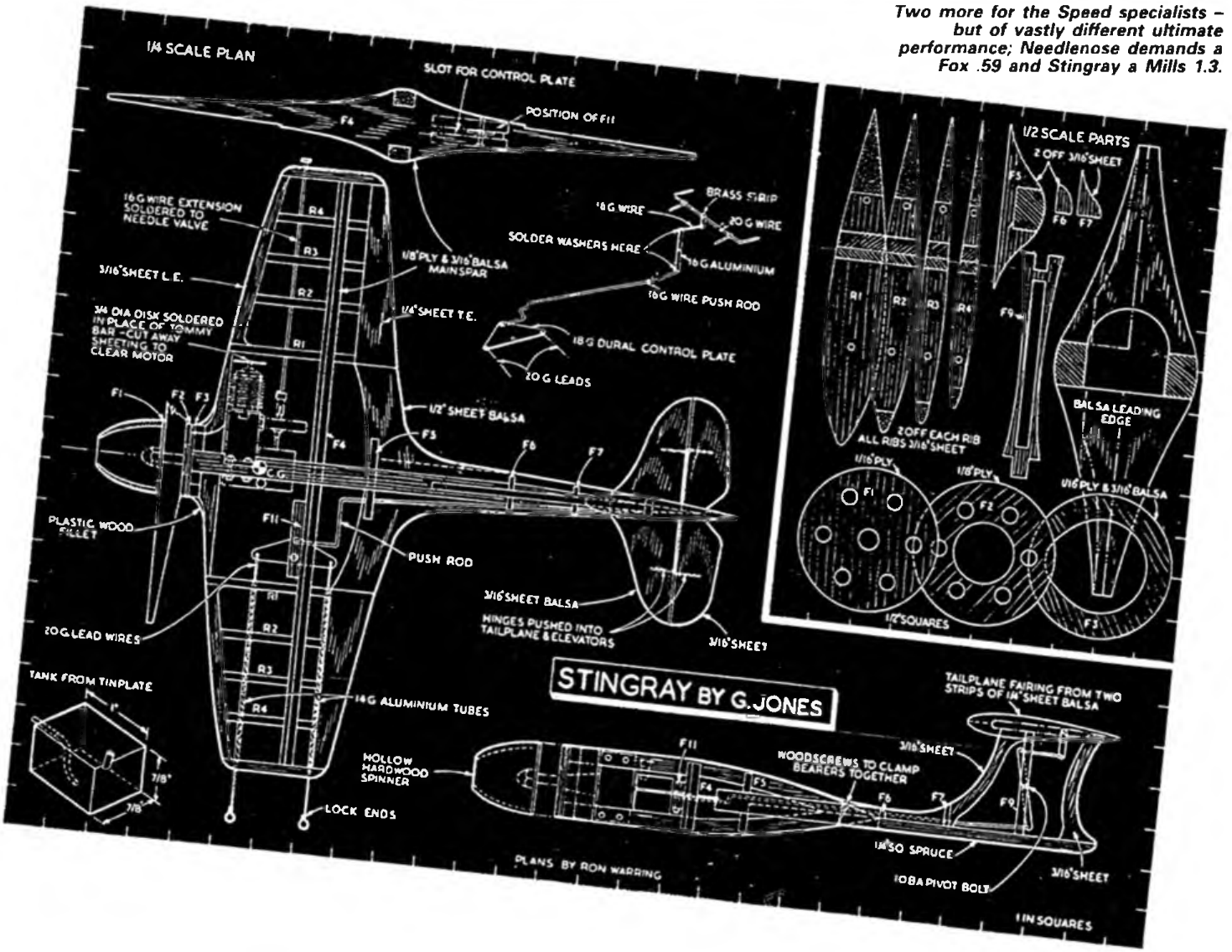
Ray Gordon is a Frog Vandiver enthusiast par excellence. Frog 180 diesel is a spot-on choice of motor. How about a genuine Frog prop too, Ray?

Perry on the subject. John states: *'The club I fly with, Three Kings Aeromodellers, obtained Laystrate type wire, both light (three-strand) and heavy (seven-strand) from a wire manufacturer, from the late 1960s until recently – bulk-buying arrangements making it available to club members at quite a considerably reduced price. I believe this supplier was the same who provided the wire for Laystrate; it was identical. Over the years the quality of wire remained virtually as that of Laystrate, although the appearance changed, as did that of Laystrate. The winding pitch decreased (more turns to the inch), but the usability of the wire remained much the same. During the period from about 1985 onwards however, the wire changed quite dramatically. The pitch increased, the quality became more springy and it did not "lay straight". Coupled with this, it was supplied on a reel of smaller core diameter, about 1.1/2 to 2in. They tended to curl up in spirals when laid out for use."*

John's letter goes on to talk about the alternative lines such as Superline, SIG and Sullivan, but as we are discussing Laystrate, I do not propose to quote the rest of his informative letter at this point. The main thing, as I see it, is that he confirms my own observations on the possible alteration to the manufacturing standard at some point. I have now passed on all the correspondence to Messrs. Ripmax, the wholesaler who handles the sale of Laystrate wire and they have promised to take the matter up with the manufacturer and let me know the result.



Two more for the Speed specialists – but of vastly different ultimate performance; Needlenose demands a Fox .59 and Stingray a Mills 1.3.



BUILD FROM OUR FULL SIZE PLANS!

Jim Latham's 1:25 scale WWI bipe for CO_2 is easily adaptable to rubber power

Rumpler CIV

Neat building and finishing pays dividends. Foam techniques discussed in text.

HOLD it! Before we build our WWI two-seater, let's discuss the various types of foam available, for this material forms the basis of construction.

Foam is a most useful – and – free material which deserves much more widespread use than it enjoys at the moment. So far I have found three grades worth investigation; hard foam, as used for supermarket meat containers (effectively a free material), green or blue foam from refrigeration engineers (you have to pay for this) and the soft, almost pulpy material which is used for packing highly desirable toys like stereos, TV sets, and so on. This can be a most expensive material if you by stereo just for the packing...

Compound interest

Fuselages with compound curves are easy to reproduce with foam. Cut formers to the finished shape and fill-in between with strips cut from a food container. PVA is the best adhesive. When thoroughly dry, carve and sand the fuselage to shape, the cover in non-porus tissue. Pre-shrink the tissue, or the foam may bow in under the tension. Local stress points may be reinforced with extra tissue patches inside the fuselage. The hard, shiny surface commonly found on this type of foam should be sanded away to ensure a satisfactory glue bond. A spreading of epoxy around fixtures such as undercarriage legs and cabane struts will add further strength. Flat-plate motor mounts need to be keyed in place with short lengths of balsa or they may break away in a heavy 'arrival' I have experienced this.

Scrounge

Blue (or green, sometimes) refrigeration foam can often be scrounged form an engineer – if you can find one replacing parts! He will be only too happy to get rid of it. If it is your lucky day you'll get a free motor and fan too. This relatively deuse foam is a handy balsa substitute for carving pilots, cowlings, canopies and so on. Its lack of 'grain' makes it a very forgiving material. Extra surface strength results from covering in small patches of tissue, fixed with diluted PVA, papier-maiche style.

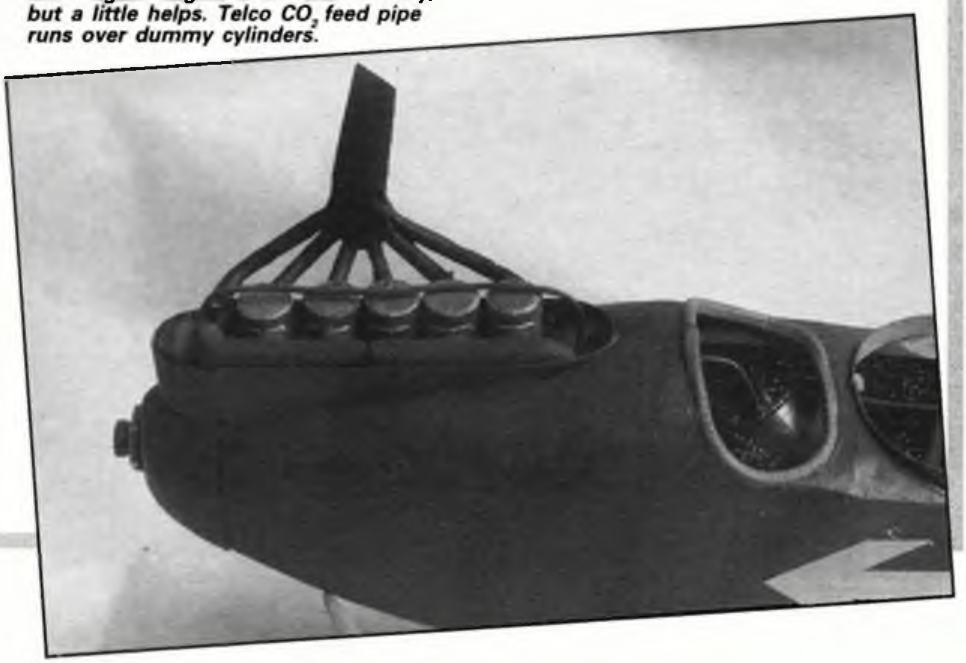
White, 'packing' foam is the lightest of all, but its cellular structure will show through subsequent covering. It is also weak when flexed, but its greatest strength – or virtue – is as a large jigging block or former to keep assembly square during fuselage construction. It can easily be poked out afterwards. If you are economising on purchase of stereo equipment try you local 'chippy'. Fish comes packed in this type of foam, which is simply thrown away afterwards.

I have yet to try wall-lining foam – the type that comes by the roll – but despite some initial misgivings (it is again weak) I accept that it too has substantial uses for aeromodelling, as Steven Midson has shown in his 'Foam Fun' series in this magazine.

Any snags?

Only few. Don't let dope, cyano, balsa cement or – worst of all – polystyrene cement come into direct contact with foam. if the model

Extravagant engine detail unnecessary, but a little helps. Telco CO_2 feed pipe runs over dummy cylinders.



gets wet, beware! The strength factor goes way down. Don't use an excess of PVA or the weight will rise unnecessarily. Lastly, don't stand the stuff without wearing a face mask.

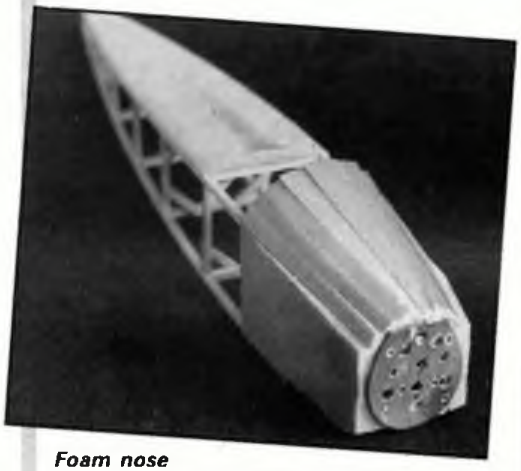
Now let's build the Rumpler!

Try a CIV

The full-size Rumpler CIV was highly praised as a performer at altitude. It looked a good bet for CO_2 or rubber power, so with no further encouragement I scaled it up to 1:25 scale, which gave a wingspan of 19.1/2in as you see here.

The first step is to build all the laminated bits, leaving them to dry as long as possible. If any are out of true, replace them! The fuselage

Aileron washout aids stability. So does secret underfin shown on plan.



Foam nose planking is from food containers. Cheap and easy to manage.

is a conventional, box structure. Nose area and rear decking is planked with foam cut from food containers, attached with PVA, and sanded to shape when dry. Cover the foam areas with pre-shrunk tissue (this merely means treating the required amount of tissue to a light spray with water). 'Open' areas of structure are covered with tissue as normal.

Undercarriage and cabane struts fit into aluminium tubes epoxied to the fuselage structure as shown. Balsa fairings are slotted to accept the wire, shaped, filled if necessary, and covered with tissue.

Wings

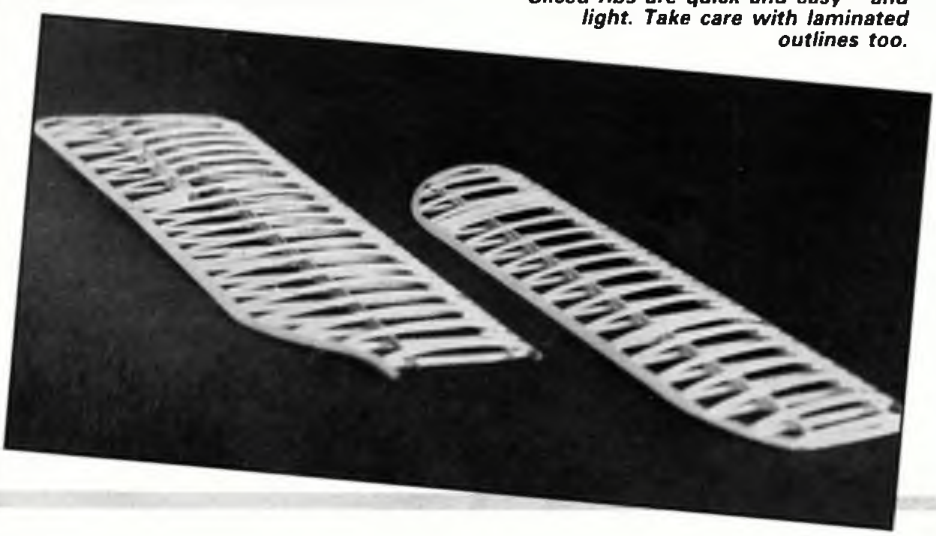
Wings are built using shaped upper and lower ribs, spars laying centrally within. Although this looks fiddly, it is actually just as easy to construct as a conventional wing of this size, and certainly cheaper.

Build a 'male' mould carving from hardwood. Cover with clingfilm and build a watertight box around it. To create the 'female' part pour fibreglass resin, well laced with inert filler powder, into the space. When set, remove and clean up. Cut sheets of 1/32in balsa over-length, laminate, glue and sandwich between the mould halves. Apply pressure with rubber bands. Sand the leading edges (LE) flush before removing from the mould; then slice to required thickness.

Rumpler in flight displays distinctive lines.

Next pin down, and glue, LE, TE and wing tips. Pack up to the LE to suit the upward curve to lower rib. Cut and fir lower ribs. Glue spars in place. If you're going for ailerons, fix two strips 1/32in either side of the hinge line. Glue in upper ribs – and there you have a wing. Cut ailerons free, capping the hinge line with 1/32in sheet. Sand everything flush. Cover with tissue; warp in 3/16in washout at the aileron tips.

Sliced ribs are quick and easy – and light. Take care with laminated outlines too.



Tail feathers

No problems here, but note the inverted tailplane camber.

Assembly and rigging

Offer up cabane struts to fuselage and solder at top. Remove and fit balsa fairings. Glue in place on fuselage and fit top wing. Use the jig to fit lower wings. Add interplane struts, leaving the monofilament fishing line rigging until after test flights. This is because it may be used to tweak out any warps, or increase dihedral if really necessary. A useful tip is to gently pull the fishing line through glasspaper to remove its shine; glue is then accepted much more easily.

Engine cylinders are rolled paper tubes. The exhaust pipes are built up by tissue-wrapping a wire rod, bent to shape. Sand when dry. The main exhaust is for soft balsa. Bent card is used for the radiator with card of balsa louvres added cater.

Finishing

I chose my Rumpler in Jap tissue, lightly doped. The early, mauve/olive green camouflage with light blue undersurfaces is much easier than trying to paint lozenges! The German insignia is easily created from black and white tissue; glue into place only when satisfied! As a reference source, the February 1975 issue of Scale Models has some very useful photographs of this aircraft.

Flight trials

At first, flying the CIV was a nightmare – climb was invariably followed by a curving dive. If high enough at first, the model would curve down beyond the vertical. Once it achieved inverted flight, actually attempting to perform a bunt. What to do? Angles of this and that were altered, weight transferred here and there; all to no avail. The model finally gave up the ghost.

But surely, it had to fly. Sweepback, wing washout,, long tail moment arm, adequate dihedral. Everything seemed in its favour.

Another model was built and exactly the same flight pattern resulted. The only avenue left unexplored was that the engine clutter up front might be causing eddies or blanketing the apparently adequate tail surfaces. A temporary increase in fin area and – bingo! And that is why there is a seemingly unnecessary underfin. Now the model flies as if on rails in flat, right-hand circles.

So will yours!

Stork 'Cigones' colours are just right for this charmer.

BUILD FROM OUR FULL SIZE PLANS!

Pinocchio for C02

John Walden scales down a French favourite for small-field fun

IF BY chance you don't know anything about Pinocchios, beg buy or borrow a 1949 Aeromodeller Annual – or Geoff Clarke's article in a 1981 edition of 'SAM Speaks).

I'd already built two normal-sized Pinocchios (and a one-and-a-half-times-sized effort) so it seemed right to complete the set with a fifty-per-cent miniature.

I was disappointed with its performance at first, only getting 15 to 20 seconds using a Telco charger. Then, at the SVAS Silent Day in 1987 an unknown aeromodeller gave me a couple of charges from his large gas bottle (thank you sir!) and bingo! Lovely long flights – and another Telco charger in the bushes.

The first one I built was exactly as the 'original' with all the hooks, bands and dress snaps, so it ended up a trifle heavy. It flies well but needs a lot of throttle and duration is short. The second is a one-piece job (doing away with the aforementioned hooks etc) and this is the way to go. It turned out just over half the weight of the first one and, now that I've stopped the tank leaking, it flies really well with a Brown A23 and a Williams Prop. With one of the new Telcos it should really go.

So get your tweezers out and build one. It's very tough and just right for small spaces. The longest piece of balsa needed is ten inches so you can make it from the traditional contents of the scrap box.

Pin down your Pinocchio

The fuselage is a conventional box with formers and stringers. Don't notch formers 8, 9, 10 and 11. The stringers sit on top. Make a slot on former 1 for tank pipes before attaching engine mount. Leave the undersheeting till you've found the best position for the tank. Model should balance 1/4in behind mainspar of top wing. Secure tank with bits of polystyrene or soft balsa.

Wings are straightforward except for the small snap fasteners. I attached mine with a smear or Araldite and some nylon thread. Don't let the Araldite spread onto the spring part of the fastener. Remember to angle the root rib of top wing. Dihedral is 1.3/16in; but it's not critical, mine flies with a lot more – or a lot less! Tip ribs are cut to fit by trial and error.

I originally made the tail as the 'full-size' version with all the hooks, dowel and rubber bands but found it tiresome to assemble so have since glued it in place.

Wheels and wires

The undercarriage is 22g wire in ali tubes. Legs are bound with fuse wire and soldered. Make wheels from balsa or expanded polystyrene (a fish and chip tray is ideal).

Cut two discs from tray and stick together. I used UHU contact adhesive (which I thought might attack the polystyrene but doesn't). Trim to shape with a sharp blade and finish off with fine sandpaper. Make ali tube hub and fix in place with Araldite. Now brush all over with PVA glue and leave to dry. This will give a tough crust. Finish off with fine 'wet 'n' dry' used dry and paint matt black. When dry rub gently with a greasy finger to give a light sheen and voila! – mini Trexlers.

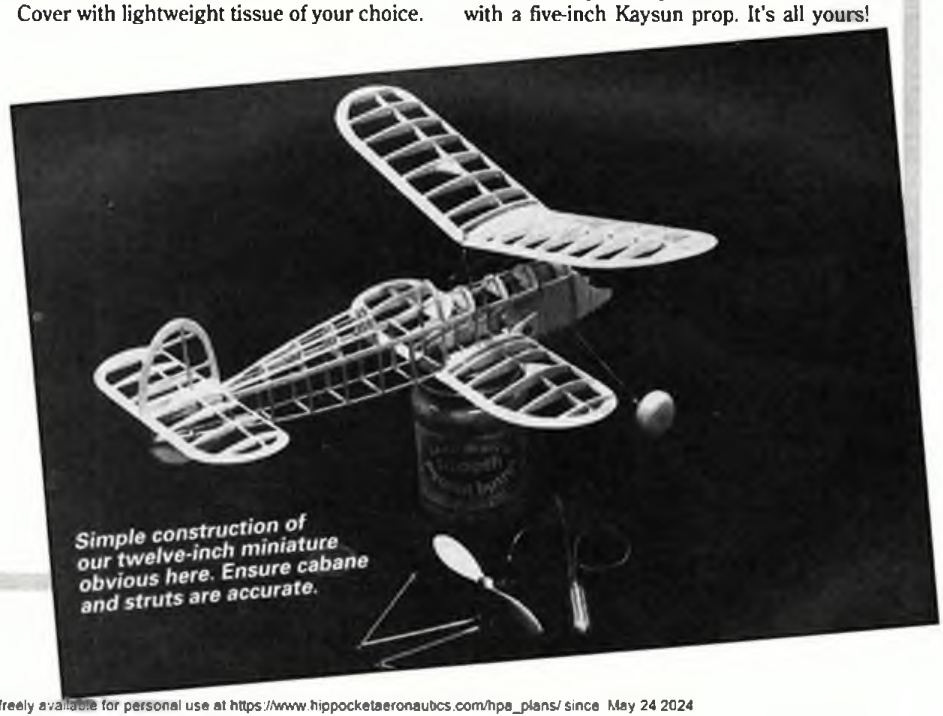
The rest of it

Cover with lightweight tissue of your choice. I used some scraps of Modelspan; it didn't take much! The cabane is a bit fiddly. I made mine by placing front and rear cabanes in a block of balsa of the same dimensions as the fuselage, then soldering the fore-and-aft pieces in place. I made the interplane attachment piece from a piece of ply epoxied to the front cabane, mainly because my narrow nosed pliers were in the garage and it was a cold night! It works just as well as a wire one and is less trouble to fit. Next – the struts...

Assemble all male and female parts of snap fasteners. Place fuselage flat on table with wings attached, and less the undercarriage. Measure length of struts with dividers. Cut from bamboo or thin dowel and bind and glue wire hooks for cabane attachment. Sharpen ends of struts, glue to snap fasteners with a touch of Araldite and leave to harden. This way everything should be at the correct angle. Add more Araldite later if needed.

Flying!

If you've built it true, fill it up and chuck it! It'll fly left under power and downwards on glide. You may need to experiment with sidethrust. My Telco powered version flies best with a five-inch Kaysun prop. It's all yours!



Simple construction of our twelve-inch miniature obvious here. Ensure cabane and struts are accurate.

The Shuttleworth season begins here!

Left: Amy Dennis, daughter of our Scale Matters columnist, made many flights with this Navy Pursuit built from details published in the February issue of this magazine. Docile model ideal for Juniors (and Old Warden fun-flying).

Yes – it's been featured in these pages before, but Ted Horne's F/F Tiger Moth continues to impress with slow, rock-steady flight in true Tiggie tradition. Below: Distinctive lines of the Yoicks stunt biplane by Pete Lilley – note three-line system – contrasts with Vultan delta for F/F, here being prepared by Alan Thompson.

ASP MODEL DESIGNS DAY

Old Warden airfield, 29th April was cheerful, sunny and warm...

The idea just had to work. A vacant slot in the Old Warden calendar and the need for a merry, all-encompassing bash to get our ASP season off to a real, flying start. What better than to permit designs from our own Plans Service? Greater variety exists there none, and had it been breezy (not an unknown phenomenon in April) plenty of stable craft would still have been seen aloft. In any case, there was no shred of concern. Old Warden's weatherman smiled in traditional style, to be greeted in return by as healthy a selection of craft as one could wish, as our photos show. A great fun day, with prizes almost superfluous; but we rewarded a handful of trophies for particularly worthy effort. And we'll repeat the whole extravaganza in 1991, for sure!

Right: Peacemaker design by George Aldrich is a fine C/L performer, even by today's standards. This one was seen in the Three Kings encampment. Below: Chris Strachan's Pegasus took to the air with the best and earned a prize. Below that: Phil Stubbs can be relied upon to present a neat model. Meson MkIV is a Model Aircraft plan.
Below right: Behatted Mike Kemp enjoyed himself with attractive Hoppity from the December 1944 Aeromodeller. Bottom left: Always an aerobatic favourite - Henri Stouffs' Blue Pants design was neatly interpreted by R. Gedge. Below right: Latest from Vic Smeed's stable - this as yet un-named free-flighter caught a thermal and vanished OOS; later recovered.

Top left: Another Hoppity, this time the C/L autogiro from Model Aircraft plans, whirred around cheerfully so we awarded Peter Martin a prize for his efforts. Top centre: This conversion of our Found Centennial free plan (May '89) proved the feasibility of the new Powermax compressed-air unit. Very promising! Above: Slightly enlarged Tubby for KPO1 electric power by Charlie Newman flew charmingly once sorted. Below: Aerobatics from John Green's Commodore, with Fox 36 providing the urge, would have delighted designer Claus Maikis.

Above: Dick Robert's Grumman Tigercat howled around the C/L circuit thanks to twin Dooling 29s. Got a prize too! Left: Regular Old Warden flier Brian Welch was one of many enjoying the chance to fly Vintage lightweight. Here's his Filibuster. Below left: Impressive Icarus stunter by John Perry - often seen at Shuttleworth but we just had to feature it in colour. Below: Smallest ever? Tiny R/C craft for Cox .010 by Bob Ryan has amazing roll rate!

PERCY'S progress

Peter Michel turns back the clock, remembers beginnings and builds anew

WHEN SAM 35's Fred Chapman announced a postal competition for medium-sized vintage rubber models to take place this summer my thoughts immediately turned to the Percy III, the model which introduced me to aeromodelling and which has been a source of delight to me for almost fifty years. It was featured in the August, 1942, edition of Aeromodeller and inspired a front-cover painting by Rupert Moore showing two Percies – one equipped with floats – in action over what looks like flooded sand dunes, presumably Moore's representation of the Littlehampton area of West Sussex where this character-laden contest model evolved from the building board of no less an aeromodeller than R. H. Warring.

Above: What's the collective noun for a gathering of Percies? One or two possibilities were mentioned on the occasion of the photographs on this page, all of which were taken at our ASP Designs Day on 29th April. The merry trio are, from left to right: Peter Michel, Fred Chapman, and (just visible beneath hat) Aeromodeller's tame cartoonist, Terry Rose. Left: Peter displays his own model, the subject of this feature, which is shown in close-up below. Design is a fine flyer, as you would expect from Ron Warring's board. Build yours for Vintage Weekend!

Elegance

Percy III was among the very last and most successful of the 'typically English' rubber models, a type which evolved in the 1930s from the spruce-and-silk era.

These models possessed style and elegance, with their swept-back wings, wide-tracked undercarriages, and purposeful slab-sided fuselages and, of course, their large freewheeling props. Epitomised by Houlberg's Isis, and in the hands of experts, they could give the Americans a run for their money, although they were never quite in the same league as the Kordas and the Lanzos.

The Percy III (and more particularly the 'Super-lightweight' variant) was an anomaly in one or two respects. In the hands of Warring and his contest-minded West Sussex club mates, the model had become decidedly 'hot' and was in fact the typical 'paper bag filled with rubber' which so annoyed many English stalwarts of the period. Yet it retained several of the old features, such as the 'V' cutaway that so weakens the tailplane. The sparless construc-

tion of the stab was something of a throwback to the Twenties. It was weak, warp-prone and possessed no aerodynamic advantage, yet there it remains – a touch of 'character', like the useless running boards on VW Beetles.

Warring rightly claimed an average duration of 2.1/2 – 3min for the Percy III. Some modern vintage flyers may look askance at this figure, particularly since the Percy, with its 38.1/2in span, is sub-Wakefield in size and therefore theoretically sub-Wakefield in performance. However, it must be remember that Ron and his enthusiastic fellow-members of the West Sussex MAC were not hampered by dethermalizers in the establishment of high average flight times. Frequent fly-aways of six minutes and above did wonders in this department. Indeed, one of Ron's main troubles in evolving yet more potent variations on the Percy theme was that he never managed to keep a model long enough to evaluate it! Not that the Percy ever needed any mathematical juggling to establish its pedigree. Make no mistake, it was and is a great flyer. Mine certainly looks good for 2.1/2 min-plus, although so far, because of the limitations of Epsom Downs, I have had to set the Tomy DT at 90 seconds, top whack. But on contest turns it seems to get almost as high as my Lanzo Duplex, which is *quite* high.

As per – or not?

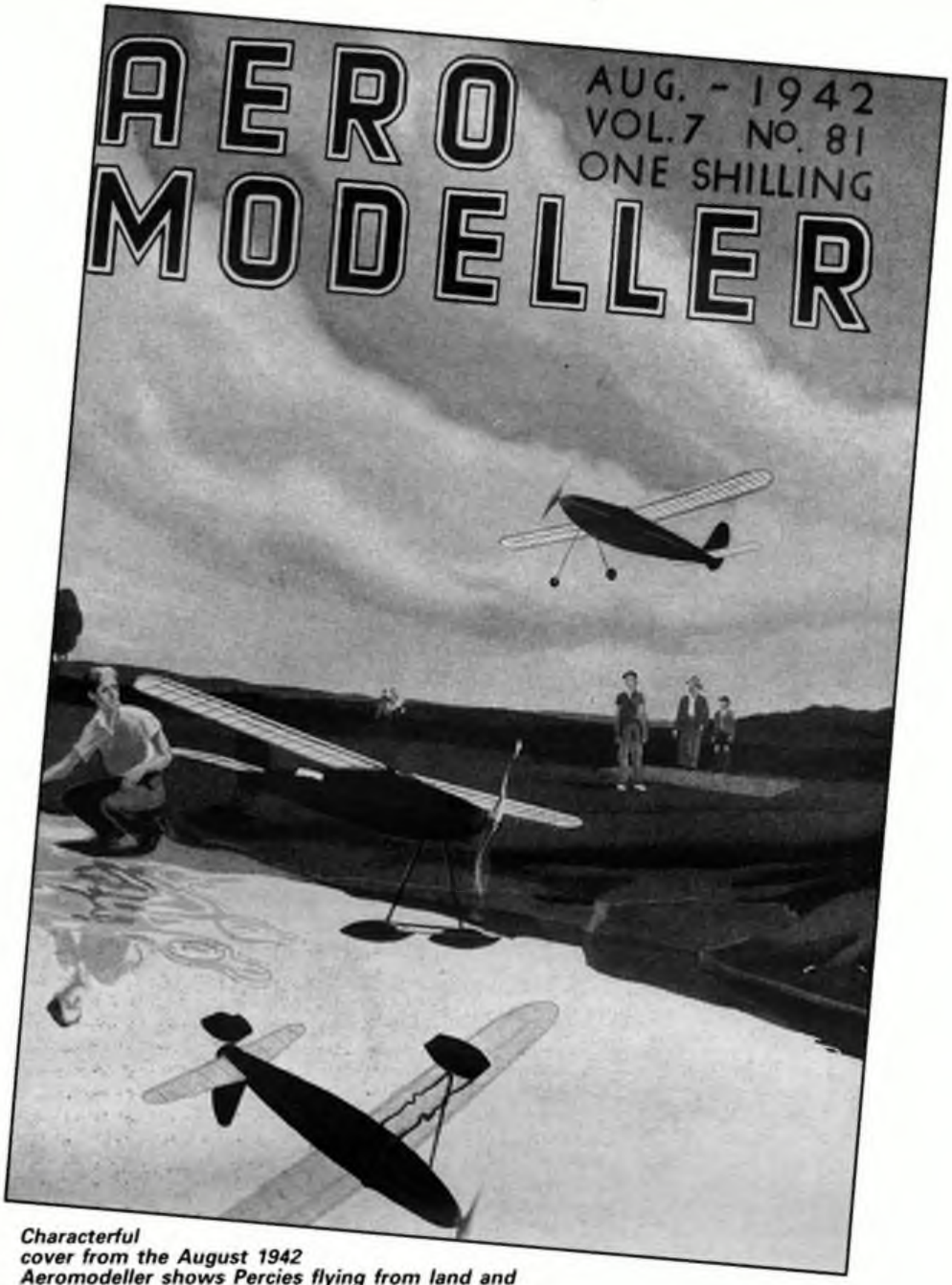
The present-day modeller could build a Percy III exactly as per plan and be rewarded with a thoroughly decent model – an ideal introduction, in fact, to vintage contest flying. However, there are one or two modifications that can be made in the light of current know-how which do not violate the vintage spirit and which makes things so much more practical.

The well-proportioned, no-nonsense fuselage could well stay as it is unless you want to tidy up the rear end for easier DT installation. This is best done by extending the line of the tailplane platform to the back of the fin and incorporating the down-and-under curve of the fin in the structure of the fuselage itself. With the fin cut square along this line the tail unit is nicely poised for pop-up DT action. All will be clear with a glance at the plan. The fin should, of course, be detachable from the tailplane. The method I chose was the one described by Dave Hipperson in Aeromodeller a while back for modifying the KK Senator. This utilises two 1/16in diameter bamboo pegs embedded in the fin and locating in rolled paper tubes in the tailplane centre section. For the Percy, the stab should have an extra panel of 1/32in sheet on the under side of the centre section to accommodate these tubes. The panel should also be wide enough to take small locating blocks to prevent sideways movement of the stab and fin unit.

The wing needs attention in two respects. The under-side location of the spar is annoying because it practically guarantees upward bowing, a constructional blemish that disfigures many vintage models. To re-position the spar in the top surface of the wing would be bad form, chaps! For a start, it is a visible alteration to the design and would therefore be very much frowned on by SAM 35. Worse, it would surely count as a turbulator, and you might be accused of cheating – and rightly so – should anyone pitch up at a contest, rule book in hand.

So... what to do? It seemed to me that the best approach was to change the cross-sectional area of the spar, making it 1/2 x 1/16in instead of 1/4 x 1/8in. This, with the one-inch spacing of the ribs, makes for a far stiffer structure. And, of course, the top of the spar is still not touching the covering.

A point here about those 1/32in ribs. It is most important to select light quarter-grain stock to resist buckling when the tissue tightens up. It is also well worthwhile paying particular attention to the overall length of each individual rib so it fits snugly into place, neither too slack nor too proud. But far and away the most important factor in the prevention of buckling is to make sure that the underside of each rib is thoroughly bonded to the tissue. The best way to do this is to cover the underside first, and then to apply clear dope on the *inside* wherever tissue touches rib..



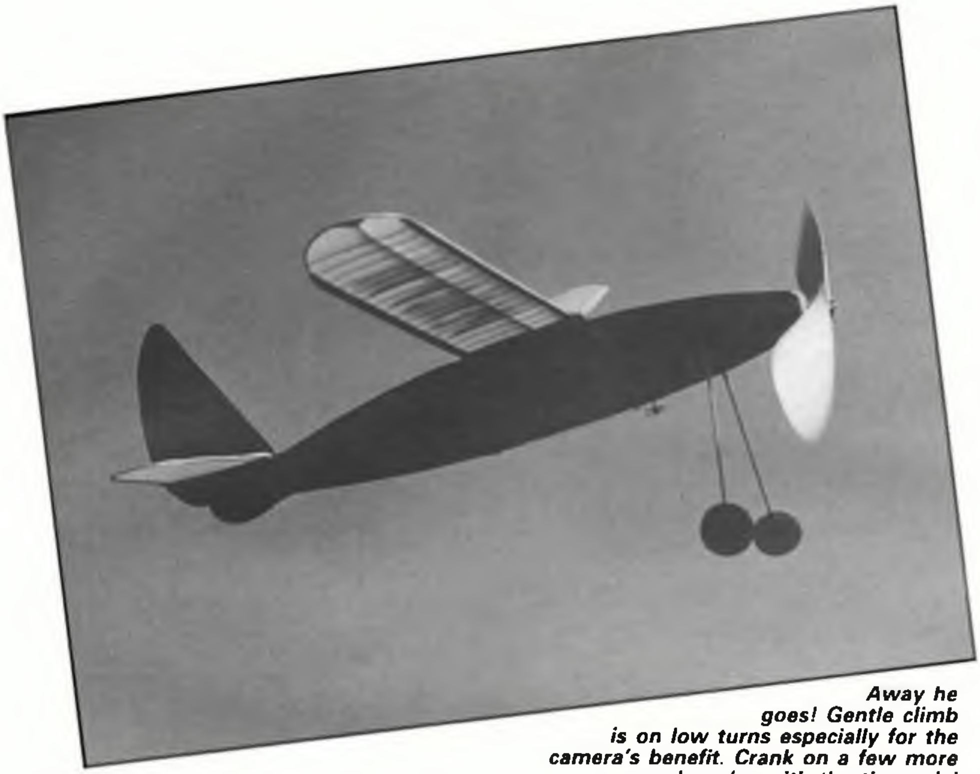
Characterful cover from the August 1942 Aeromodeller shows Percies flying from land and water. Fun for all – who'll try the floatplane version?

Deviation

The second deviation concerns the leading edge. The plan stipulates that it should be hollowed out – a tedious and largely pointless task denounced in recent years by Ron Warring himself! Shortly before his death a few summers back I met him at his beautiful home near Old Bosham harbour in Sussex, and during a long and fascinating conversation the subject of the Percy and similar models came up. Ron specifically mentioned the hollowed-out leading edges of the day as being a waste of time and effort. Everybody did them, he said, because it was the smart thing to do! So you have the word of the maestro on the subject. Just choose light, white stock and you will be laughing. That being so, you could well fix a thin ply dihedral brace to the back of the leading edge and thereby considerably strengthen the centre section.

It is my opinion that it is impossible to cover the sparless tailplane in the conventional way without considerable bowing and general warping. The thing to do here is to pre-water-shrink the tissue on a frame, spraying and drying at least three times to get as much 'shrink' out of it as possible. Cut the tissue from the frame and apply dry as best you may, finally giving a very thin coat of non-shrink dope or banana oil. I didn't go through this procedure (in an attempt to save time – and was 'rewarded' with a bowed tailplane with (luckily) equal washout on each tip. Not a pretty sight, and a permanent reminder of my impatience.

The large prop is undoubtedly the model's strongest point and no attempt should be made to alter its dimensions. For the life of me I can't see why anyone should, but so often you see models with skimpy non-standard props whose builders wonder why they won't fly properly! Ron used an 18swg shaft. But this is almost guaranteed to end in a rough landing, so substitute 16swg and be safe. The plan shows alternative nose-block set-ups, one for tensioned motors and one for spring-top tensioning.



Away he goes! Gentle climb is on low turns especially for the camera's benefit. Crank on a few more and you're with the thermals!

Please, please don't be tempted by the spring-top, with its wood screws and bits of 'gramophone spring'. It's doomed to failure, and even if it works for a little while it will almost certainly trap bunches in the rubber.

Aye, there's the hub...

The 'hubless' wheels are only for the purest of purists. They look very nice, but are a fiddle. And the text accompanying the original article infer that you can use the traditional hub fixing if you like. It says that the wheels may be of the hubless type 'if desired'. In any case, use 18swg for the axles and not the 20swg stipulated on the plan.

Covering? I used black lightweight Modelspan on the fuselage and white Jap tissue for the wings and stab. Silk would have been better for the fuselage. It is a bit on the expensive side, but SAM 35 rubber columnist Mike Kemp proved long ago that it is if anything lighter than doped tissue and is certainly far stronger. It can, in fact, withstand a motor burst on full turns, so it is well worth considering.

Close comparison between then and now is often quite fascinating. Dimensions do not change. Balsa is balsa. Piano wire is piano wire. Yet startling anomalies emerged when I contrasted the detailed weights of Warring's Percy III with my own. Admittedly, Ron was building to an FAI required all-up weight of 5.66oz, which is decidedly on the heavy side for a model of this modest size. But his prop assembly, for instance, which weighed exactly an ounce, was more than TWICE as heavy as my own (0.4oz). I used normal light block, as obtained from the model shop down the road, and my unit is if anything over-engineered, with ply plates, brass tubes within brass tubes, and a heavier gauge prop shaft. Most puzzling. All right, so Ron might have added ballast, although judging from the wing position shown on the plan, I strongly doubt it. But surely he would not have added lead weights to the bamboo undercarriage legs as well? His, at 0.4oz, were just twice as heavy as my own. Even on his Super-Lightweight Percy (not to FAI rules) his prop unit was 0.75oz. We can only conclude that Ron and his pals must have been getting to the very end of their pre-war supplies of useable balsa when the Percy III and its many stablemates were built.

Go fly!

With the model rigged exactly as shown on the plan, and with two degrees of sidethrust and three of downthrust already built in (I am a great believer in the Hipperson 'do your trimming at home' approach) no further adjustment was necessary apart from sliding the wing back 1/4in to cure a slight stall on the glide.

I chose an eight-strand 1/4in 'tan' FAI motor of 50 grammes (about 1.3/4oz) because two or three were to hand and the weight seemed about right for the job. Warring's motor weighed two ounces, so there wasn't much in it, and in any case lightweight models seem to go better on less rubber than more in my experience.

Progressing in the usual stages of 100 turns extra per flight, assuming all is well, the model, behaved perfectly in every respect, nosing up until virtually the last of the power turns to settle into a wide glide turn to the right. I reached 600 turns at which point I came across the first snag – front-end binding in the 1in. diameter winding tube. I really don't know what to do to get over this, apart from widening the front former to accommodate a wider tube, which would most certainly destroy the line of the fuselage. I would reckon to get 700-750 turns on such a motor, and those last 100 or so turns are really quite essential in contest terms. So I must brush up on my winding technique. If J.O'D can do it (and he can) so can we all! Mark you, on 600 turns the model is way up in thermal land and so far has shown no signs of coming down, apart from when the DT cuts in, so why grumble?

WEIGHTS

Uncovered:

	Own model	Warring's model
Fuselage	0.6oz	–
Wings	0.5oz	–
Prop assembly	0.4oz	1.0oz
Stab and fin	0.2oz	–
Undercarriage	0/2oz	0.4oz
Total1.9oz		

Covered:

	Own model	Warring's model
Fuselage	0.8oz	0.875oz
Wings	0.8oz	1.0oz
Prop assembly	0.4oz	1.0oz
Stab and fin	0.3oz	0.4oz
Undercarriage	0.2oz	0.4oz
Total2.5oz3.675oz		

Super-lightweight Percy

	Own model	Warring's model
Fuselage	–	0.75oz
Wings		0.75oz
Prop assembly		0.75oz
Stab and fin		0.375oz
Undercarriage		0.375oz
Total 3.0oz		

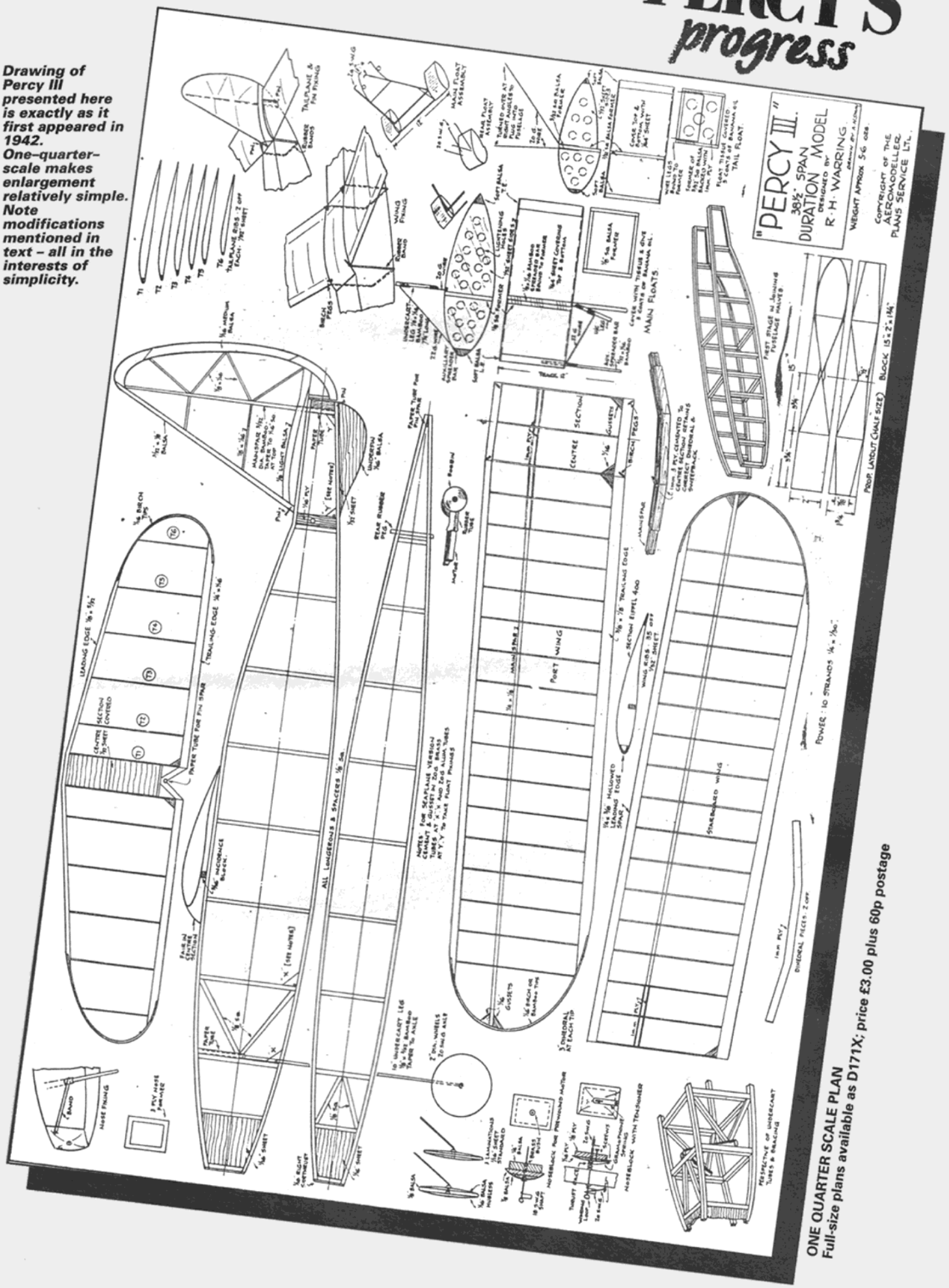
Motor: 1/4 (FAI Tan) x 50g x 8 strands.
Tensioning turns: 120

Trim: 2 degres right, 3 degrees downthrust.
Power/glide: right/right.

Structure is basically simple, so get it accurate for trouble-free flights...

PERCY'S progress

Drawing of Percy III presented here is exactly as it first appeared in 1942. One-quarter-scale makes enlargement relatively simple. Note modifications mentioned in text – all in the interests of simplicity.



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FREE FLIGHT SCENE

Dave Hipperson samples the delights of Woodbury Common...

EACH year the Bristol and West Club's Woodbury Weekend attracts more and more enthusiasts. Accordingly, Castle Brake Park, where most stay, seems to expand to accommodate them. Attendance is always good. This year the numbers were turned into real entries thanks to the midsummer weather. Not bad for early May.

The first day, Saturday (the evening of which was set aside for the Champagne flyoffs) was very hot and quite calm; 80 degrees with a 5-10mph breeze. Fortunately a cooler but very light drift from the sea reduced thermal activity for the actual contest flights. Lift became quite light and short-lived, so the expected flyaways were avoided and times were sensible.

First off!

After a greeting from Elton Drew, CD for Saturday evening, vintage was first off at 6pm. Strachan's early flight with his Lanzo Stick was actually bettered by Hipperson's four-ounce Lanzo Wake flown seconds later. This year Hipperson's flight was good enough to lift the Overall prize as well as Best Wakefield.

Power saw the favourite, Russell Peers, suffer a timer failure on launch. The flood-off released instantly so, miraculously, the .40 model gained insufficient height to damage itself from the resulting stall-in. A further second of engine run and the model could have been seriously damaged. Shortly after this Pete Harris got away and was gliding well; but after a little trouble with his motor Phil Ball launched late with his Slow Open model and topped the lot. Flights were heading towards the nearest wood, the high copse on top of the ridge only half-a-mile away, but drift was so light that few of these early flights reached it. Only Hipperson's Lanzo hung from the trees on the edge.

Rubber could have been a very expensive event, given the warm Common. However, lift died completely – many models making quite promising climbs and then sinking faster than usual on the glide. Jim Baguley's seven-minutes-plus was comfortable enough to top the fifteen or so competitors who flew. Lee and Grey

Above: Return of a maestro. Ed Bennett renews his acquaintance with Alan Parker and Nigel Lee after a forty-year break!
Left: Russell Peers pays close attention as Dave Greaves checks his Wake; John Buskell ponders at right. Copse in background was the inspiration for Dave Greaves's artwork on his engraved marble awards.

Left: Yankee IV's were popular – it's probably the most consistent 8 oz Wakefield design in existence. Below: Chris Strachan, a regular Vintage winner, took the class on Sunday.

(both coincidentally, clubmates from Ashdown Forest) tied at 6:27 for second place. Normally this would have been irrelevant, but at B&W events even the Champagne flyoffs pay out down to third place! As there is some friendly rivalry between these two they readily agreed to fly again.

Before this Baguley came out again with a three-minute-plus flight in the Champagne Glider flyoff. When Jim is 'cooking' everyone else might as well give up. Understandably this class was much less well contested because of the difficulties inherent in towing on the Common despite the comparative civilisation of the small, mowed-grass area we were using on this particular corner.

The evening's finale was therefore Lee and Grey's decider for their tie in the Rubber flyoff, although drift on the ground felt almost zero, the models moved quickly in buoyant air – and in a different direction to earlier flights. Despite this being the longest 'angle' across the Common their owners were taken slightly unawares. The models were out overnight, and only Trevor Grey's was found in the morning. NigelLee's decider actually exceeded the overall winning time, once again underlining the importance of choosing good air. Flying later does not necessarily mean less lift, or less drift.

Phil Ball took overall Power/Slow Open Power Champagne fly off with this now well-proven (and compact) diesel-powered craft.

Sunday, Sunday

The main activities on Sunday were blessed with clear skies, scorching, continual sunshine and temperature in the eighties – but with a breeze of sometimes 15mph. As usual in such conditions, lift was vicious, particularly early on. There were fewer entries and poorer performance in Glider than would usually be expected. The launch area of thick, if short, gorse (where it wasn't very uneven grass and heather) was taking its toll. Roger's winning full score was made with an Aquarius A/2 kit design. The remaining three classes required small flyoffs which were all flown together soon after 6pm. The drift was a firm 15mph at altitude, but it was still very sunny.

Jim Baguley's early Rubber flight caught little help but it coincided with a smooth, none-too-fast-moving patch of air, giving him his third win in two days! Subsequent Rubber flights travelled nearly as far in quicker time, but fared less well, most suffering stalls on the glide over the undulating terrain. Chris Strachan also got away promptly in Vintage. This time his Lanzo won by a wide margin with a time that would have earned a place in Open Rubber. Russell Peers waited for his opponent, Willis, to fly first in Power; after he had managed little over two minutes Russell cut his run to be safe. It spoiled the big model's pull-out but the air was good for a comfortable three minutes (had it not D/Td).

That evening's entertainment was, of course, the party and prizegiving in the new and larger facilities at Castle Brake Park. Gerry Pink was back in command of the prizegiving but George Fuller handled the raffle. These two showmen ensured that all who attended had a good time. Prizes were very attractive marble plaques, hand-crafted by Dave Greaves and featuring a Woodbury Copse motif – a great deal of work for him beforehand, backed up by a capable team of B&W members on the field, organising the first two days.

The evening's rapidly-dropping temperatures suggested a deterioration in weather for the next day. Indeed, high winds were forecast. The early-morning mist which did appear thus portended well for the day. FAI events began at 8am, at which time the weather was probably as difficult, and as windy, as it ever would be. Certainly the lift was very deceptive; most the dropped flights happened at this time. Then, contrary to the forecast, the windspeed settled at around 10mph (sometimes less in the lift) and it even swung around a little to the west, allowing flight along the longest dimension of the Common.

Glider flying seemed very consistent, unlike the previous days. Lift was being well chosen, and by the fifth round two fliers had full scores. Paul Rowledge's full house in F1C had emerged as the possible top score after others had dropped away early, but no-one managed a full house in F1B. Indeed, only two maxed on the first round; from then on it was downhill in more senses than one!

Swinging

Soon after the start of the final round the wind suddenly swung round to the south-west, taking models straight towards some very dense woods. Those who got away early were lucky. Peers maxed just in front of the trees and topped F1B – a score spoiled only by a short flight that fell out of lift in the second round. Rod Audley also contacted good air but dumped the model in the woods. In effect, this wind shift fragmented and diluted what should have been an exciting ending to a good day. This is the problem inherent in running any event to long rounds. Fortunately the launch area rules were flexible enough to allow Peter Tribe to move to the other side of the Common to fly on his own. He still managed to max despite the upheaval. Very impressive contest nerves!

The wind maintained this unhelpful direction for quite a while so it was necessary to stay put for the flyoffs. This caused something of an anti-climax for the audience was greatly reduced.

Russell Peers confers with CD Elton Drew moments before catastrophic timer failure in Champagne fly off.

Pete Tribes launched first under a brooding, blackening sky in very calm air. His A/2 was clearly in strong, smooth lift. For some reason Rod Audley didn't chase this – but Paul Rowledge did. His F1C made a satisfactory climb with a hesitant transition into a left glide. He had been having trouble with the auto-rudder during the day and therefore opted to leave it in the 'power' position. However, this time the model looked decidedly tight on the glide; and in combination with growing thermal speed the model began to wind in, rather than up. When it finally forced itself out of the bottom of the thermal the aeroplane looked decidely under-elevated. It was down in a little over three minutes. On the other hand, Tribe was having a colossal flyaway at many hundreds of feet. He D/Td at over seven minutes within a few yards of a path through the woods! Rod Audley then declined to fly as the drift had begun to swing back towards the very near conifer plantation, leaving him with the option of having to *probably* lose the model to win, or *definitely* lose it if he made a short flight. Given the cooler conditions and the size of the thermal that had just passed him by, he made the right decision to settle for third place.

The main body of the organisation had caught up by this time and was able to put on the usual 'field' prizegiving for the Combined FAI event where an individual award was made to the top three, plus the highest in each discipline. More Dave Greaves marbleware.

Extraordinary

This was quite certainly the calmest, warmest and driest Woodbury yet. Thanks to great care (and widespread use of the Tomy timer) there were no accidents with fire. As a footnote, an extraordinary coincidence cannot go unrecorded. Someone whom we had all taken to be a non-aeromodelling resident of the Park turned out to be none other than Ed Bennett – Mr Thin Man himself. He had stayed regularly at the Park for the past five years but had no idea that it had originally been Alan Parker's Caravan Park, despite knowing Alan, for his visits started only after Alan sold up. His eyes lit at the mention of John O'Donnell – and it wasn't long before he was out on the field despite an appointment elsewhere. The Vintage fraternity obviously had a lot to ask him; it is inconceivable that SAM, being who and what they are, don't tempt Ed out flying again. They got his address! It was good to see him meet Nigel Lee as these two had not seen each other for forty years. Ed Bennett, the man who virtually invented the 300sq in Open Rubber model, looks fit enough to do a lot more flying.

Phil Ball spent FAI Day practicing with new F1C models. Very spectacular with fast climb. Carbon-and-fibre wing features flaps and bunt mechanism. Anthony had a good weekend too with his neat, foam A/2.

Bristol & West Woodbury Weekend

Saturday: Champagne Flyoffs (in order)

Vintage (11 flew)

1	D. Hipperson	5:26
2	R. Alban	4:16
3	C. Strachan	4:05

Power (including Slow Open Rules: 17 flew)

1	P. Ball	4:45
2	P. Harris	4:36
3	A. Hall	4:27

Rubber (15 flew)

1	J. Baguley	7:02
2	N. Lee	6:27 + 8:04
3	T. Grey	6:27 + 7:12

Glider (4 flew)

1	J. Baguley	3:04
2	A. Ball	2:43
3	R. Audley	2:39

Sunday: Open Events (all 2:30 max)

Open Glider (11 flew)

1	S. Rogers	7:30
2	R. Audley	6:01
3	A Ball	5:58

Open Rubber (18 flew)

1	J. Baguley	7:30 + 6:119
2	R. Pullen	7:30 + 4:43
3	J. O'Donnell	7:30 + 4:17

Open Power (10 flew)

1	R. Peers	7:30 + 2:45
2	S. Willis	7:30 + 2:03
3	R. Johnson	7:30

Vintage (22 flew)

1	C. Strachan	7:30 + 5:07
2	D. Beales	7:30 + 2:12
3	J. Leitch	7:30 + 0:33

Monday – Combined FAI (5x2:30)

1	P. Tribe	15:00 + 7:55 F1A
2	P. Rowledge	15:00 + 3:02 F1C
3	R. Audley	15:00

Top F1B: R. Peers 14:20

BALSA CUTTINGS

More nosing around matters of aeronautical moment with Cyano de Bergerac

Basics

The front page of the February New Model Flyer carries a computer-generated image of the BMFA's new Leicester office. Is it not odd how some people can dither about all day and still not get it right, whilst others know at once exactly what is wanted. Like a computer-generated image of the BMFA's new Leicester office.

Respecting those promises, the Natbod Chairman writes that therein there finds itself a large area eventually to be used for Council Meetings, which requires extensive refurbishment. 'We are open to offers of sponsorship for this'. Cheerfully running the risk of being called something dreadful like an interfering self-appointed watchdog of the BMFA's financial morals, this column would like to ask of that institution – 'What on earth do you want a sponsor for?'.

Drug abuse

Under this heading the BMFA reported that a proposal banning the taking of performance-enhancing drugs was put off until the March council meeting. This is an urgent and serious matter which should have been dealt with at once. Only last week there was this modeller with a Junior 60 going up like a rocket on a .5cc Dart, and we all know what *he* was up to. Biodegradable undercarriages for lost models is something else we should be talking about – oh, and user-friendly propellers as well.

Rabbit fails to score

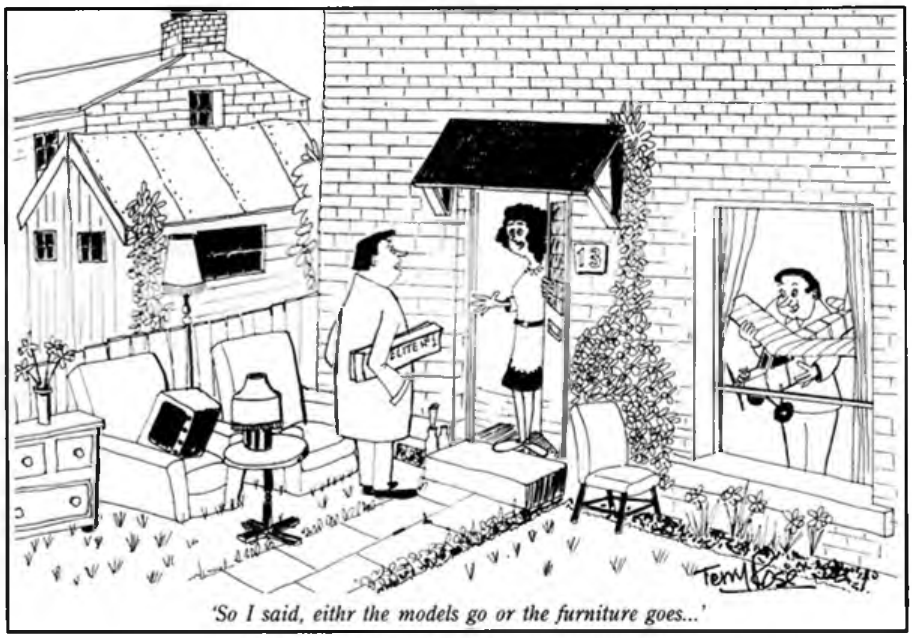
The virtues of plastic film as a covering material rightly attract many claims, but here's one you haven't found before. Models were parked along one side of the field when a rabbit came scooting through the hedge, throttle wide open jest as though his behind wur afire. There can't be many of you who haven't at some time held a rabbit, so there can't be many of you who don't know they can kick like no tomorrow and come equipped with very nasty track boots which can unzip your forearm soon as look at you. Loose soil flew everywhere. This rabbit ran like stink halfway along the wing of a big glider, and – not a mark! As well as everything else, film is rabbit-proof!

Well, nearly everything else. When a sad old twice-size Fugitive came down out of the loft last month, it turned out that film isn't mouse-proof.

Anyone for menace?

Several times – twice just lately – there have arisen from amongst the tents of the Righteous sad murmurings that they would *so* like to make a noise quietly, but oh – the price of noise meters! two or three hundred quid for one that's any good. More than the average club could possibly afford. As Lieutenant the Duke of Dunstable said, 'Weep, weep, all weep'.

Lissen, kiddo, to de Bergerac's First Law of Lost Facilities. It states – 'If you are making so much racket that you need a little black box to tell you whether you are making too much racket, then you are making too much racket.' The Second Law states that any club which comes over all soppy at the thought of parting from the price of a Saito FA90 Twin to preserve its flying field cannot, as the famous man with the other kind of racket said, be serious.



'So I said, eithr the models go or the furniture goes...'

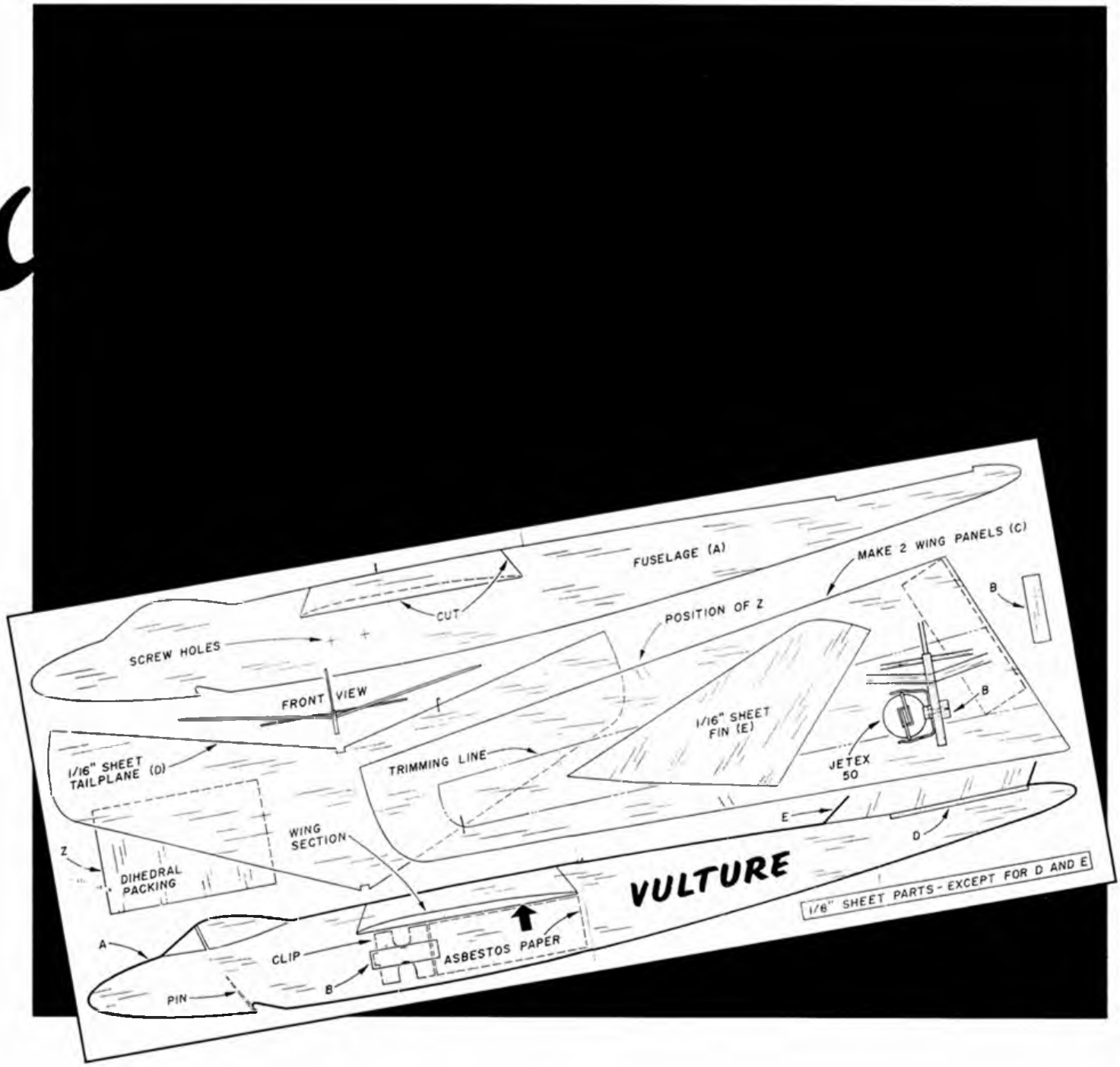
Frontiers of knowledge

The fact that since the days of Sir George Cayley (d.1857) advances in aerotech thinking have been made by modellers rather than the full-size brigade has never been better illustrated than now, with the publication of the Deferred Disaster Theory. This concerns a phenomenum under observation by aeromodellers everywhere for many years, which is characterised by a model being involved in a seemingly violent crash but suffering little or no damage, giving rise to the question 'Jammy b, how did you get away with that?'

Well, according to a growing belief at last put into intelligible form by Dr.. Ing. Gottlieb Hauptmann, you *didn't* get away with it. Writing in the latest issue of Flugelsprecher, the newsletter of Dora-Kurfurst Modelflieger Club, he explains that whilst the mathematics are formidable, the basic fact is easy to grasp – velocity, like other forms of energy, can be captured, and in some instances, chance can cause destructive crash-forced to be deflected along as yet not-understood paths into storage within the basic airframe. This charge of energy, which had it not been trapped might easily have wiped out the model altogether, will remain within the envelope of the stress-carrying structure, endowing it with a Compressed Velocity Factor which in some cases can actually be calculated. Accidental discharge of this stored energy can be terminal for the model, which under the massive release vacuum usually suffers total mechanical failure of principal members. This is called Exokinetic Implosion, which supersedes more primitive diagnoses such as Towing Too Fast, Tail Not Fixed On and I Told You That Rubber Was No Good. Any model which escapes a hard prang with seemingly little harm should be handled with extreme caution until it can be relieved of the dormant Velocity Element by controlled draining, known simply s Potential Dissipation. This can be done by attaching wires – ordinary low-resistance household flex will do – to the nose and tail, and connecting the other ends to a 12-volt car bulb. To induce current to flow, and burn out the stored energy in the form of flight, it is only necessary to introduce an AA cell into the circuit, ensuring that the positive pole is towards the nose. For canards of course it should be the other way round.

Liter-ally too much

It has previously been observed here that slope-soarers are the lyingest form of aeromodelling life. 'Where I fly, off the cliffs near Lynmouth,' says this guy, 'the wind blows so hard that the very ground trembles. To get a launch you have to crawl to the edge on your hands and knees, then hurl her into the spray being thrown up off the rocks a thousand feet below.' Says the other one modestly, 'Oh dear, we could niver handle that! Wheniver we're flying back in Connemara and the New York newspapers that blow across start turning up with that morning's data on them, we pack up and go home.'



IT'S generally agreed that 1948 was a golden year in aeromodelling – control-line aerobatics n its exciting infancy, Eaton Bray in full swing, the small diesel revolutionising free-flight power, a few visionaries experimenting with radio. It seemed tat every *street*, let alone every town, had a modelflying club. I was three years old then, but it was a golden year for me too; my father, who was an aviation enthusiast but not a modeller, made me a tiny chuck-glider from a one-and-threepenny kit. I still have a photograph he took of me a few seconds after the first time I broke it. That was the last model he ever had to make for me.

By the time I was eight, things had progressed somewhat. I was building my own chuck-gliders and small, all-sheet rubber models. I well remember the thrill, one calm May morning, of making a perfect launch with a perfectly-trimmed KeilKraft Vega and being rewarded with a beautiful circling flight of what seemed like two or three minutes! duration. I imagine it was really about fifteen seconds.

After that, I began to lose interest in chuck-gliders. I think I believed I'd mastered them and had nothing left to achieve. Rubber was a possible area for exploration, but the poor design of the plastic props of the time, coupled with my inability to carve a noseblock, rather turned me off. I wanted *power*, but even the smallest, cheapest at diesel was well out of my price range. There was but one option available.

Marvellous

My first Jetex motor came as a Christmas present in 1953. It was the original ribbed-case 50, in a beautiful yellow, black, red and white box complete with fuel, wick, clip, spare gauzes and washers and a piece of 17 swg wire for cleaning the jet nozzle. It was the first piece of real aeromodelling hardware I'd ever owned, and I saw a great big marvellous world of flight opening out before me.

I had no trouble deciding which model to build. Farnborough lay only a few miles away, and my father had taken me to every SBAC show since 1950. So I was in love with the Hawker Hunter. Then as now, I considered it the only aircraft I had ever seen whose lines were truly perfect, and with naive optimism, I purchased a three-and-sixpenny KeilKraft kit.

Today, I could make a neat job of that Albert E. Hatfull design. It might even fly, though I guarantee nothing. In those days, I stood no chance, and the model was never completed. A short time later, I got the idea that the Avro 707 in the same series might be easier to make and, remarkably, I was right. The model was finished in less than a week. It was covered with the kit tissue, applied with tissue paste squeezed straight from the tube. Then it had one coat of full-strength clear dope and one of blood-red acetate colour dope, also full-strength. I mounted the motor, and went off to fly.

I remember that it was a frosty Saturday morning, and I'd gone out to fly alone. I expect I'd anticipated what was going to happen, somehow, I managed to light the fuse without setting fire to the model, and waited as long as I could for the thrust to build up. Then, a smooth gliding launch and for about two seconds the incredulous feeling that success was mine. It wasn't though: the nose went inexorably up, the overweight model flopped onto its back and dived straight in, crushing the nose and popping the motor free from the clip. I saw it bounce high, twisting in the air and shooting

away in an arc to bury itself, smoking and steaming, in a frosted tussock. I was relieved to realise that a Jetex motor would be a difficult thing to lose.

Saucer resources

The day was young enough, and my resources sufficient, for me to go down to the local model shop and buy something a little more sensible. What I came back with was a curious little flying saucer, made, I think, by one of the smaller and more obscure kit manufacturers. It had a tissue-covered wing with only about four ribs, and a vestigial fuselage of solid balsa. It was simple to build, and I had the sense to restrict colour dope to the fuselage alone. The Jetex 50 was mounted on top of the fuselage nose, the idea presumably being that the weight of the full motor would assist the downthrust action of the high mounting and hold the nose down under power.

It may have seemed like a good idea, but it didn't work. The next Saturday morning, alone again, I flew the thing. Just like the Avro, it looped straight out of my hand; but unlike the Avro, it was light enough to gain a little height and flew a marvellous pattern of consecutive loops, getting tighter and faster as the thrust increased, until the fuel pellet burned out and it fluttered back to earth. I suppose I might have trimmed it to fly properly, but it gave me so much fun as it was that I kept on until I'd used up all my fuel pellets. The model survived another couple of outings, until eventually it looped into the branches of a beech tree and was shredded beyond repair.

Try again

Months passed before I got up enough enthusiasm to try again. It was another Hunter this time, and this time it was finished; but I don't think it had ever occurred to me that a poorly-built wing of such light structure was almost bound to warp, and I was both surprised and disappointed when the Hunter refused to do anything but roll straight into the ground a second or so after launch.

Three or four such arrivals saw the model too damaged to be repaired. i thought again, and tried a KeilKraft Skyjet 50. Slightly more success this time; the wing was only faintly warped, and the model would travel about fifty feet before the inevitable spiral dive. Disillusioned, I went back to rubber, improving my building and covering techniques with a whole flock of Frog Senior series sportster – good value at four-and-six pence, and what beautiful soft balsa those kits used to contain! What's happened to wood like that?

It was good old Bill Dean who came to my rescue at last, through the medium of a Christmas present from my parents called the Eagle Book of Balsa Models. At last, I found what I'd been looking for: a way to fly Jetex that lay within my capabilities. One of the models in the book was called the Vulture, and it was virtually a chuck-glider with a Jetex 50 screwed to the fuselage side just beneath the wing. I knew I could build it with perfect ease: better still, it looked very much like a Hunter. The only trouble I had was convincing myself that such a simple device could possibly fly – after all, weren't Jetex models supposed to be built of the thinnest, flimsiest balsa arranged in the most elaborate conceivable way? How could three bits of eight sheet and two of sixteenth actually work? Perhaps that was why it took me until the summer to get round to throwing one together.

The first flight took place on one of those glorious golden summer evenings we all remember from our childhood. I wasn't alone this time: my father came with me, and so did my sister, who was two years older than I was and could be rather crushing in a variety of subtle ways. I simply couldn't afford a debacle in front of her.

Test glides with the unloaded motor in place showed a gentle left turn – perfect. The motor was loaded, and the big moment had arrived; by now, I was adept at the Jetex juggling trick, holding the model and the matchbox in the left hand, striking the match with the right. Light the fuse, drop the match, stand by to nip the copper core of the fuse between the fingernails and pull it free if it didn't eject by itself. Then deftly transfer the model to the right hand for launching.

Success!

A smooth gliding launch, with a little right bank. Not enough: the model straightened up and climbed into the usual fatal loop. I waited for the crash; but the light, simple structure had little drag and plenty of wing area to get it safely round. It shot past me at knee height, hissing furiously, and went into another steep climb: but this time, the thrust of the asymmetrically-mounted motor pushed it round into a spiral and it went up like a pylon model until it was tiny overhead, the bare balsa glowing orange in the evening sun. The climb didn't stop until the thrust, peaking in the last couple of seconds of the burn, forced the model into a vertical bank from which it abruptly rolled into the 'floating glide' promised in the book. The left turn I'd noticed during test glides was exactly what was required – circles about a hundred feet across, which, on this almost windless evening, kept the model well within the available space. There were trees two hundred yards downwind, a whole avenue of them fifty yards to the right, and one big old dead beech all by itself less than a hundred yards from the launch point: on its final circuit before touchdown, the Vulture flirted with its gaunt branches, but all was well. Two milestones had been reached in my life: I had achieved a real flight at last, and had succeeded in visibly impressing my sister. I mentioned the flight to her the other day, and she remembered it clearly.

She also remembered an even better flight with the same model the next Sunday afternoon at Lasham aerodrome. Another warm sunny day, but with a fresh breeze.; another steep spiral climb, and another long, floating glide with, I suspect, a little thermal assistance. It had occurred to nobody to time it, but it must have been a good two minutes. The model was retrieved undamaged from the edge of a cornfield; and while I was doing that, taking great care not to trample any of the corn, my father and uncle were picking bluebells from the adjacent wood – which was carpetted with them – to take back to their wives.

Thus, the door had been unlocked. The mystery was solved. Jetex was easy, Jetex was rewarding, Jetex was *fun*. No more stringers, no tissue covering and heartbreaking failures after long effort. For a while, I thought the only solid balsa model that would fly with Jetex was the Vulture; but one day, greatly daring, I took one of those strange little KeilKraft tailless chuck gliders, the Spook, and screwed a Jetex clip straight into the centre-line of the wing, above the CG, driving the little quarter-inch screws into hold I'd made with a compass-point through the 'cement skin' Bill Dean always mentioned on his plans. The first flight was, if anything, better than the Vulture's: the high thrustline damped out any looping tendency and, although the climb wasn't quite as spectacular, it seemed to gain just as much height and to glide every bit as well. The model took half-an-hour to find, that time. This added to my pleasure. Real aeromodellers often had to search for lost models, didn't they?

Here's a Jetex model with a difference – Bob Moggeridge's airship! News of performance eagerly awaited...

More, more!

Almost as good as the Spook was the Frog Wasp, a little swept-wing chuckie that lacked the wing area for a good climb but would fly round the school playing-fields in the lunch-

Continued overleaf

Jetex Days

Continued from previous page

hour at fifty feet or so. My friend Keith had one with an Atom 35 that would do a single wide circle round the cricket pitch and land practically back at your feet. We used to stick Jetex motors onto anything after that – own-design chuck gliders, converted small rubber models, anything at all. The wildest game of all was the rocket-along-the-line trick: we found a valley with two clumps of pine trees on opposite slopes, and strung two hundred yards of fine copper wire (from an old transformer) between them. Our rocket ships, some with annular wings and all brightly painted, were fitted with wire loops fore-and-aft to hook over the wire, and would cross those two hundred yards in less than five seconds. I once calculated that they must have been doing close to 120mph when they hit the far tree and smashed themselves to smithereens! The high mortality rate (in models) and the fact that the copper wire kept breaking under its own weight soon put an end to that phase, but it was fun while it lasted.

We used a number of motors; Atom 35 and 50b mostly, though the old ribbed-case 50 always seemed the most reliable, the 50b having the bad habit of failing to ignore or, alternatively, blocking its jet despite all attempts to pull the wick core free after ignition. Wick quality was maddeningly variable, and so was fuel: it was a sad day for me when the original ICI fuel in white cardboard boxes disappeared and was replaced by less satisfactory pellets in tins. The old stuff had always ignited easily and burned to a fluffy greenish ash that, at the end of a day's flying, could be scrubbed away with hot soapy water and one of my discarded kiddie-size toothbrushes. I once tried some stuff called 'V-Max', but it was dreadful – unreliable and very hot-burning. It ruined a good 50b.

My Jetex phase lasted about five years in all: but the writing was on the wall right from the start, because the real reason for going to Lasham that first Sunday was to fly the Keil-Kraft Champ I'd just built. In the event, the clapped-out second-hand ED Bee couldn't be made to start, and the Jetex model saved the day as far as my prestige was concerned; but as time went on I acquired more skill and better engines, and the beautiful new AM15 bought with the proceeds of a summer job in 1958 effectively ended my interest in anything except control-line aerobatics.

University blues

My last Jetex flight took place in the summer of 1966. I was at university then, with no time or room for model aircraft; until one dreary period of a few days when it seemed everyone I knew was away on holiday and I was stuck in a summer job trying to earn enough for the good new acoustic guitar I'd set my heart on. I was bored and depressed; and pottering about my bedroom one evening, I came across a tobacco tin containing that original ribbed-case 50, a few fuel pellets and a couple of inches of wick. At the bottom of a cupboard I found my balsa scrap-box, with enough pieces of eighth and sixteenth sheet for another Vulture. The book with the plan in it had long since disappeared, but I could remember more or less what the measurements were – I'd built enough examples of the design over the years. I had no cement, but there was plenty of PVA and I'd grown patient enough to wait for it to dry. I quickly cut, sanded and glued together a model that looked something like the Vultures of old; and all the next day at work, as I stacked boxes of baked beans and soap powder n shelves in the local cash-and-carry, I prayed that the weather would stay fine.

It did. At seven o'clock, I took model, motor, matches and a wad of Plasticine up into the Park, to the exact same spot from which I'd launched my first Vulture all those years ago. Test glide, trim for a trace of left turn, light he fuse, and launch gently into what little wind there was.

And this was when I realised that the years had taken their toll of that faithful old motor. The jet, oversized with continual reaming, produced nothing like the thrust of the old days. perhaps the fuel was stale as well. Whatever the reason, there was no fierce spiral climb; just a steady ascent, dead into wind and dead straight, aiming towards a thick, impenetrable wood a few hundred yards away. I watched it until it was nearly out of sight, tracking it by the faint smoke-trail and hoping that when it settled into the glide I should get a better view. Then, just as I was wondering why the motor hadn't stopped, the model reared up in an inexplicable stall, dropped a wing, turned, and glided straight back towards me. Not the merest trace of a turn. I watched, entranced, until it scuffed down onto the grass a few paces away from me. I picked it up, took it home, and went out for a celebratory beer.

Somehow, I was glad that my last Jetex flight, like my first failed attempt, had been made alone.

(Years ago your editor built and flew a Vulture. Even when hampered by coats of enamel – camouflage, of course! – performance was healthy. GC).

High potential

More on electrics for free flight and control line with Chris Coote

FIRSTLY this month a couple of apologies for non-appearance of photographs mentioned in previous articles. Due to the vagaries of the film processor I use, one of the rolls was mislaid for a time! Fortunately it was found and so I thought it was worthwhile to show the pictures of the blade fuses mentioned in the April article, together with a shot of the field charger which I use with its clockwork delay timer fitted. Just to show how compact the black fuses

Heading: Our columnist's Demoiselle-style model for KP 01 power. Plans to appear soon (OK, Chris?). Left: Ten dollars worth of Stateside screwdriver contains 380-type motor with resistor and diode for mains charging. Look out for them!

can be, look at the installation shot of the C/L profile model featured in the small 3-view in the May issue.

The photograph clearly shows the fuse held simply beneath a rubber band retaining the battery pack. The completed model with its red colour scheme and dramatic black crosses on white backgrounds is quite a show stopper, especially indoors. The photographs show the 'lightweight' installation using the geared 260 size motor (H742 from American VL Company) with four 270mAh cells.

This gives a sprightly performance at only 195gm AUW ready-to-fly on 30ft lines, although not quite enough power for aerobatics. For this you need to use a 360 size motor such as the Highline Imp or Astro 02 (if you can find an old one!) and four cells, again of around 270mAh capacity.

Whilst on the subject of control-line, I have flown lots of models with electric motors very successfully in this way, but usually with the battery pack carried in the model. At first sight this seems a little odd since the natural thought

with wires is to run the power down them from the pilot's end, and thus save weight in the model.

This is of course how you fly electric RTP models – so why not for C/L? My main objection to lines carrying power is the excessive diameter of such lines required to carry the rather large currents required for satisfactory flight performance. Large line diameter means high drag, which is the quickest way to destroy performance of a C/L model with a limited motor power output.

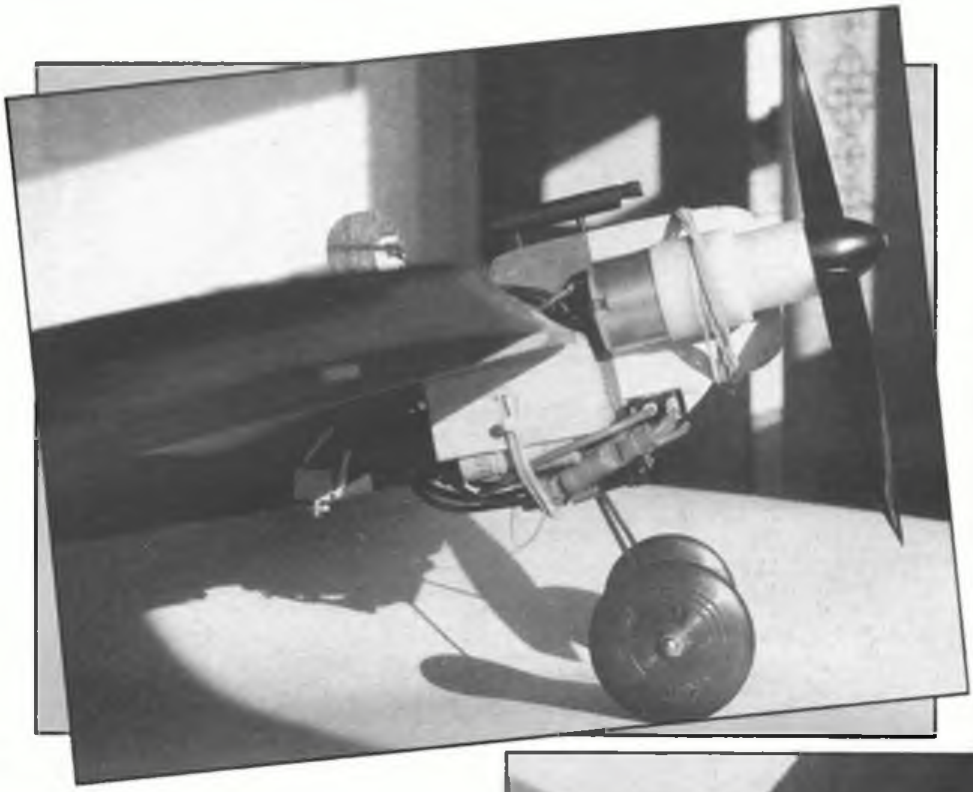
As I have stated before, electric flight means making the best use of a fairly marginal power source, and thick wires on a C/L model is a definite non-starter as far as I am concerned. I have flown very small and lightweight converted RTP models, but even these need something like 26swg wire and lots of volts at the handle end (24 volts in my case for only 20ft lines and a current drain of 3-5amps). Imagine the sort of barge rope and huge battery pack you would have to use to achieve 10-15amps as the model or a 10 volt motor!

It's all proportional

Remember that the voltage required varies in direct proportion to the current required and the resistance of the wires [volts = I(amps) x R (resistance) in ohm] and that wire resistance is proportional to the square of its diameter and directly to its length. I did once try to fly a '380' engined model on 22swg single strand copper lines.

Trouble was that line tension was insufficient

Left: Straightforward field charger. See May issue for more details.



Fokker Eindekker control-liner is derived from a thirty-year-old Aeromodeller free plan. 7.5amp blade fuses protect motor. Last month's High Potential featured details of this model. Not enough electric C/L seen. Let's have more news!

to iron out the bends and such-like in the very stiff wires. Control was non-existent even at very high flight speeds. It was like trying to fly on a couple of bent rods, with the bends varying as the model slowed down, say in the climb, giving spurious elevator movements. Once you get into the realms of powerful motors, then the current carrying capacity of the wires becomes very critical, as does the necessity for a very low resistance method of connecting the wires to the model (and thus motor).

The large current implies a large battery source voltage to overcome the excess resistance – all this ends up with a very expensive, and heavy, battery requirement at the handle end. So, as you can probably gather from all this, I am not at all keen on the 'power down the wires' solution, except for very light and therefore low power indoor type models.

For any practical electric C/L model capable of flying in a bit of a breeze, I think it is essential to carry the flight battery in the model and use conventional thin steel control wires.

Hack

Modern nicads and high efficiency geared motors are readily available for R/C models, and make excellent units for the higher power generally needed in control line models.

As regular readers of this column will know, I tend to use an old C/L hack as a testbed for new electric systems. I reason that if a combination of motor/prop/battery will lift a C/L model together with overcoming the drag of the control wires, then it should give a sparkling performance in a suitable F/F model. This theory has been verified in practice with numerous combinations of electric flight systems.

In fact, so encouraged was I by the last test of the MFA 02 geared unit (see last month's article for review of this excellent motor) that I have started to build a stunt/sports model specifically for it – and of course it's C/L. The model is based on an old design of mine of a fully aerobatic 'small' model for 1.5cc diesel power. Wing is a fully symmetrical section and spar arrangement with basic dimensions of 24in. span by 5in. chord.

This will be augmented by fixed flaps and generous rounded wings tips. A simple 1/16in sheet box type fuselage will house the 6-pencell battery flight pack in a position directly over the centre of gravity at the point normally used for the bellcrank within the wing. For this reason the bellcrank itself is moved inboard by one rib bay and the pushrod cranked to bring it within the fuselage once more at the rear of the wing cutout. The undercarriage will be a plug-in removable type arrangement, so that flying can take place over my local 'rough' field, as well as ROGs off the local school playground.

Covering will probably be Litespan or the new Fibrespan to try and achieve some puncture resistance. The relatively heavy wing construction with substantial leading edge and trailing edge components, is pretty rigid now even uncovered. Hence the lack of tautness in film type covering should not be a disadvantage in this case.

Looking at the half completed model in the workshop the other night, I was struck by its similarity in layout to the old Veron Bee-Bug kit design. This was about 22in. span and from memory, designed for the original ED Bee 1cc diesel. Just by coincidence I was reading the latest issue of the SAM 35 vintage aeromodelling society magazine, when I came across the Bee-Bug name again. It seems that the plans are once again available from the SAM 35 C/L secretary Mike Rolls. This would make a good first C/L model for electric with either a direct or gear drive MFA 02. I wonder if anyone else out there is going to try one?

Old's best

Often the old designs are still some of the best around for sport flying – after all, if they can still sell kits of designs that are now approaching 40 years old, then the performance of those designs is well proven and obviously satisfactory. The old Veron company had a fine stock of designs, the 'cardinal' F/F sports model being one of my favourites. My own version has been electrified for a long time now using a variety of power units. Obviously I am not the only one to find the design attractive – a couple of months ago I showed a picture of Tony Searle's version from Poole in Dorset. This used an Astro 02 motor on direct drive, and was reported to be an excellent performer. Unfortunately this motor is now obsolete and unavailable. I have created my own equivalents by rewinding MFA RE 360 motors with 24 and 22swg wire in the past, and achieved some excellent results. Recently my own model lost its 360 size motor, (actually it was a standard Imp motor from the Highline company in the USA) since I wanted the motor for another model. The question was what to put in its place?

I reasoned that if a direct drive 360 motor on a 5in x 3in prop gave a good performance, then a smaller but more efficient geared unit, driving say a 7in prop, should be just as good, if not better. The solution was staring me in the face, since I had received a sample of the Union Mo-7 motor from Amerang. This, as stated in last month's review, is normally supplied with ARTF small size R/C sports models.

However, it is available as a spare part complete with its special prop. A quick lash-up

showed that if I cut the nose off the Cardinal at the firewall, then this radially mounted unit would fit easily. This was duly done, and the performance is really sparkling on 5 x 100mAh cells. I am sure it would fly OK on four cells, and this would seem to be a good combination for those calm summer evening cruises, which are so reminiscent of the sports F/F that goes on at the R/C and C/L Nationals at Barkston Heath in August. I hope to be there myself this year if work does not intervene, so let's see if we can gather together an 'electric enclave'. If nothing else it may mean that we can share charging batteries, and not everyone will have to bring a car battery or similar to the centre of the field!

Tips

I am always keen to pass on tips that I receive from correspondence with readers. One such tip is a very easy and simple conversion of the 'Bentom' all-foam rubber scale kits. Barry Shaw telephoned me with an enquiry about sources of small nicads. After some discussion on mail order to Sanyo retail distributors (like Abergavenny Model Shop and Heathrow Model Centre, High Street, Harlington, Middlesex) we got to talking about stripping down rechargeable PP9 type batteries. The correct kind with rapid charge cylindrical cells inside has been illustrated in a previous article (December I think!).

It happens that the high street electronics chainstore Tandy stock a suitable PP9 under the Radio Shack brand name. For those interested look for a blister packed battery with black plastic case and purple label. Anyway, to cut a long story short, Barry said he had a Tandy branch near him, and had bought one of their cheap electric motors for 99p. This was a 260 size unit and was duly glued, via a thin ply former, into the nose of a Bentom Spirit of St Louis. A KP01 prop was simply press fitted to the shaft, and three 50mAh cells, also from KP, fitted beneath the wing. The result is an excellent and almost silent flier (no gears to whine!). What could be simpler than that?

I suggested that the ex-PP9 cells which are about 70 to 80mAh capacity for little more weight, would give an even better performance, and extend flight duration on power to a minute or so. My own tests with cheap 260 type motors show that the prop rpm on a KP01 type is about the same as the lighter geared unit made by KP. The disadvantages are that the motor is heavier and the crude and simple leaf type brushes do not last very long at the high currents (2.1/2-3 amps) used for electric flight. However, the cost of a replacement motor is so low that you can afford to have a few spares in your flight kit!

Nats natterings

To coninue this month's offerings, I have had some news of the recent electric goings-on at the Indoor Scale Nationals at Alumwell on 22nd April last. This is an event which I normally attend, but family matters prevented that this year, so I am indebted to various people who contacted me after the event with news. It seems that once again electric power dominated the CO_2/Electric Open Scale event.

I think Dave Hanks of my own South Bristol club, with his very slow-flying Eastbourne monoplane showed the way two years ago, and once again this model gained a trophy to 3rd place. This year the top honours were taken by Mike Allen flying a very nice Sopwith Swallow with KP01 power unit. Mike's flying performance was not good until the realisation dawned that the flight batteries had been damaged by overcharging. A change to a new set of three cells solved the problem, and an excellent 4th and final flight clinched 1st place for the model, which scored excellent marks in the static section too. Mike was assisted by his son, who also flew in the event – I wonder if there were any team orders involved?

That Eindekker again. Ideal layout for experiments.

Outstanding flights of the day in any category were made by Derek Hardman with his twin. Derek is of course the man behind Solarfilm, and his model was covered in Litespan – of course. The model itself was a replica of a 1930s airliner – the Potez 62. With a stable high-wing layout and lightweight construction with minimal detail, this model was designed to fly well. The really ingenious part of the model was the propulsion system however, in order to keep overall weight of the 28in span model right down.

Blade fuses readily available in packs like this...

Derek had elected to use a single, centrally mounted KP01 driving the prop in each nacelle by a simple pulley and thin rubber band arrangement. The bands themselves were of thin section semi-translucent rubber. In flight they were not noticeable at all and the whole effect was most scale-like. The propellers themselves were modified and cut down versions of the familiar 'Peck' small rubber types as sold by SAMS (amongst others!). The model, at 28in span and with moderate aspect ratio, was on the larger end of the scale for a KP01 power unit. The light weight (under 100gm) meant that the overall wing loading was commendably low, and this enabled some superb tail up landings to take place, much to the appreciation of the crowd and the judges. If Derek had managed to obtain some good scale documentation, and out a little more effort into construction and detailing, the model world have been very hard to beat indeed. Four excellent flights amply demonstrated the consistency of electric power – so essential for good scale flying.

This year it seems was a bit of a watershed for electrics – the majority of entrants in the Open CO_2/Electric category choosing this form of power. Despite trying to split up the flying sessions into an early and hopefully less humid period, and a later warmer one, most of the CO_2 entry had problems with icing. This included such experts as Andy Sephton with his previous winner the ABC Robin. Perhaps now is the time to convert it to electrics, it already doubles up as a rubber powered model!

Just to wind up this month's column I have included some more pictures of my little microlight inspired model for KP01 power. I am in the process of drawing this up since I have had quite a few enquiries for a plan. Trouble is the original was sketched up with hardly a plan at all, so it's going to be a case of measuring up the existing rather than going back to the original drawing.

The other pictures show just what you can get for $10 in America if you buy a cheap electric screwdriver! The motor is a very effective heavy winding 380 type with carbon block brushes, which turns at over 10,000rpm on a 5 x 3 prop on only two cells. You also get two 1.2ah rapid charge nicads, a means of charging them from the mains (a resistor and a diode – bit crude but it works!) and a switch. I only wish we could get them over here as cheap! The best deal I have seen so far are Richmond brand at £12.99, but maybe it is worth scouring your local discount tool shops, or even asking them for broken units.

Often it is the gearbox/chuck or batteries which fail first, leaving a perfectly good motor up for grabs. The one pictured was kindly sent on to me by USA correspondent Phil Stanson, and has been flown in my 42in span Fly Baby as a replacement for both the Highline Imp and MFA 02. It is more than a match for the larger 03 motor and I look forward to much useful flying from it.

That's all for this month, keep on writing in with news and views – it all helps to spread the word on electrics!

WHAT'S ON

16/17 June
THE OXFORD MFC FREE FLIGHT RALLY
Venue: Port Meadow, Wovercots, Oxford. Saturday from 7.00pm progressive champagne fly-offs for A1 & CDH also HLG Comp, Sunday from 10.am A1, CDH both in 5 rounds. HLG, Vintage Rubber (34in Max span) Vintage Glider (A2 or 72in max span). No thermistors, Bubble Machines, Streamers on poles, or power models to be flown. Contact: Andrew J Crisp, 30 Portland Road, Summertown, Oxford OX2 7EY. Tel: 0866 53800.

17th June
CHILTERN CUP EVENT CL
Venue: Slip End, Luton. Open Stunt, Vintage Stunt, Novice Stunt. Contact: Glen Alison. Tel: 0923 772675.

23-24th June
ASP SCALE WEEKEND
Venue: Old Warden Airfield. The world's best fun-fly scale meeting for R/C, C/L and F/F! Don't miss it! But Scale Models only, please. Contact: Aeromodeller. Tel: 0442 66551

24th June
THIRD RAYNES PARK MAC VERON CARDINAL F/F MEETING
Venue: Chobham Common. All Veron Cardinals eligible. 1ccmax power. Ratio Competition. Club transfer must be displayed. Best of 3 meetings to count. Contact: Alan Jupp. Tel: 01 669 9497.

24th June
WHARFDALE & DMAC CLASS A DIESEL AND 1/2A COMBAT EVENT
Venue: Dewsbury. Contact: Jeff Smith. Tel: 0532 663432.

1st July
FOURTH RAYNES PARK MAC VERON CARDINAL F/F MEETING
Venue: Epsom Downs. All Veron Cardinals eligible. 1cc max power. Ratio competition. Club transfer must be displayed. Best of 3 meetings to count. Contact: Alan Jupp. Tel: 01 669 9497.

1st July
SMAE F/F SCALE MEETING
Venue: RAF Abingdon, CO/Electric, Rubber, Power. Contact: Charlie Newman. Tel: 08677 3020.

1st July
CONTROL LINE SCAL EMEETING
Venue: RAF Abingdon. Contact: Martin Fardell. Tel: 0454 412486.

8th July
INDOOR FLYING AT CARDINGTON
Venue: Cardington Airship Sheds. Index and league. Contact: Bob Bailey. Tel: Stevenage 723642. Essential to ring before attendance.

8th July
NORTH LONDON RADIO CONTROL MFC VINTAGE DAY
No venue given. Vintage character models. No F/F. Proof of insurance needed. Contact: Richard Barley, 44 Orchard Avenue, Berkhamsted, Herts HP4 3LG.

15th July
OXFORD MFC DREAMING SPIRES GALA
Venue: Port Meadow. Silent vintage F/F events: L/W Rubber (under 36in span), Glider (up to A2 size), Chuck Glider. Plus Silent Open Tailless. F/F scale events: CO/Electric, rubber and power up to 1.5cc max). Absolutely no power models unless entered in F/F scale event. SMAE membership required for insurance purposes. Contact: Charlie Newman. Tel: 086 77 3020.

15th July
ROLLS ROYCE MAC VINTAGE C/L MEETING
Venue: RR Airfield, Hucknall, vintage T/R A and B, Old Tyme stunt, Vintage Speed. Fun Flying over grass and tarmac. Contact: Terry McDonald. Tel: 0332 511273.

15th July
ASP GOLDEN ERA, MODEL FUN FLY
Venue: Old Warden Airfield, Plenty of room for craft from those glorious twenties, thirties and forties. Scale and Vintage equally welcome! Contact: Aeromodeller. Tel: 0442 66551.

15th July
MORLEY INTERNATIONAL SILENT DAY FF
Venue: Heath Common, near Wakefield. Classes: P-30, Mint-Vintage (up to Wakefield size). CDH, Dart Power. Maybe Chuckie. Contact: E Whitehouse, SAE to 29 Church Street, Royston, Berneley, S. Yorks, S71 4QU. Tel: 0226 726335.

15th July
KNAVESMIRE FREE-FLYERS ANCIENT AND MODERN SILENT MINI EVENT
Venue: York Racecourse. 10.00am start. Classes: A/1, CDH, CO Duration, Mini-Vintage, Rubber, Mini-Vintage Glider, HLG. Handicap Flying Scale, Mini tail-less, P-3-, Achilles kit Contest, best Junior, Possibly more. Contact: John Pool, 8 Sycamore Road, Barlby, Selby, North Yorkshire, YO8 7XB. Tel: 0757 703060.

22nd July
INDOOR FLYING AT CARDINGTON
Venue: Cardington Airship Sheds. Index and league. Contact: Bob Bailey. Tel: Stevenage 723642. Essential to ring before attendance.

22nd July
MAGNIFICENT NORTH-WEST VINTAGE SWAPMEET
Venue: Winnington Park Recreational Club, ICI Complex, Northwich, Cheshire. Bring anything to do with model aircraft; magazines, books, models, engines, radios, etc. Dayglo signs for J19, M6. Entry £1. Note the new venue. 10.30 start. Contact: D A Lloyd-Jones. Tel: 056589 3170.

22nd July
BRUMFLY 90
Venue: RAF North Luffenham. 10am start. Competitions will be flown in rounds from a 1 line. Classes: Open Power, Open Glider, Open Rubber, 1/2A CDH, A/1. Send SAE and submit name, telephone number, BMFA number and car registration before 15 July to Stafford Screen, 66 Stevens Close, Wollescote, Stourbridge, West Midlands. Tel: 0304 398535. Identification will be needed on the day.

29 July
NEWBURY & DMAS ANNUAL VINTAGE DAY
Venue: Newbury Racecourse, Newbury, Berks. Control line and R/C Vintage ONLY. A full day's flying in a relaxed atmosphere. All welcome! Proof of insurance essential. Contact: Mark Bees. Tel: 0635 46426.

5th August
INDOOR FLYING AT CARDINGTON
Venue: Cardington Airship Sheds. Index and league. Contact: Bob Bailey. Tel: Stevenage 723642. Essential to ring before attendance.

5th August
THREE KINGS 21st ANNIVERSARY + REUNION DAY
Venue: Old Croydon Aerodrome, Purley Way, Croydon, Surrey. General C/L flying and get together for all Three Kings members past and present. Silencer and proof of insurance essential. Contact: Wal Cordwell. Tel: 081 764 1661.

18-19th August
INDOOR NATIONALS
Venue: Cardington. 'Heavy' models on Saturday; microfilm on Sunday. More information to follow.

18-19th August
ASP VINTAGE WEEKEND
Venue: Old Warden Airfield. The annual pilgrimage! Meet friends old and new – see and fly those super designs from yesteryear! Collectors corner is a new feature for 1990. Model flying at its informal best! Contact: Aeromodeller. Tel: 0442 66551.

25-27th August
BMFA R/C, C/L AND SCALE NATIONALS
Venue: RAF Barkston Heath. Three days of top competition. 1989 had more entries than the previous year – '90 promises to beat that! Come and add to the control-line revival – and watch top Scale and R/C in action. Contact: BMFA. Tel: 0533 440028.

2nd September
INDOOR AT CARDINGTON
Venue: Cardington Airship Sheds. Index, league and Kenny Penny. Contact: Bob Bailey. Tel: Stevenage 723642. Essential to ring before attendance.

9th September
NORTH LONDON RADIO CONTROL MFC ELECTRIC FLY IN
No venue given. Electric models only. No F/F. Proof of insurance needed. Contact: Richard Barley, 44 Orchard Avenue, Berkhamsted, Herts HP4 3LG.

15-16h September
F1D EUROCHAMPS TRIALS
Venue: Cardington. Contact: Bob Bailey. Tel: Stevenage 723642. Essential to ring before attendance.

15-16th September
ASP FOUR STROKE WEEKEND
Venue: Old Warden Airfield. Informal action for four-stroke enthusiasts! Great fun for all! Contact: Aeromodeller. Tel: 0442 66551.

16th September
SMAE MIDLAND AREA RALLY
Venue: Sutton near Eynsham, Oxford. R/C events: Class 1 precision, Flying 15, F/F events: 1/2A Power, Coupe, A1, F/F vintage events: L/W rubber (36in span max), glider, chuck glider. Plus old time stunt C/L. Signposted from Eynsham roundabout on A40, West of Oxford. Contact: Charlie Newman. Tel: 086 77 3020.

16th September
SMAE F/F SCALE MEETING
Venue: RAF Hullavington. CO$_2$/Electric, Rubber and Power. Contact: Charlie Newman. Tel: 086 77 3020.

16th September
CONTROL LINE SCALE MEETING
Venue: RAF Hullavington. Contact: Martin Fardell. Tel: 0454 412486.

23rd September
DOUG BLAKE TROPHY MEETING
Venue: Slip End, Luton. F2A Stunt. Contact: Glen Alison. Tel: 0923 772675.

30th September
THREE KINGS C/L SCALE DAY
Venue: Old Croydon Aerodrome, Purley Way, Croydon, Surrey. FA1 Scale and profile classes, best military. Silencers and proof of insurance essential. Contact: Wal Cordwell. Tel: 081 764 1661.

28th October
SMAE INDOOR SCALE MEETING
Venue: Alumwell Centre Walsall. 08.30 to 17.00. Peanut, Open Rubber Scale, CO$_2$/Electric Scale, Air Racing, Biplane Kit Scale and Jet Prototype flyoffs. Entry on the day. Contact: Doug Sheppard. Tel: 0272 697595.

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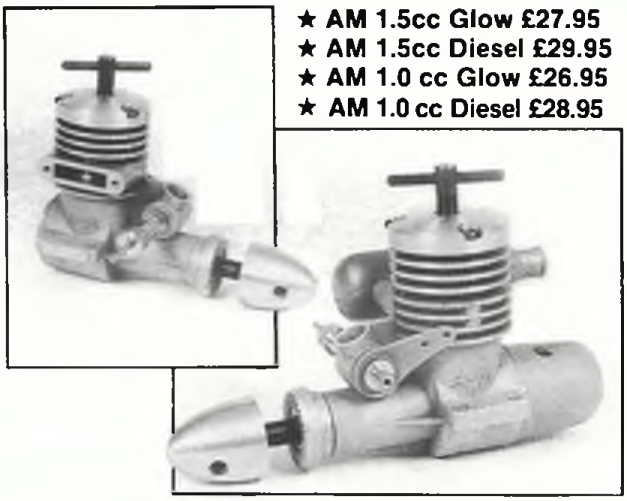

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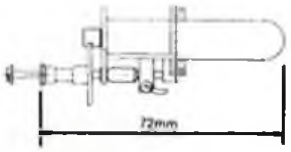

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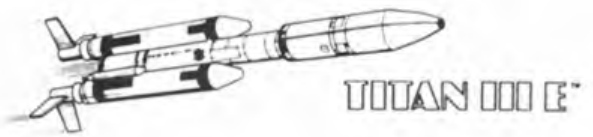

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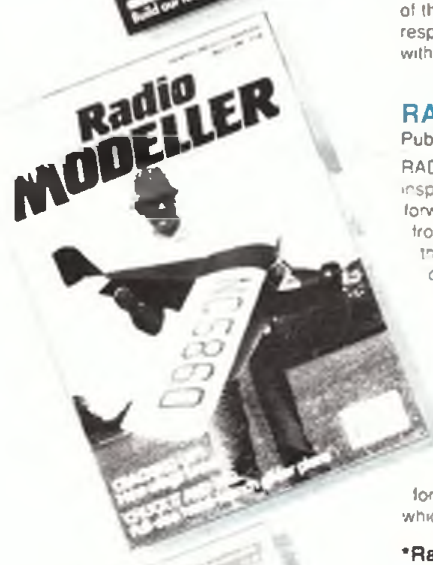

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FOXXY by Rod Lewis, Dave Ackery
Follow up instructions to the Free Flight FOXXY model. See pull out plan in June 1990 Issue.
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Little Rocket by J.L. Sadler
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FF CO2 Mini vintage biplane
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PERCY III by R.H. Warring
A Duration model (rubber) revisited by Peter Michel. One quarter Scale.
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Vulture for Jetex by John Park
Presented in JETEX DAYS.
Document Page: 36