



2 FREE PLANS - RC SOPWITH BABY & CL SUPERMARINE TWIN

AERO MODELLER

www.aeromodeller.com

October 2017.

No. 965. £5.00

BMFA NATIONAL CENTRE

WE VISIT THE NEW CENTRE OF AEROMODELLING EXCELLENCE @ BUCKMINSTER...

OLD WARDEN



MAYFLY 2017

COVERING



HOW TO

EZE DOPE

ENGINES



OF THE '40S

HOME BRANDS

DOOLITTLE
MEDIA



● IN SCALE CIRCLES ● THE FIRST ARTF? ● BETTER RETRIEVAL ● FROM THE ARMCHAIR...

NEW!
From Shesto

Precision Masking Tapes

Different Sizes Available

**MODEL
CRAFT**

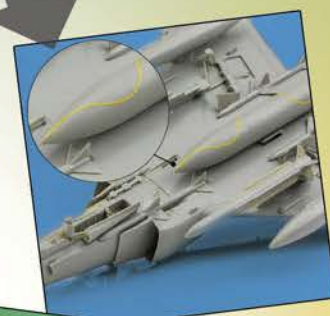
Ideal for Modelling, Airbrushing, Arts,
Crafts, Hobby & even those smaller DIY tasks!

- Precise & intricate masking
- No paint bleed
- No annoying paint lines
- U.V. protected for masking in direct sunlight
- No tedious cleaning required
- Can be used on contoured surfaces
- Smaller sizes can follow curves without crinkling



NEW

£1.25 RRP	1mm x 18m Twin Pack	PMA2001	
£1.50 RRP	2mm x 18m Twin Pack	PMA2002	
£1.75 RRP	3mm x 18m Twin Pack	PMA2003	
£1.99 RRP	6mm x 18m Twin Pack	PMA2006	
£2.75 RRP	10mm x 18m Twin Pack	PMA2010	
£2.50 RRP	18mm x 18m Single Pack	PMA1018	



For details of your nearest stockist, call or e-mail today!
(Trade Enquiries Welcome)

shesto

3 Century Court, Tolpits Lane, Watford WD18 9RS
+44 (0) 20 8451 6188 +44 (0) 20 8451 5450
sales@shesto.co.uk www.shesto.com



CONTENTS

AEROMODELLER 965 OCTOBER 2017 – Next issue published on 19th October 2017

- 04 HEARD AT THE HANGAR DOORS**
EDITORIAL, NEWS AND VIEWS.
- 07 UP AND COMING**
CALENDAR OF EVENTS FOR THE NEXT MONTHS.
- 08 SOUTH BRISTOL MAC GALA – PART 2**
ALL THE CL ACTION FROM THE 70TH ANNIVERSARY BASH ...
- 14 USING EZE DOPE**
ANDY SEPHTON USES THE DELEXE MATERIALS ALTERNATIVE.
- 18 MODEL SCIENCE – BETTER RETRIEVAL PART 35**
THE ART OF TRACKING – IN CALM WEATHER!
- 22 IN SCALE CIRCLES**
BERNIE SEALES REMEBERS TWO GIANTS – AND BIDS FARWELL...
- 24 KIT REVIEW**
A 60 YEAR OLD ART!
- 28 FREE PLAN 1 – SOPWITH BABY**
MICRO RC INDOOR/OUTDOOR SCALE BIPLANE ON FLOATS

- 38 BMFA NATIONAL CENTRE, BUCKMINSTER**
AM VISITS THE NEW FLYING SITE/ VISITOR CENTRE
- 42 HOUSE BRAND DIESELS**
ADRIAN C DUNCAN LOOKS AT 'SHOP MADE' DIESELS OF THE '40-'50S
- 50 FROM THE ARMCHAIR**
STUART SHERLOCK MUSES FLUID MECHANICS
- 54 FREE PLAN 2 – SUPERMARINE**
"SUPERTWIN" TYPE 325
25" SPAN PROFILE CL SCALE MODEL DESIGNED BY CHRIS COOTE
- 58 WONDERFUL OLD WARDEN!**
ACTION FROM THE 2017 MAYFLY MEETING...
- 64 AEROPOST**
YOUR LETTERS, VIEWS AND COMMENTS...
- 66 TAIL END CHARLIE**
AEROMODELLING POT-POURRI FROM THE MIND OF CHRIS OTTEWELL

AERO MODELLER

Doolittle Mill, Doolittle Lane, Totternhoe,
Bedfordshire LU6 1QX, England

Issue 965, October 2017
(Issue 047 since relaunch)

How to contact us:

Tel: 01525 222573
Fax: 01525 222574
Email: enquiries@doolittlemedia.com

Editorial:

Editor: Ken Sheppard
Email: editor@aeromodeller.com
Publisher: Alan Harman
Administration Manager: Hannah McLaurie
Office Manager: Paula Gray
Advertisement Manager: Sean Leslie
Editorial Design: Peter Hutchinson
& Alex Hall

Advertisement and circulation:

Aeromodeller, Doolittle Mill, Doolittle Lane, Totternhoe,
Bedfordshire LU6 1QX, England

Tel: 01525 222573 **Fax:** 01525 222574
E-mail: enquiries@doolittlemedia.com

Newstrade:

Select Publisher Services, 3 East Avenue,
Bournemouth, BH3 7BW
Tel: 01202 586848 **E-mail:** tim@selectps.com

Subscriptions:

Aeromodeller, Doolittle Mill, Doolittle Lane, Totternhoe,
Bedfordshire, LU6 1QX.
Tel: 01525 222573 **Fax:** 01525 222574
Subscribe: 12 issues - UK £55, Europe £73,
Worldwide £82

Website: www.aeromodeller.com

AeroModeller is published monthly by Doolittle Media, Doolittle Mill, Doolittle Lane, Totternhoe, Bedfordshire, LU6 1QX. Entire Contents © 2017 Doolittle Media. Reproduction in part or whole of any text, photograph or illustration without written permission from the publisher is strictly prohibited. While due care is taken to ensure the content of AeroModeller is accurate, the publishers and printers cannot accept liability for errors and omissions. Advertisements are accepted for publication in AeroModeller only upon Doolittle Media's standard terms of acceptance of advertising, copies of which are available from the advertising sales department of AeroModeller.



Chris Coote's twin diesel powered profile CL Supermarine Type 324/5 is one of our two FREE plans (reduced).

HEARD AT THE HANGAR DOORS



EDITORIAL – And it's goodbye from me...

I said it was only temporary! My tenure in the Editor's chair of this oldest and longest-running UK aeromodelling magazine comes to an end with this issue. The good news is that Andrew will be back next month to pick up the reins again, while I sink back into the placid life of the retiree (yeah, right!).

The three issues that I have worked on has made me realise just how hard Andrew works to both fill the pages each month – and to fill it with such interesting stuff! Thank you to those of you who have responded positively to my efforts and to my plea for articles, plans, etc. It created not exactly a flood, however, the trickle, provided that it is steady, will help to keep things going – but I must say that it is clear to me that the future of Aeromodeller is in your hands – keep it coming!

I visited the new BMFA National Centre a few weeks ago (report in this issue) and was very pleasantly surprised with the

progress that has been made in such a short time – it bodes well for the future. I remember Andrew's Dad's editorials of many years ago, taking the SMAE – as it was then, and the BMFA as it is now – to task for not actively seeking to prepare such a facility – it was a personal crusade for him to try and generate action from the sport's national body and I think, a great disappointment to him that he was unsuccessful. However, slowly, slowly catchee whatsit... It has been long overdue – but it has happened!

If you've not been, then I recommend that you do – it needs your support to maintain its viability and your input to develop it the way that you want it – it has the potential, but to be a success, it needs positive support from us all!

Regards, Ken Sheppard

FREE FLIGHT POWER TEAM WIN BRONZE AT WORLD CHAMPIONSHIPS

At the recent World Championships held at Szentes, Hungary the British F1C (power) team of Simon Dixon, Alan Jack and Ken Faux won a well-deserved Team Bronze behind China and France from a total of 30 competing nations.

Flown in extreme temperatures of over 40C and at times wind speeds of 5m/s, the three days of competition attracted over 40 nations and tested the capabilities of even the most experienced fliers. A full report of all three classes where Team GB came a creditable 6th in the overall country classification will be in the November edition.



TRADITIONAL DPR MODELS TO TAKE OFF AGAIN!

Established in 1978 by David Peter Rawlins, DPR Models became the UK's leading manufacturer of traditional balsa wood gliders and rubber powered aeroplanes, making well over a million models in twenty five years.

Now these popular model planes, featuring the classic Concorde, Gnat and Tornado catapult launched gliders, Chuckie, Winner and Rare Bird gliders and rubber powered Cessna 180, Racer and Hyper Cub will become available in the UK again, following the sale of DPR Models manufacturing business to aeromodelling enthusiast Mohammad Adeem, for production in Pakistan.

David and Janine Rawlins ran their National Chuckie Championships at major modelling events for both children and adults for many years, and are delighted to learn that the DPR Models range will be jointly distributed to retailers across the UK by two leading wholesalers J. Perkins Distribution Ltd and Javis Manufacturing.

Please contact: J Perkins Distribution Ltd - email: sales@jperkins.com - Tel: 01622 854300
Javis Manufacturing - email: trade@javis.co.uk - Tel: 0161 480 2002





ANOTHER UK SINGLE CHANNEL AND RETRO EVENT

Every year PANDAS hosts our "S/C & Retro RC Fly-in" event which grows ever more popular. We're often asked after each event if there's any chance of "more of the same" later in the year.

Well, it's short notice, but we've decided to do just that, and for many reasons to site it at Buckminster, the new BMFA National Flying Site. As a break from tradition, we decided to do it mid-week rather than a weekend. Why? Well, we're mostly either retired, thought we were retired or just prefer flying to working and weekends are often booked solid many months in advance. A mid-week event means that you don't have to miss your planned

weekend activities.

Following the Pontefract template it's an informal retro and vintage 'Fly-in' and whilst our own niche interests are S/C, Reeds, Galloping Ghost, & Pulse, of course everyone is welcome to fly their retro & vintage models with modern gear too. To broaden the scope we're expecting Control-line and Free-flight, we've invited the SAM lads and we're hoping the UKCAA classic aerobatic aficionados will join us, so there's something for anyone with either a nostalgic or plain curious nature.

There will be a small entry fee of £6 and I understand that overnight camping is available, but contact

Buckminster for any additional cost.

Hoping to see as many old & new faces as we can muster, even if you're not a convert, come along & see what all the retro fuss is about

Location: www.nationalcentre.bmfa.org/visitor-info/getting-there

Event Updates: www.singlechannellersreunited.co.uk/phpbb3/viewtopic.php?f=18&t=968

Event enquiries to either:-
philg@talk21.com
thatbloke@garritys.net
david.lovegrove11@btinternet.com

SPEED SUCCESS @ LANDRES!

Mid July, Peter Halman and Paul Eisner travelled to Landres for the Dutch and French Control Line F2 World Cup flying competitions. They achieved first AND second places in both F2A (speed) competitions with flights over 300kph - a great result before the European Championships which are due to take place in Hungary during early August. Well done, you guys!



2018 CENTENARY TO BE COMMEMORATED AT MODELAIR OLD WARDEN EVENTS

ModelAir, the organisers of the Model Flying Weekends at Old Warden, on behalf of the Shuttleworth Trust, have announced that as 2018 sees the centenary of cessation of hostilities in WW1, there will be a special focus on WW1 models at the 2018 July Scale weekend and September's Festival of Flight. There will be prizes for various categories of accurate scale models of WW1 aircraft in all three disciplines - FF, CL and RC. The organisers would also like to attempt a world record for the number of scale models of WW1 aircraft on the same airfield at the same time! So there is plenty of time to build your contribution to these themed meetings - and take part!

ModelAir are also negotiating with the Shuttleworth management to see if it is possible to fly and display one of the Collection's WW1 fighters during each of the days of the weekend for the benefit of modellers and visitors, as a homage to those who flew for their country during WW1. Bearing in mind the cost to the Collection of such flights, both in maintenance and engine hour implications, agreement to fly the full-size needs very careful consideration. ModelAir hope that an increased attendance at these events would go along way to alleviate these costs. So spread the word as well as building your own WW1 model, the ModelAir model flying events at Old Warden in 2018 promise to be very special - and not to be missed.



NEW VINTAGE COUPE TROPHY FOR THE BIRMINGHAM COUPE EVENT, 3RD DECEMBER...

Ivan Taylor is a professional artist and aeromodeller and has painted a plate to be awarded to the winner of the Vintage Coupe class at the contest "La Grande Coupe de Birmingham". This annual Coupe d'Hiver contest will be flown at MOD North Luffenham in the fair county of Rutland on Sunday 3rd December 2017. The painting is based on a photograph generously offered by Dave Hipperson, a name well-known to readers of *Aeromodeller* over many years. If you want the chance to display (if only for a year) this piece of original artwork by Ivan, then get building and trimming in time for December. Those who know and fly vintage (that's pre December '57) Coupe d'Hiver models will tell you of all their virtues; they cost nothing, fly well, look pretty, etc. For those who are new to the class, or who have never flown in a Free Flight duration competition before, some words of explanation and encouragement might be needed. Perhaps it's also necessary to remind potential flyers that they will need to be BMFA members to fly on MOD land in the UK.

So, for those who have not done this sort of thing before and fancy having a go, here is the explanation and encouragement (and those more expert than me can please stop sniggering and go to the end of this article). Probably the best place to start in the search for a model to build is to look no further than the September 2015 *Aeromodeller* magazine, which has a free plan and article detailing the construction of the 1954 Coupe de Michel Etievre. This mouthful is frequently abbreviated to "Michet", everyone will know what you mean. The Michet is probably the simplest vintage coupe design that is readily available and it's also amongst the most successful – indeed, a Michet was used to win this event in 2016. That said, it might not be regarded as the prettiest model. Those of an enquiring mind will be able to dig out details of such beauties as Fuit 3, Machaon, Jump bis, Altair, etc. and, I hesitate to mention, the hugely successful Bagatelle, which is not at all pretty! The required minimum C d'H weight of 70g (excluding rubber) can be achieved using "model shop" wood so long as you don't go mad, cover in jap tissue, and go easy on the dope. It will save a few grammes (and pounds!) to use DT fuse in place of a Tomy timer, if you prefer this technology. Also detailed is how to make that terrifying thing – "a propeller". At least there is the consolation that in all of these designs there is only one blade to make, so no

difficulty in making two the same! Most of these designs would have originally been trimmed "Right/Left" (R/L). That means climbing to the right under power and then gliding in left circles after the power runs out and the propeller folds. Well, they knew what they were doing 60 years ago and R/L is still probably the best and certainly the safest trim for a vintage coupe. The AM article gives some information about setting the centre of gravity at the correct position, (if there is no other information ~60% of the wing chord back from the leading edge is a good start), and packing under the tailplane to get a good glide. If you've never flown R/L before, the next step is to set the rudder to give a definite left circle on glide (and re-pack the tailplane to give as shallow glide as possible). Then start with some right thrust (maybe 1.5mm packing) and gradually work the number of motor turns up from around 200 in steps of 100 up to the maximum, checking that there is sufficient right thrust to keep the plane turning right, and making adjustments accordingly. You might also need a little downthrust to stop the model power stalling, particularly later in the motor run. When all the balancing of glide turn and thrust line is done, you should have a model which may start off climbing straight for maybe a couple of seconds before settling into a steady right turning climb. Prop fold should result in a positive left turning glide, nice and shallow and just looking for a thermal. An annoying feature of R/L trim is the possibility of a period of several seconds of straight flight just before the prop folds, where the bit of right thrust at low power just balances the left-turning rudder. You might try a bit more left rudder and right thrust, that might cure it, or just accept it, but it can make trimming on a small field tricky. Models trimmed this way need a firm push when launching to get them up to flying speed and get that left rudder working – don't let them just fly out of your hand.

Perhaps unsaid in the AM article is that you will need some "proper" rubber. SuperSport is available from Mike Woodhouse and John Hook (Flitehook) and £20 something will buy you a pound of the lovely stuff which is enough to make well over forty 10g motors. Buy 1/8" width rubber and make the 10g up into 10 strands. For lubricant you could

do worse than Castor Oil from the local chemist – Ivan Taylor swears by it in his duration and scale models. The maximum lubricated rubber weight is 10g, so the dry weight will be around 9.6g to be safe. The number of turns quoted by Chris Redrup of 540 maximum, is surely right, but he's very skilled and you will need to give

a lot of stretch (extend by 6 or 7 feet!) and wind very carefully to achieve that. Remember you will also need either a jig to hold the model while you wind it, or a mate to hold and time the flight for you (which service you will, of course, reciprocate!)

Vintage coupes are an ideal introduction to competitive free

flight and in that spirit the format for this class at the Birmingham event is kept deliberately simple. All you have to do is fly three flights (to a maximum which will depend on the conditions on the day, but will not be greater than two minutes) starting at 10am (no early morning starts) and finishing at 2:45pm. If necessary (it often isn't, two minutes on a winter's day with these simple models isn't easy), there will be a fly-off at the end to decide who takes this handsome plate home for the year. In addition for first, second and third placers, there will be a fine choice of wine and the plaudits of your fellow modellers at the prize-giving, which comes with hot drinks and nibbles in the warmth of the "on site" golf clubhouse. By 4:30 you will be on your way home. All this for a tenner, what's not to like?

Hard-core flyers can now pay attention since they didn't need any of the above. They also shouldn't need to be reminded that £10 gives entry to both F1G and Vintage coupe and that F1G will be in rounds for the Aeromodeller Trophy. All to the usual format for the Birmingham Coupe event check the modelling press for details. The organisers would love to welcome a full house of entries this year, please come along, enjoy yourselves and help make the event a success.

If you're still unsure please contact me, Gavin Manion, on gavin.manion84@gmail.com and I'll do my best to answer any questions.



THOUGHT FOR THE DAY

Today's mighty oak is just yesterday's nut that held its ground.

Up & Coming

Please note that the events listed are compiled weeks in advance of publication, and you should check before travelling in case of change. For future inclusion of your events, please send an email with date and details of the event in a format similar to those shown below to editor@aeromodeller.com

SEPTEMBER

3 September

Peterborough Flying Aces Nationals, Ferry Meadows, Nene Park, Peterborough PE2 5UU. Silent FF only event (no IC) for scale, glider, rubber duration, CO2, Electric, etc. New KK Elf series of comps sponsored by Vintage Model Co. Hi-start bungee supplied. Brian Waterland 01778 343722 www.peterboroughmfc.org

3 September

Timperley FF Gala, MOD North Luffenham. 10:00 to 17:30. Comb-Rubber, Comb-Glider, Comb-Power, Comb-HLG/CLG, Mini-Vintage, E36. Trophies and prizes. Airfield charge. FF Sport flyers welcome. Gerry Ferer 0161 928 4955 gferer@hotmail.com

10 September

Vintage Combat, BMFA Centre, Buckminster Lodge, Sewstern, Grantham, NG33 5RW. Mick Lewis 01453 542367 combatflyers@talktalk.net

10 September

Goodyear Day, Barton, Manchester. British, Open & Mini Goodyear. Ed Needham 01614 855193 www.controlline.org.uk

16 September

Tonbridge Gassers and Rubber Fanciers Indoor Flying - 6.30 pm until 10.00 pm - freeflight and lightweight R/C timed flying sessions throughout the evening. King's Rochester Sports Centre 601 Maidstone Road Rochester Kent ME1 3QJ. Contact Steve on 0208 942 5000 or Eric on 01622 737814.

16 September

South Norfolk MFC Indoor. All model types, 100g max. Leisure Centre, Old Norwich Road, Wymondham, Norfolk, NR18 0NT. 7pm - 10pm. www.snmfc.co.uk

16-17 September

Barton F2 Weekend, Barton, Manchester. F2A, F2B + Barton Cup, F2C & F2CN. Malcolm Ross 01925 766610 www.controlline.org.uk

17 September

SAM Postal Contest (SAM35 & 1066 Worldwide) 'Lulu and Friends'. For Lulus and similar Gliders. Also 36" Hi-start Gliders.. John Ashmole, 164 High Road, Weston, Spalding, Lincs PE2 6JU.

17 September

'Autumn Trophy' SAM35 Area Postal for P30 Rubber at Area Venues. Pre-entry essential £3 (juniors free). John Ashmole, 164 High Road, Weston, Spalding, Lincs PE2 6JU.

23-24 September

Festival of Flight at the Shuttleworth Collection, Old Warden SG18 9EP. Including Voetsak CL Racing & 'Rubber Bowden' on Sat, Vic Smeed Memorial event on Sun. NEW - The Rubber Bowden - a precision contest for cabin rubber models. For rules and further details, visit www.sam35.org, or e-mail johnashmole@yahoo.co.uk For general event info, see www.modelair.info

24 September

Oliver Combat for the John Oliver Memorial Trophy, at Festival of flight Old Warden. Mick Lewis 01453 542367 combatflyers@talktalk.net

24 September

Vintage Team Race, Barton, Manchester. VTR A, VTR B, Barton B, Vintage 1/2 A. John Mealing 0117 947 8758 www.controlline.org.uk

24 September

BMFA South West Area Indoor Flying. Saints Health & Fitness Centre @ St Austell Rugby Club, Tregorrick Park, St Austell, Cornwall, PL26 7AG. 12 noon to 4pm, F/F and Micro R/C. David Powis 01579 362951 dave_powis@hotmail.com

30 September

Croydon Coupe Day plus SAM 1066, Area 8, Salisbury Plain. 10:00 to 18:00. F1G, Vintage Coupe, E36, Ryback A2, Comb V/C CLG/HLG, Unorthodox and Sports FF Meeting. Use of DT recommended but not mandatory. 02392 550809 www.sam1066.org

30 September

6th ANNUAL SWAP MEET, Huddersfield & District Model Aero Club, 09.00 - 12.00, Shepley Methodist Church Hall, Penistone Road, Shepley, Nr. Huddersfield, West Yorkshire. HD8 8DB. The Church Hall is situated on the A629, approximately ½ mile North of Sovereign crossroads (A629 and A635), on the outskirts of Shepley village. Entrance Fee £3, Tables FREE to sellers, 20 Tables, plus bring your own camping tables. No Table Bookings. Parking for 30+ cars to rear of Church Hall. Refreshments available; Tea, Coffee, etc. CONTACT: 01226 766636, Mobile (30th.Sept. ONLY) 07790 647827.

OCTOBER

1 October

'Octoberfest' SAM35 Rally, BMFA Centre, Buckminster Lodge, Sewstern, Grantham, NG33 5RW. Voetsak CL Racing. www.sam35.org

8 October

'Autumn Trophy' SAM35 Area Postal for P30 Rubber at Area Venues. Pre-entry essential £3 (juniors free). John Ashmole editor@peterboroughmfc.org www.sam35.org

8 October

Goodyear Marathon, Barton, Manchester. 1000 lap Goodyear CL TR. Ed Needham 01614 855193 www.controlline.org.uk

8 October

SAM35 Vintage RC and CL at Middle Wallop, SO20 8DY. All vintage types, Tomboy, Radio Assist and Single Channel. Control Line 'Bee Bug Bash' etc. Sorry no FF. David Lovegrove 01491 200558 david.lovegrove11@btinternet.com www.sam35.org/events

14 October

Delyn MFC Swapmeet 2, St. Winefride's Primary School, Holywell CH8 7NJ. 09.00 to 13.00. Mike Parry 01352 710167 crashparry@gmail.com

14-15 October

Barton Club Speed Weekend, Barton, Manchester. All Open Classes, F2A, Barton Club Speed, 'Have a Go'. Dick Hart 01387 820335 www.controlline.org.uk

15 October

Beverley & District MAC Autumn Swapmeet, Tickton Village Hall, near Beverley HU17 9RZ. 09.00 to 12:00. Tables £5.00 Brian Jenkins 2bee.jays@live.com 07970 959875 www.badmac.btck.co.uk

15 October

Vintage Combat, Darley Moor Raceway, Ashbourne, DE6 2ET. Mick Lewis 01453 542367 combatflyers@talktalk.net

21 October

Tonbridge Gassers and Rubber Fanciers Indoor Flying - 6.30 pm until 10.00 pm - freeflight and lightweight R/C timed flying sessions throughout the evening. King's Rochester Sports Centre 601 Maidstone Road Rochester Kent ME1 3QJ. Contact Steve on 0208 942 5000 or Eric on 01622 737814. 22 October Barton Racing Day, Barton, Manchester. Classic 15 & Barton B CL TR. John Broadhead 01524 251592 www.controlline.org.uk

22 October

Original King's Lynn Aero Model Swap-Meet at the West Winch Village Hall, Watering Lane, West Winch, King's Lynn. PE33 0JY. King's Lynn Aero Modelling Club will be holding a table top Swap Meet dealing with all types of flying models, engines, radio control equipment and associated paraphernalia. Get ready for the new season and tidy up your modelling shed. Bargains for all! Tables are available at £6.00 each. This includes admission of one Stall Holder. Additional helpers - £2.00 each. Entry for Stall Holders is from 8.00am. to 8.45am. Entry for Buyers is 9.00am to 12.00pm. £2.00 per person - includes a FREE Raffle Ticket. Additional Raffle tickets will be available. Bacon butties, Teas & Coffee will be available. For further information and booking form, contact Andy on 01553 841603 or Gerry on 01945 582023. klamc.2009@btinternet.com



SOUTH BRISTOL MAC - 70 YEARS ON!

DAVE HANKS
COLLATES A REPORT
ON A CELEBRATION
GALA...PART 2



Three SBMAC stalwarts from the '60s show off the commemorative shirts designed by Richard Evans – Chris Coote (left), Chris Ottewell (centre) who is AM's Tail End Charlie! and Richard himself (right).

The period just after World War 2 was a good time for a resurgence of interest in model building and flying - with modelling items

becoming more available, with people needing to be able to relax at last and with lots of air-minded and inspired youngsters around (and no i-phones to distract them!). It was in this period that

many new clubs emerged throughout the UK.

One such club was the South Bristol Model Airplane Club – getting 'off the ground' in 1947. With limited ways of



A photo from a very old scrapbook! South Bristol MAC members in 1950 at a FF rally – no control line models yet, but in a few years...



Some of the wide variety of speed models entered for the various classes.



A couple of Weatherman and a Perky speed model.



getting around (maybe with your model strapped to your back on your Hercules bike, or on the bus and Shanksie's Pony) the majority of members did, in fact, come from South Bristol and nearby areas.

Seventy years on, the same club is still very much alive, but now with members spread over a much larger area, due to the specialist nature of the club.

For the first chunk of the club's existence it featured mainly control line and free flight – as did most clubs at the time. Then radio control started to become more readily available and the club moved with the times and embraced this fledgling discipline. However, RC never seemed to catch on with majority of members to the same extent as CL and FF. As the enthusiasm for RC waned, the club once again tended to concentrate on the original disciplines on which it was founded. Although the club recognised the appeal and success of RC, we knew there were many clubs

that were far better placed to provide support for newcomers to RC flying and consequently, anyone enquiring about joining a club to fly RC were put in touch with other local clubs.

And so it is that our club has continued to cater for control-line and free-flight enthusiasts (with a little indoor flying – also mainly free-flight). Unlike many clubs nowadays, most of our members still get much satisfaction from building – and in some cases – designing, their own models.

For many years we heard people say that we were unlikely to last much longer as these disciplines were dying and no 'new' people were coming into the hobby. In fact, I recently read our club minutes of 20 years ago – and found these very same comments, then!

However – this time around it could be more likely to be true. Most of the members who have joined in recent years have been 'returnees' who remember building Phantoms or Ajax's

when they were teenagers. Those who went down this route in the heyday of aeromodelling, are probably in their 60's to 80's now. Of course, there is also the problem of losing flying sites – our own main MOD flying site at Colerne is due to be sold to developers in 2018 – and with the relative intolerance of society generally, the days of popping down to the local common for a few hours of combat flying on a Sunday morning are just a distant, but pleasurable, memory.

This could possibly mean that we really may not make the next 'big one' (75 years) and so the decision was made to try and mark the 70-year milestone in some way. Every year we hold a Gala meeting at our site near Berkeley Power Station, where other fliers are invited to participate in various CL competitions. This year, we tried to make this Gala a little special. Anniversary garments were designed and orders taken. A '70 year' banner was produced. 'Photo' cakes were ordered and a photo display



Tense moments for Peter Rabjohn in the speed circle.



Fox 59 powered Little Rocket vintage speed model about to get away.



One from combat! The official and unofficial judges!





The Little Rocket passes by – piloted by Geoff Hanks.



Very close action! Nick Blades, Malcolm Ross and Tony Toogood in Barton B racing.



Standing launch of MGYR by Dave Hanks.

board was assembled with photos going back to the day when we had sufficient numbers to organise coach outings on a regular basis!

Then we waited and just hoped that the weather might be in our favour on the appointed day. It certainly was! June 18th was the hottest day of the year up to that point – with a clear bright sky all day and temperatures over 30°C for most of the event. A very slight breeze from the adjacent Severn Estuary helped a little and the availability of the bar in the social club on site was very welcome!

At 1pm, all members, visiting fliers and friends gathered for the customary group photo. This now takes pride of place on our website – replacing the 60th Anniversary Group photo.

And so, to the main reason for the Gala – the flying.

And a great time was had...

The available space was split up for the three main disciplines, vintage team race, vintage speed and vintage combat. A dedicated grass-mowing team created two really fine circles – one for speed and an adjacent one for team race and

sufficient space was allocated for the combat 'boys' to run two circles.

We are fortunate to have the two 'leading lights' of the Combat Flyers Association (Richard Evans and Mick Lewis) in our club and thus they almost guaranteed a very healthy turn-out for the combat. Richard's roundup of all the action will be fully covered in next month's issue of *AeroModeller*.

As usual, the day's team racing (and most of the grounds preparation) was overseen by our treasurer, John Mealing. The usual competitions were held – Vintage 1/2A, A & B, Barton B and, for the first time, Mini-Goodyear. In years gone by, our club could almost have run such events with our own teams, but with dwindling numbers, those are just distant memories. Over to John Mealing for a resume of the day's activities:

TEAM RACING – John Mealing

The team race circle was repositioned at this year's gala to inside the crowd barrier of the main football pitch at Hamfields Leisure Centre. This barrier is a requirement of the league that the local club is playing in.

The entry for team racing was, as usual, small. However, teams had travelled from Barton, Ipswich, Nottinghamshire and Shropshire, plus local teams. For some classes, the entry level resulted in only a final being run. The general format of the event was that each class had a practice period followed by two rounds of heats and a final.

1/2A practice showed that despite the club cutting the grass as closely as possible, the models were having a lot of trouble taking-off. Four teams practiced, but despite several modifications to his model's undercarriage, Tony Toogood was unable to get his model to take off and withdrew from the class. This left the remainder to contest a straight 180-lap final, which was won convincingly by father and son team, Mark and Martyn Haywood. Second were Malcolm Ross and Laurie Court, one minute behind them. John Green and Ken Newbold retired at 178 laps.

The second event on the schedule was Vintage B, for which there were only three entries, again resulting in a straight final. Tony Toogood had more luck in



this class, winning with his pitman Dave Lewis and batteryman Martyn Haywood. Second was South Bristol team, Nick and Steve Blades with batteryman Terry Taylor. Third were visitors Malcolm Ross, Laurie Court and Tom Millar.

Third event of the day was Mini Goodyear, returned to the Gala at the request of the Club Committee. Five teams took part with varying degrees of success. Junior Tom Smith, flying with his grandfather Pete Jephcott, won the Aeromodeller prize, generously donated by editor Andrew Boddington. Sadly Peter didn't make the final, which was won by Johns Green and Long, who finished two minutes ahead of second place scratch team of Chris Coote and Pat Leeman. Geoff and Dave Hanks trailed in third place.

The afternoon session was dedicated to the two classes which usually provide the best racing - Vintage A and Barton B.

With four teams competing, unfortunately Vintage A failed to live up to its reputation. The Haywood's broke their model at the end of their second round heat, leaving the remaining three teams to contest the final, which was won easily by Malcolm Ross and Laurie Court. They led the second place team of Nick and Steve Blades by two and a half minutes. Toogood and Lewis retired at 30 laps. The Blades lost a lot of time due to their Rothwell preferring to start backwards.

The last event of the day was Barton B, with five teams entered. With everyone losing energy due to the superb weather conditions, CD John Mealing decided to just run one round for Barton B. This single round produced the closest flying of the day with 30seconds covering all

of the teams. The final was even closer with Green/Long/Newbold beating Ross/Court/Millar by five seconds. The Haywoods retired at 147 laps.

SPEED – Tony Goodger

Despite some of the regulars being absent, the Gala's speed event had a good turnout of

12 entrants and flying continued most of the day. We were blessed with excellent weather and made good use of the new dugouts for the shade they offered. Unfortunately they had been designed for midgets, so a few had bruised heads by the end of the day!

We had some good results in Weatherman with Jan Huning pushing very close to the record in Class 1. It was nice to see some profile models competing, as this class has been slow to catch on. Several attempts at take-off in vintage speed failed. Although the grass had been freshly cut, the drag on the dolly wheels proved too much to facilitate lift-off.

The new SAM 35 electronic timing system was used throughout and, apart from a couple of minor glitches, worked faultlessly.

Our thanks go to the SBMAC Committee for, as usual, organising such an excellent event that was enjoyed by all.

MY DAY AT THE GALA

– Dave Hanks

This is an insiders account of life at the team race and speed circles. The South Bristol Gala is probably the highlight of my year as far as flying and enjoyment goes. I've been a control-line enthusiast for 60+ years – my first own

design control-liner being a tiny 'trainer', powered by a Cox Pee Wee .020, flown on ridiculously short lines in my parents front garden. When the fuel ran out I just continued to whip it around until I collapsed in a giddy heap on the lawn! That could possibly explain why, even to this day, I can't fly CL without feeling giddy and then sick for the rest of the day. This hasn't dented my enthusiasm, however, as I have still enjoyed building and pitting CL models. Luckily for me, my son Geoff (now in his 40's) has also been quite keen and an excellent pilot - encouraged from his early years!

And so, for the Gala, it was again myself pitting and Geoff piloting. Although we had brought along five models to enter in 'speed' events, our first hour or so was dominated by our 'attempts' in the Mini-Goodyear team racing. I thought I had carefully checked over the model and lines the day before. Everything had seemed OK, and the motor ran up fine. Of course, you can never tell whether a teamrace motor is running at its best until it is in the air and goes 'on song'. The last few outings of this model it had behaved very well. But not this time!

It seemed reluctant to restart reliably and also definitely lacked pace. When it came in for its first pit-stop, I adjusted the needle valve for a leaner setting (diesels normally peak as you reduce the fuel flow - just before the level at which they don't have enough fuel to keep running). It was slightly faster, but still not up to its normal speed. On the second (and last) pit-stop of the first (100lap) heat, I tried to turn it back even more - and found that it was at its limit. Turned 'fully shut' it still ran! Everyone



Spot all those straw hats ! Must be a real summer's day at last!



Martyn Haywood's Barton B team racer gets away.



*Alastair MacNair's profile
Proto speed entry.*

had the chance to take part in two heats, so a new needle was fitted before this and now I was able to adjust it right back to closed OK. But we were still not in contention and put in a disappointing time. By this time, we were ready to see if we would have more luck in the speed circle. But one of the teams that should have been in the three-up 200 lap final was unable to take part - and so we were committed to the final!

We were still struggling but, just as the other teams were finishing, I realised what the problem was. Holding the model for a few moment before release, I noticed that the (new) needle was slowly unscrewing itself and causing the motor to run richer and richer! A sad saga - but now we could get on with the speed flying.

Our first flight was of a vintage speed model - a 'Little Rocket' powered by a Fox 59 vintage motor. This is a standard motor of the era and although not blisteringly fast, it does perform reliably and sounds really nice (to my ears, at least). Generally speed models are split into different classes according to engine

sizes. The fastest existing speed for any class is then taken as the 100% and your time on the day gives you a percentage result. Thus someone flying a fast 1.5cc powered model could quite likely come out ahead of someone flying much faster, but with a 10cc motor.

Vintage speed models invariably use a 'dolly' undercarriage for take-off. This is usually a three-wheeled wire contraption on which the model goes around until it is up to a suitable take-off speed and then the pilot lifts it off. Once the pilot thinks he has maximum airspeed, he signals to the timekeepers and then his next ten laps are timed. When the fuel runs out, he lands on the skid incorporated into the bottom of the fuselage. The trickiest part of the flight is getting a steady run on the dolly and a clean lift off - especially when over grass (as most speed flying is carried out on tarmac circles).

In this instance our 'Little Rocket' got away smoothly and performed to it's usual pattern with an average speed of 117.7mph - not a bad speed for an oldie, but still only 70% of the existing

class 7 record.

We then competed in Weatherman Speed. The Weatherman was a 1949 design by Cyril Shaw. This event is also split into multiple classes according to engine size. Class 1 replicates the original model, in that it has to be powered by the old Mills 1.3cc diesel. Our first entry for this event was in class 6 (up to 6.6cc). Modern motors can be used for this and so the actual record speed is fairly high. However, we tend to stick more to the spirit of an old model and use an elderly Irvine 40. Really we just prefer the sound! (a little like some 'petrol-heads' might prefer the sound of big old motors to modern F1's?).

Weatherman models have a fixed undercarriage and are timed from a standing start over a fixed distance ($\frac{1}{2}$ mile for Class 6). Of course, before any flight is made, there has to be a pull test on the model and lines - 45lb. for Class 6. Quite a worrying time, as you hold on to your relatively fragile balsa wood model and take the strain, whilst the person on the other end of the line seemingly tries to pull you off your feet!



Dick James' Phantom Speed model passes by.

The model survived!

The faithful Irvine started a treat and the model showed no hesitation in leaping into the air - recording an average speed of 94.8mph.

We also had a Class 0 Weatherman (a 70% version of the original plan) powered by a Russian 0.8cc AME motor. We thought we'd leave this until later, as the electronic timing unit has to repositioned each time different line lengths are used. In the end, we ran out of time and didn't get to fly it. Such is life!

Instead we had moved on to Phantom Speed. The Keilkraft Phantom was the model that, in the 50s and 60s, almost all youngsters would have built and flown if they were into control-line and now it's having a second life as a toy for no-longer-boy racers! It's available in plan form and also from several kit manufacturers with laser-cut parts now incorporated. Ours was built from the plan and was powered by a PAW 1.5cc diesel (there are two classes - one for up to 1.5cc and the other for up to 2.5cc). For some inexplicable reason, the motor just didn't want to start - the fuel flowed OK, it occasionally spluttered, but would not run - and all the while others were queueing up waiting their turn. If you like diesel engines and are of a nervous disposition, stop reading this now... because we used the electric starter on it! And off it went. Nothing very spectacular, but at least we got a time in. That's one that needs fully checking out before its next outing. We're thinking it may have been some slightly dodgy (old) fuel?

About then, Geoff had to leave, having another afternoon/evening commitment, leaving me with one more model to try - the other vintage speed model, a DeBolt Speedwagon with an old ETA 29 up front. This is a well-campaigned model with proven reliability and with a dolly incorporating large wheels, very capable of getting off the grass circle. But no pilot! Then I saw Chris Coote - a long time club member who many years ago moved to Brixham, but always comes up to support our Gala and who was also competing in the mini-Goodyear comp. I don't suppose he had flown a model off a dolly for years, but still didn't hesitate to 'be volunteered' to pilot the model! It started straight away and he gave me the thumbs up to release. Away

it went, but ¾ of a lap later it was still on the dolly. Just when I thought there was a problem, out it came and away it went. It seems he just wanted to be sure of enough ground speed before risking aerial action! It was recorded at 108.9 mph - not bad for an old model with an old standard engine. And we both enjoyed the experience - what more can you ask of it?

That concluded my days flying. The timing system had been put away and the results were being tabulated. Just time to reel in all the lines, clean off the models, check for damage (none, amazingly) and then wander over to the prize-giving.

And Finally...

Those hardy souls who had braved the heat and sun for the previous seven hours gathered at the end of the afternoon for the Prize-giving. Certificates and wine (42 bottles!) were handed out before the final farewells. Everyone seemed to have thoroughly enjoyed their day and "see you next year" was heard echoing around the field. Hopefully this will be so! I doubt that we will be able to guarantee such glorious weather, but we will guarantee a very warm welcome to our returning friends - and any newcomers! As for our 75th Anniversary Gala - we'll have to wait and see! ●

RESULTS: Team Race

Vintage 1/2A		
Pilot/ Pitman	Heat Time	Final Time
Haywood/ Haywood	4min 03.4sec	9min 04.1sec
Ross/Court	5min 12.9sec	10min 02.1sec
Green/Newbold	6min 14.3sec	178laps
Toogood/Lewis	63laps	

Vintage B		
Pilot/Pitman	Battery man	Final Time
Toogood/Lewis	Haywood	9min 01.9sec
Blades/Blades	Taylor	9min 38.6sec
Ross/Court	Millar	60laps

Vintage A			
Pilot/Pitman	Round 1	Round 2	Final Time
Ross/Court	3min 28.2sec	DNF	7min 04.5sec
Blades/Blades	3min 53.5sec	76laps	9min 28.6sec
Toogood/Lewis	3min 37.9sec	DNF	30laps
Haywood/Haywood	4min 11.0sec	3min 50.9sec	

Barton B			
Pilot/Pitman	Batterymen	Heat Time	Final Time
Green/Long	Newbold	3min 21.1sec	7min 10.0sec
Ross/Court	Millar	3min 29.3sec	7min 14.9sec
Haywood/Haywood	Leeman	3min 17.2sec	147laps
Blades/Blades	Taylor	3min 41.3sec	
Toogood/Lewis	Bradley	3min 47.8sec	

Mini Goodyear			
Pilot/Pitman	Round 1	Round 2	Final
Green/Long	5min 20.2sec	4min 56.3sec	9min 26.0sec
Coote/Leeman	5min 13.1sec	4min 58.9sec	11min 46.4sec
Hanks/Hanks	5min 40.9sec	5min 54.1sec	147laps
Smith/Jephcott	5min 32.1sec	DNF	
Jenkins/Timperly	61laps	56laps	

RESULTS: WEATHERMAN SPEED

1 Jan Huning	Class 1	57.75 mph	99.6 %
2 Tony Satchell	Profile	76.77	95.9
3 Jan Huning	Profile	76.59	95.7
4 Mike Edgerton	Profile	71.39	89.2
5 Tony Goodger	Class 3	97.81	88.7
6 David Hanks	Class 6	94.80	83.1
7 David Falmer	Class 1	46.13	79.6
8 Peter Rabjohn	Class 3	64.40	58.4

RESULTS: PHANTOM SPEED

1 Alistair MacNair	2.5	71.49 mph	81.0 %
2 David Falmer	2.5	68.79	77.9
3 Dick James	2.5	61.52	69.7
4 David Hanks	1.5	51.36	63.8

RESULTS: VINTAGE SPEED

1 Alistair MacNair	Class 2	83.24 mph	78.7 %
2 David Hanks	Class 5	108.90	73.1
3 David Hanks	Class 7	117.67	70.4

RESULTS: PROFILE PROTO SPEED

1 Alistair MacNair	29 Class	87.7 mph
--------------------	----------	----------

RESULTS: CLASSIC AND PERKY SPEED

No times recorded

DOPING THE EZE WAY

ANDY SEPTON TAKES US STEP BY STEP, COVERING A SMALL MODEL USING DELUXE MATERIALS EZE DOPE...

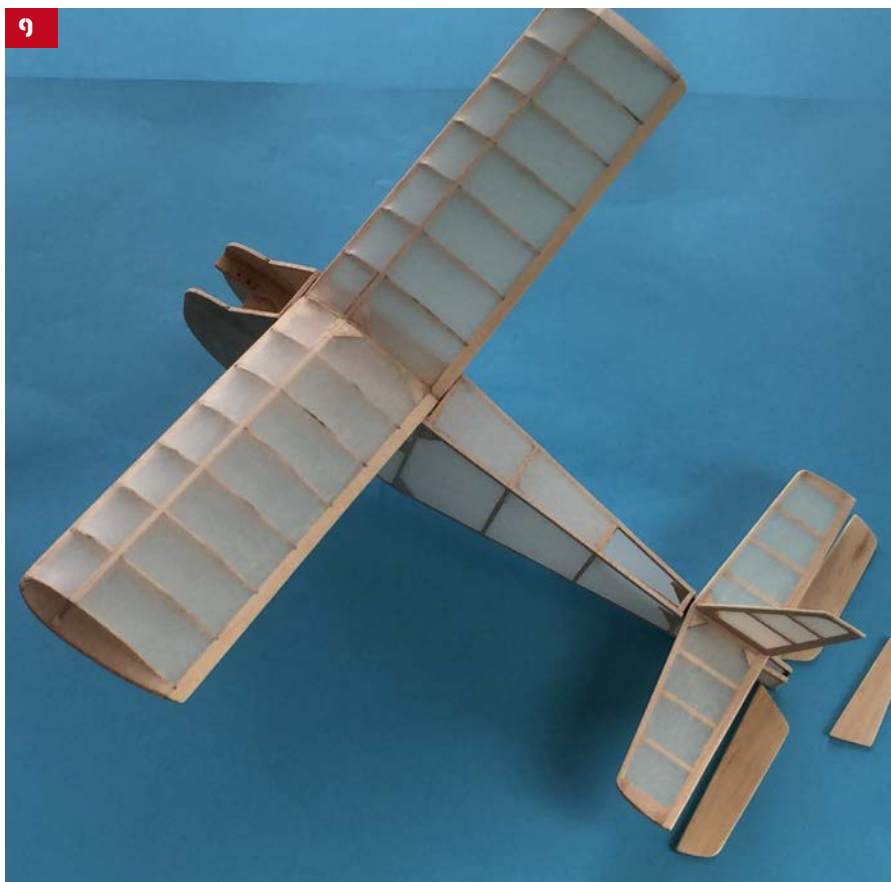
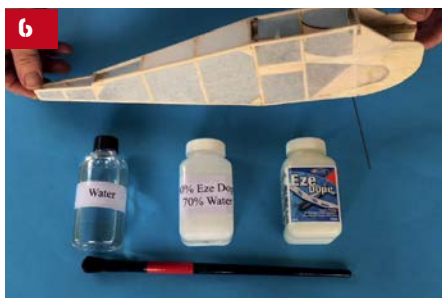
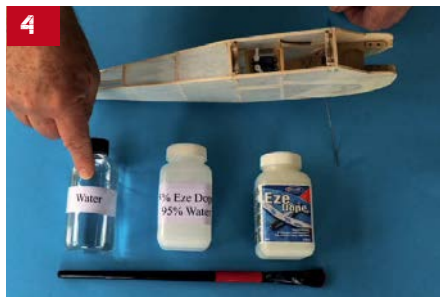
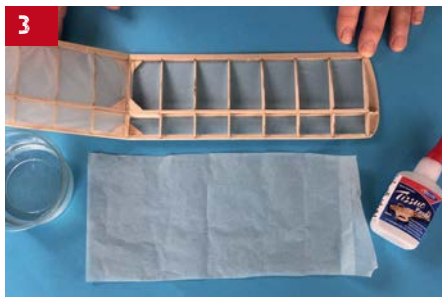
Eze Dope is fast becoming the best clean, safe way to shrink, airproof and finish tissue covering on a model aircraft. It has a number of benefits. It can be applied indoors and thinned with water. When dry, it is stable and non-sagging in humid conditions and

the finish can be adjusted with multiple coats. Tools and brushes are easily cleaned with water.

I wrote this article using my latest SAMS Models Pippit 21" wingspan cabin model design to show you, in simple stages, the best way to use Eze Dope.

The ready to fly Sams Models Pippit - all we need is a calm day!

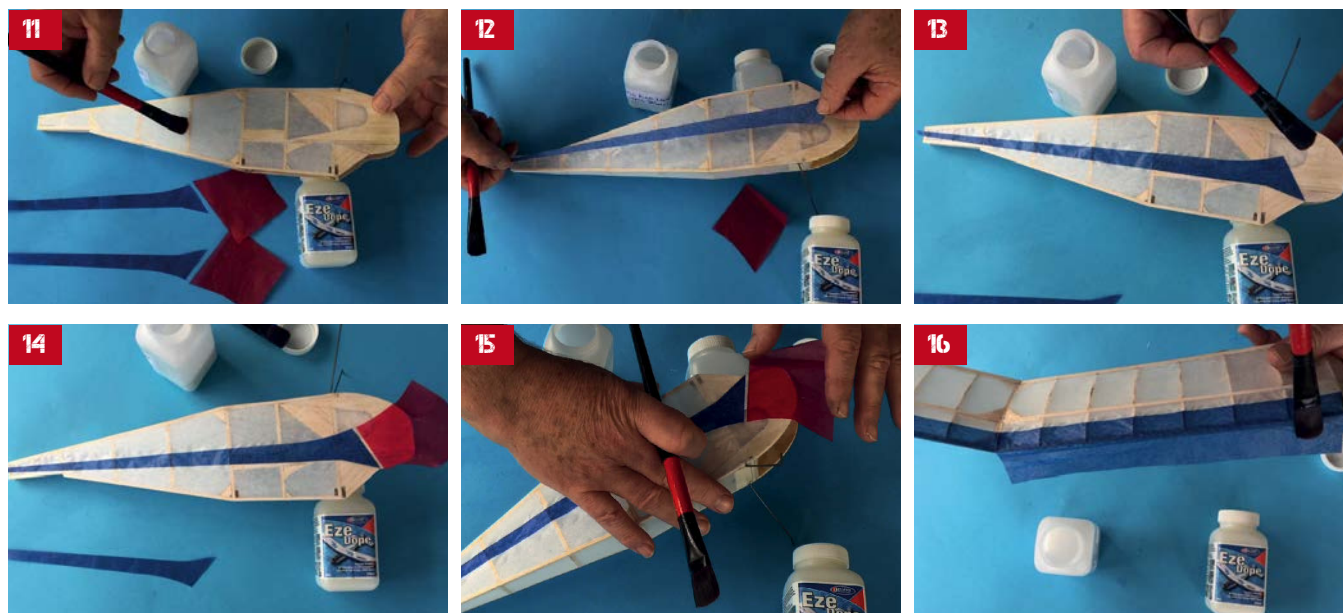




1: Here is where we start -The new Sams Pippit kit with beautiful laser cut parts plan etc.
2: The model was built using Super'Phatic! glue covered with Esaki tissue and is now ready for the shrinking and finishing stages.
3: An important point is that the covering tissue was bonded with Deluxe Materials Tissue Paste. The brand new formula was developed specially to work with both conventional cellulose dope and Eze Dope. **4:** Here you see the finished airframe ready for pre-shrinking. A 5% solution was made up (5 parts Eze Dope to 95 parts water). **5:** The thinned solution was brushed onto the frame with a soft head brush being careful not to push too hard. **6:** The airframe after drying, now shrunk with the 5% solution of Eze Dope and now ready for doping. **7:** The doping process uses a more concentrated solution - 30% EZE dope to 70% water. This guarantees a great finish without puddling and blotchiness that can occur if used neat. Here the wing is being doped, but we use the same solution for all the airframe. **8:** As a diesel engine was being fitted we doped the engine bay with Eze Dope solution. **9:** The finished model with flying surfaces - all beautifully shrunk and ready for final finishing and decoration. **10:** Coloured tissue trim for the fuselage, ready for application.



Dope Alternative



11: Brush a small amount of Eze Dope 30% solution where the trim is to go. **12:** Lay the coloured tissue in place. **13:** Brush on the dope. It is nice and sticky, so seals the tissue in place. **14:** Similarly, place the red tissue trim. **15:** It is easily folded round the edge. **16:** The leading edge of the wing is decorated in same way, and the blue tissue easily folds round the LE.

A final word, or two...

Deluxe Materials Ltd Eze Dope is a great safe clean way of shrinking and airproofing tissue-covered model aircraft. If you haven't used Eze Dope before, I hope this short article will inspire to try out this new technique. ●

Sources:

Sams Models who distribute the Pippit kit and sell Deluxe Materials Eze Dope and Tissue Paste. Tel. 01480 394474. Deluxe Materials Eze Dope and Tissue Paste is available to the trade through their international distributor network including Ripmax Ltd (in UK and Germany) and Horizon Hobby in North America. In case of difficulty it can also be purchased on line at www.deluxematerials.com Free phone 0800 298 5121 and shipped worldwide.

The Pippit is looking good, and just needing the diesel engine and wheels to be fitted.





SinBad the Sailor

Offering over 90 original retro & vintage RC and FF model airplane kits plus many unique laser cut accessories, building jigs, tools organisers and glue caddies



1913 Eastbourne Monoplane



1937 Slingby T.7 Kirby Cadet

Download your free catalogue at www.RetroRC.us.com
UK dealer enquiries welcome

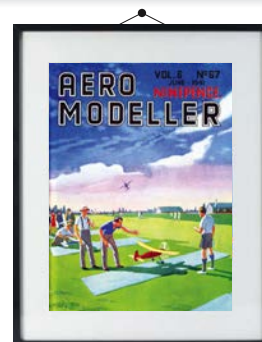
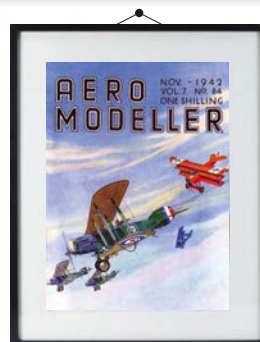


www.RetroRC.us.com

retro RC & FF model aeroplane kits



Vintage Limited Edition Prints



visit: www.aeromodeller.com for the full range



Vintage **AeroModeller** A3 Cover Artwork - *Limited Edition Prints*

Part 36 BETTER... RETRIEVAL⁵

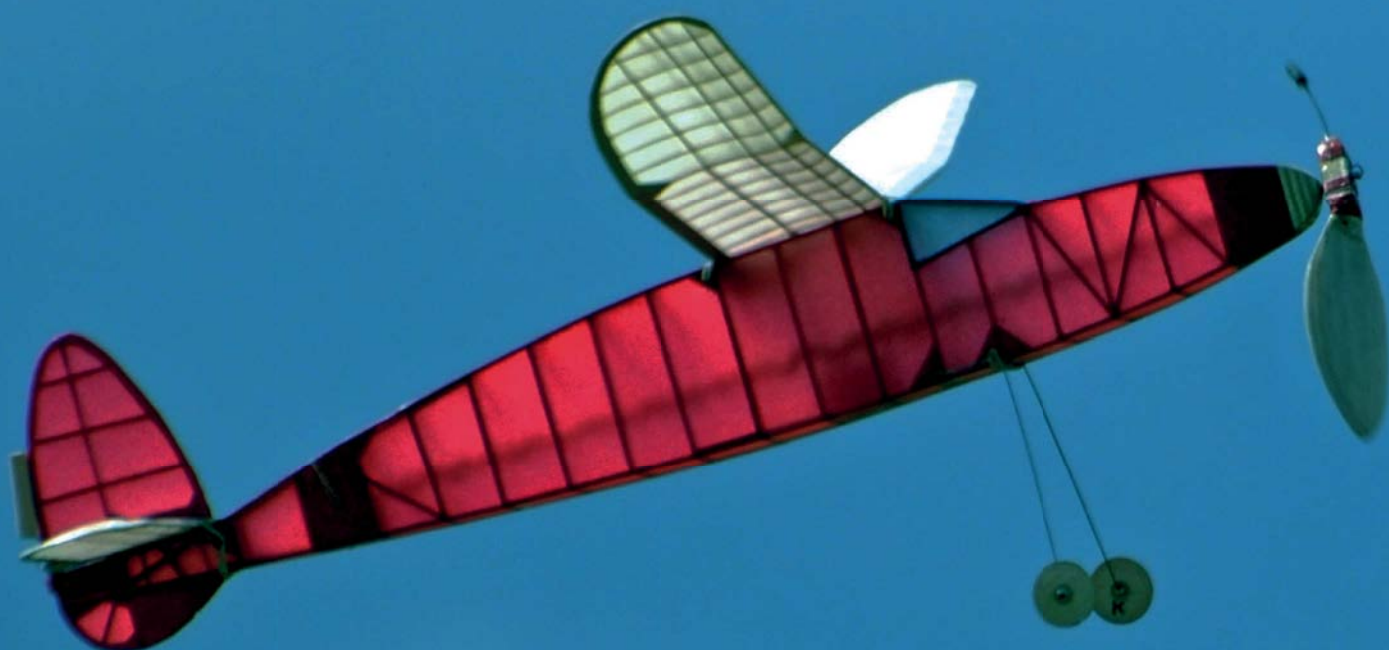
Dave Hipperson continues his opus on 'Retrieval' with his thoughts on calm weather recoveries...

Things can go wrong very quickly on calm days. In theory, models shouldn't go as far. Don't you believe it! Furthermore, it can be tempting to have a trim flight and not bother with a bug and perish the thought of ever not bothering with a DT! Never fly without an operating bug. Not even a hand glide. I have heard of people making a test glide down a slope with a glider, no bug, no DT - and having it hold into the breeze long enough to contact lift and then fly away. Never launch a model without a bug in it. Not in any weather.

The best days for tracking long flights are probably the windy ones, as the line stays fairly reliable. The worst are the very calm days when models can go off in all sorts of unexpected directions. By that I don't mean just a bit off line, either. I mean unexpected - really unexpected!

There was a fairly calm afternoon on Church Fenton - just a slight Southerly drift. I was talking to Ewan Jones just before he made a Slow Open Power flight. It gave me a chance to study his timer set-up and other details on his model. This was to be crucial, later. He flew and the model found very strong lift and failed to DT. To be doubly annoying,

it then drifted upwind - in other words, it went South. We watched it disappear a mile or two away at some altitude after about half an hour. Ewan did not have a tracker bug on it, otherwise we would have been mystified by what must have happened next. In the practical sense, the model was not worth pursuing. We had lost it still climbing way out and up and going South. Indeed, we all had to move around the 'drome for the rest of the afternoon to finish our flights, as the drift had settled in this direction. A little before the fly-offs some hours later, we all had to move back because the drift re-established itself again from the South.



Always keep a camera with you, especially on calm days, as you never know what may come drifting by - like this magnificent Korda Wakefield on low turns.



At the Timperley Gala in 2015, by the time of the power fly-off, the conditions which had been benign all day, reduced to virtually flat calm. Allan Brown from Northumberland flew this beautifully built and 40-powered American 'Trickstar' design. He got away first and whereas nearly all the competitors scored good times, Allan's model found the best air and it was in it for nearly half an hour. So long indeed that the next fly-off for Open Rubber had to be postponed, as his timekeeper, Ivan Taylor, had qualified for that and was still timing when it should have started. Allan's flight was seen down in front of a line of trees on the horizon, only a mile or so away!

We flew-off still in relative calm and even the long flights only went a couple of fields out of the 'drome to the North (the short way), mine included. Ewan was not in the fly-off – he may have elected to stop and go and search for his flyaway in the other direction, but I know he wasn't there on the field at this time. I was recovering my fly-off flight and, about half way across the first grassed field outside the aerodrome, I spotted a power model – it clearly wasn't mine, but I went over to it to stand it up so the owner would see it. To my utter amazement it was Ewan's model! The model he had lost going in the other direction some four hours earlier. Now I know this to be a fact, and it wasn't just another of Ewan's models because as I said, I had studied the timer set-up and noticed it's unique complexity before he flew. This was the same model! None of the other flyers also searching for their fly-off flights could quite understand why I was getting so excited. During the afternoon, Ewan's model had turned around and come back! It could have actually landed at our feet, but it went on a bit to go diametrically the other side of the 'drome. That's 180 degrees off line! Or should that be on line, just in the other direction! It must have been in the air for half a day.

This is not unique. Mark Croome had something similar happen at Merryfield

when flying one of his Vintage power models, a Swiss Miss. A lovely warm thermally day with a gentle drift towards the North East and Mark's model was way up in lift and never dt'd. It slowly disappeared high over the famous Somerset Levels. Later that afternoon, the model was seen on the peri-track a few hundred yards away from the cars! First thoughts were that another modeller had brought it back, but it was lost at enormous altitude and even if a flyer had chased it and found it immediately, the time taken would have been enormous and furthermore, he would have been too delighted to have done anything other than find Mark and give it to him personally. No - the model just re-appeared upwind. The only alternative was that there had been a drift reversal at altitude. But to bring it back so close!

Many of us know that one of Joe Barnes' Wakefield models disappeared on Barkston on such a day. He forgot to start the timer and last he saw of it was way up at a neck-straining angle and this was before tracker bugs, so there was no point in going after it. Fact was, it wasn't quite the last he saw of it, because later in the day it made another appearance, lower but still way up. It was once again watched closely, in fact even more closely, but as if just to taunt the owner, it began to climb again and disappeared

forever. Well, not quite, as it appeared again quite a few times during the day, just hanging there way up on the edges of visibility. Don't want to get mawkish about this, but although some people have possibly jokingly suggested that it can still be seen occasionally on warm calm afternoons, maybe it can no longer. Joe passed away some months ago, so we can presume he has now found it!

So be extra attentive if losing a model on a very calm day, and don't necessarily get too physical too soon. Presume nothing. If time allows and you are not committed to making more flights, or you have got someone that will do this for you, then get a Yagi out and track it's direction until that signal goes off and don't put the aerial down until it does. I have stuck an aerial up on a pole and left it listening with one ear while I got on with assembling another model more than once. Be sure you know the direction before you start worrying about distance. Even though it is out of sight, it might be simply because you are not looking in the right direction. It could lead you a merry dance later if it has gone off at a crazy angle, as you will start searching too far from it and possibly never hear it. Try always to know in what direction it has gone. It could be back in your car – check there first!

I had a F1B flight at North Luffenham



Gerry and Pearl Ferrer timing at the Scots Nats in 2000. It's difficult to know quite what to do when there is no wind, but plenty of lift. Holding this angle is both difficult and extremely bad for the back. Definitely best one of you at least sits, or better still, lies down! Whatever happens, make sure someone is listening to the tracker bug and get its direction as it goes off!



Mark Croome's vintage Swiss Miss power model at Merryfield. It mysteriously returned itself to the upwind end of the aerodrome after it being lost downwind at altitude some hours before.

on a very hot calm and slightly hazy day. The model was very high and difficult to see after only two and a half minutes. Then, when it dt'd, it moved in the sky and everyone watching lost it. We listened to it for a little over 12 minutes and it went off. There was a slight South Easterly breeze, the model was headed for the main buildings, and that time in the air should have taken it clear of them and out of the 'drome into open farmland. I would usually have cycled around and started searching at the end of the field, however, for some reason I assembled the Yagi and started walking across the grass. Expecting to have to leave by the main entrance and be looking at finding it a field or two outside, I had only got about half way cross the aerodrome when I got a huge signal - and there it was in front of me! Nice surprise - it had hardly gone anywhere. Beware the calm flyaway - they can be deceptive. If I had cycled around and put the radio back on when outside the 'drome, that model might still be there on the grass to this day!

Possibly the best thing is to simply sit down and let it come back. Trevor Payne had a coincidence also when

flying at Church Fenton. He had a huge fly-off flight before the days of bugs. He spent ages searching for it and returned without the model to find it next to his car. John Pool had been driving home from the comp and seen it land miles out. Picked it up and brought it straight back for him.

At a trials event on Barkston, at which I was not flying, just visiting, we popped off at lunch time to a very distant pub more than 20 miles away. As we returned, we saw what looked like a model in a field. I went across to it and it turned out to be Tim Nicholson's A2 which he had lost with dt. failure on the first flight that morning. We were 15 miles away from the 'drome and nowhere nearly directly downwind! You should have seen the look on his face when we gave it back to him! A great moment.

You lost it and when you got home it was in your garden

Of course, this is the dream retrieve and it might be thought that to start with, the wind has to be in the right direction. Well, it helps, but it isn't essential.

My contribution to this genre was very early on in 1961 when I was flying a Caprice on Epsom Downs. Had many

flights during the day and tried one last one quite late in the evening when it had calmed right off and thermals were expected to have stopped, so didn't bother with the dt. Light South-Westerly drift and the model just flew off the top of the line and to my astonishment it didn't descend. As it reached the edge of the Downs, it gradually gained height over the funfair in place for the Spring Race Meeting, to be eventually lost after some minutes at a great height going North East. Now this happened to be roughly the direction of home - over twenty miles away. Didn't hear anything for a week, then someone phoned from Sydenham - they had found it on their allotment. This was only 4 miles from where I lived and it had managed to clear the Crystal Palace hill on its way. Good effort, considering it was launched late in the day and on a very light drift, but not exactly landing in my back garden! Andy Crisp has done much better - twice. He has had a number of models in his garden after a comp, but not actually his, and to be fair, that was when the drift had been in the perfect direction at one of his Port Meadow events. Many models out-flew the field that day and when he

got home, he could pick some of them from his trees like fruit! Best of the bunch has to be Trevor Payne, who, back in the days when the South Midland Area used Henlow, lost a fly-off flight into a huge thundercloud. Impossible to search for, of course, so finally he went home. It wasn't far, he has always lived in the Midlands area and Henlow was only 30 miles away. When he got home, his model was waiting for him! Obviously someone had spotted it and, realising his address was relatively local, had simply taken it there and getting no reply left it in his porch. Well, you would, wouldn't you?

Andy had a similar one to Mark Croome's from his local field, Port Meadow, back in the summer of '66. He had the day off to prepare for an interview for a new teaching post in the afternoon, so as it was a calm morning he went straight out for a spot of trimming - as you would! A friend of his the late Neil Webb met up with him and helped with a few launches of a new A2, before Andy got it properly sorted and properly into a big thermal. The dt timer failed as they always do in the big lift. The two of them watched it climb ever higher going gently North-East and, as it was the 'old days' and traffic was lighter and we did things slightly different then, Neil Webb offered enthusiastically to 'chase it in his van!' Off he tore and did well. He followed it for five or six miles, but it simply wouldn't come down and eventually disappeared into the cloud. He returned to tell the sorry tale and that

was that. The next day Andy received a very fancy postcard - remember when the post could do that sort of thing for you? - from someone who explained that they were having tea on their patio when "your glider landed on my lawn." No real surprise, except that the lawn in question was of a house just off the edge of Port Meadow itself. Furthermore, the model had been airborne for something like five hours. Like Mark's and Ewan Jones's - and possibly many others - it had gone out and back to nearly the same spot. Maybe that was what Joe Barnes model was trying to do. Fascinating.

So the trick is, when losing one in the calm, to expect the unexpected and more important than anything, keep tabs on the direction the signal is coming from. It isn't much help to try to keep watching it, as you risk straining your neck and invariably the model disappears anyway. If that turns out to be directly overhead, then you have no option but to decide whether you want to continue flying and possibly never hear the model down yourself, or spend the rest of the day (and possibly into the night) standing there with a Yagi pointing into the sky. That moment when it goes off, it is essential that you have a direction, otherwise which way do you walk? It has to be said, it would be in situations like this that the GPS system would have the edge.

Next month... when retrieving is much easier - when it's properly windy! ●



Phil Ball's big Open model. As calm weather fly-offs go, the day of the Team rubber event in 2004 goes down in history! Huge times of 30 and 40 minutes were put up all over the country that night. However, Phil, with his distinctive and businesslike 600sq. in. creation, topped the lot with nearly an hour and a half! Note the fluorescent spray on the Mylar, the fin, and the generally dark appearance on the uniformly coloured model - all the correct ingredients for the best possible visibility. The sun had set and darkness was approaching, but the model was still high in the sky and reflecting the sun like a meteorite. Timekeepers holding binoculars for 90 minutes were being fed liquids through straws and were brought reclining chairs and blankets to keep them warm. The model was retrieved - but not that night. (Photo: Mike Woodhouse)



Sue Hipperson holds the author's SST1 Open Rubber fly-off model on his local field, the day before it won the Southern Gala for the second time. This 550sq. in. model built in 1983, and still in flying condition, was one of the first such large designs that became very popular for calm fly-offs in the '80s and '90s, both for visibility and glide performance, being able to make use of the gentlest of lift.

Spencer Willis also used a large fly-off model when possible. This one is about to be launched in the flay calm of one of the last competitions held on Woodbury Common in Devon.

The Passing of Giants

Bernard Seale pays tribute to two late great Scale Control line Heroes...

Mick Staples ((1931 – 2017)

Some weeks ago I received an e-mail from Margaret Staples with the subject line of 'Mick'. I opened it with some trepidation, guessing what the news might be, and I was correct. Michael Sydney Frank Staples, although all his acquaintances knew him as Mick, had passed away at the age of 86. I first met Mick and Margaret when I started flying Control-line Scale (F4B) at the National Championships in the late 1980's. By that time Mick had been a serious aeromodeller for many years, flying C/L Scale at the highest levels.

Mick was a member of the British F4B team, together with Mick Reeves and Derek Goddard, at the World Championships in 1972, which were held at Toulouse in France. He also won the Knokke No 2 Trophy at the British National Championships on at least six occasions. He entered models in the

Model Engineer Exhibition many times and won the Bristol Cup there with his Bristol Bulldog control-line model, which also made the cover of *Aeromodeller*, April 1979.

Early Days

Margaret tells me that Mick started modelling at the age of five, knocking two pieces of wood together to make a fuselage and wings. At the age of eight (1939, and we all know how significant that year was) he was given a model aircraft kit of the type used for aircraft recognition by an Air Raid Warden, and this really got him hooked into modelling scale aircraft. His passion was in control-line scale modelling, but he also delved into free flight and radio control, not only of aircraft but also of model boats.

It seemed only natural that Mick would join the RAF and he did so, carving out a career as a Master Navigator, flying

in Gloster Meteors and Javelins for 18 years. He was very proud to be one of the aircrew to land in Zambia at the time of their troubles. He used to say that he saw the world at the Government's expense! After leaving the RAF after 18 years service, he joined a branch of Lloyds Bank in Cambridge, becoming a chief cashier. Mick developed his interest in model aircraft and boats into the full-size versions and became a qualified yachtsman and glider pilot. Living in the Cambridge area, the Shuttleworth Collection at Old Warden was a magnet for him and in the early 1970's he started the model club there, which led on to the well-known model flying weekends there, subsequently organised by several publishing companies over the years, and now run by ModelAir, on behalf of the Trust. One year his CL Avro 504K won the Shuttleworth Trophy, awarded annually for the best model of one of



the Collection's aircraft, usually won by one of the RC models. The only other CL model that I can remember winning that trophy was the Hawker Hind built by Derek Goddard (and more recently the Comper Swift built by Trevor Tabor – Ed.).

His Other Half...

In all this, Mick was supported by his wife Margaret, who he married in 1954. In fact, she became so involved in his modelling that she was the Contest Director for CL Scale at the British Nationals for several years - showing no family bias, of course!

When I first met him at the Nationals, I found him to be friendly and helpful, with no airs and graces in spite of his previous achievements. His models were immaculate and when he went out to fly, his preparation had been so thorough that there was no delay in getting his engine started and the model in the air. We met again at more Nationals meetings and I often bumped into him and Margaret at the Old Warden Scale weekends. He leaves behind his devoted wife, three children, eight grandchildren and two (possibly now three) great grandchildren. Thankfully his models have survived, having been bought by members of the Impington Village College Model Club (of which both Mick and Margaret were members), with the

promise that they will be flown. Margaret has been made an honorary member of that club and will attend as much as possible because "they are such a nice crowd".

Bill Brown

When Margaret e-mailed me with the news of Mick's passing, she asked me to pass on the news to others in the Three Kings Aeromodellers club who had known Mick, which I did, and then I decided to call a few others who might have known Mick. One such was Bill Brown from Edinburgh, who those of us in CL Scale had known for many years. I duly rang his telephone number and his wife Ruby answered. I asked, "Is Bill there?" and Ruby informed me that Bill had passed away a couple of years earlier. I felt awful! Ruby had tried to get in contact with many of Bill's contacts list to tell them the news, including myself, but with little success.

Bill was a real character, with a dry sense of humour. Once again, I had met him in the late 1980's at the British Nationals. At that time, he was flying an Ansaldo SVA biplane with very distinctive paintwork. Unfortunately I don't have a photograph of it, having lost a 'folder' of photographs in an ill-advised computer switch from Windows 7 to Windows 10!

Over the years, Bill built a wide range of models for CL scale, from Dornier

seaplanes, multi-engine types, and of course biplanes. Also he was not afraid to tackle complicated types such as the Caudron G3 and large models like his four-engined Tupolev 'Bear'. PhotThe photographs will give an indication of the variety of his work. I can also remember a Boeing 'Peashooter' flown at one of the Fairford Nationals way back when – but once again, no photograph, I'm afraid.

As far as I am concerned, CL Scale in particular, and aeromodelling in general, have lost two of their greatest exponents. RIP, both of you.

Signing Off.

Having written a regular column in Aeromodeller for many, many years, I am unlikely to be writing any more 'In Scale Circles'. At the age of 74, and with increasingly dodgy knees, ankles, and balance, I am unlikely to make it to many meetings this year, and I will not be embarking upon a serious scale model build, which I know would take me at least a couple of years to complete. Also 'the spark has gone out'! I have certainly enjoyed writing for 'Aeromodeller' and 'AMI' over the years, and hope that someone will be willing to take my place to promote this discipline of our wonderful hobby.

(I would certainly like 'In Scale Circles' to continue – any volunteers? – Ed.) ●

1: Mick Staples holding his completed CL Miles Magister.

2: Mick and Margaret's wedding day, 2nd September, 1954.

3: The camouflage on Mick's RC Fokker DVII was hand-painted.

4: Mick relaxing with a Radio Controlled boat.

5: Margaret and Mick enjoying sailing on Coniston Water.

6: Mick's Shuttleworth Trophy winning Avro 504K.

7: Mick with his Bristol Bulldog Mk 2 at the Nationals, early 2000's.

8: The Bulldog on the cover of Aeromodeller, April '79.

9: Bill Brown with his Avro 504K at the 2013(?) Nationals, the last time I saw him.

10: Bill's 96" span Tupolev Tu-142 'Bear', weight 9lb.

11: Bill's Caudron G3.

12: Bernie with his wife, Carol, at the Nats 1998, and his Gamecock 1. (Photo: Wal Cordwell)



THE FIRST ARTF?

Ian Titchell tries out a Frog Single Seat Fighter Mk.V...

Well, this review is a little late, 61 years to be precise! The model in question is a Frog Single Seat Fighter Mk.V and the price list in the box is dated January 1st 1956. I had originally thought about doing a spoof review for *Aeromodeller* in the 1950's style.

However, I also thought it would be very interesting to look at the model through modern eyes. After all, many of AM readers will remember them with fond affection, but I suspect an equally large amount won't have seen or heard of Frog aircraft.

So let's start with a brief history lesson. Not the really boring stuff like 1066,

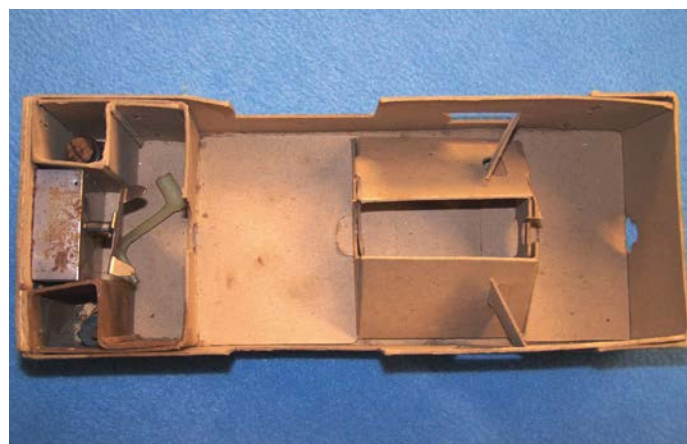
but a backwards glance to the early aeromodelling scene, to get a flavour of the time when this model was released. Now, fortunately, I can't claim first hand knowledge of the period, as I wasn't born when the model was produced. However, I have been looking through some *Aero Modeller* magazines of the period, which provide an insight into the

The very original ARTF, circa middle '50s? Obviously used, not a collector's pristine piece, so we flew it again!





The Box artwork is presentable even today - the Aeromodeller Annuals from the time, however, look very much period pieces.



The art of the boxwork - to hold the model in transit - and to allow winding the rubber motor!



Winding instructions are very clear - motor lubrication advisable!



The supplied plastic prop and tinplate gearbox assembly.

aeromodelling scene of the mid 1950's. Before we look at the typical contents of these magazines, it's important to realise that this model was produced only 11 years after the end of WWII and Britain was in the process of dismantling its Empire. Oh, and at this time, man had not yet sent anything into space - and computers were even thought of. Times were very different in some ways - and yet in others they weren't so different.

So let's look at the sort of thing you would find in a magazine of the period. The first thing that would strike you nowadays is the lack of colour and that the cover price is 1/6 that's one shilling and sixpence; this is pre-decimalisation, so prices are in pounds, shillings and pence. Virtually all the adverts are for products made in Britain. Typically, the magazine contains several full pages of recruitment adverts for the RAF and, sometimes, the Fleet Air Arm. It's clear that the main flying disciplines were control line and free flight - radio control

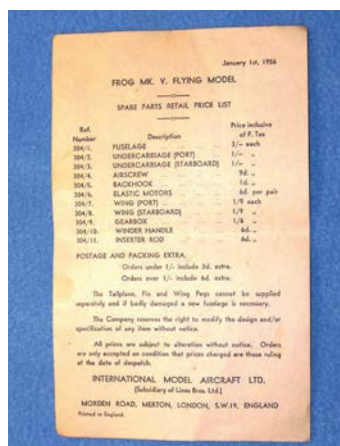
was very much in its infancy and appears to have been very unreliable, with heavy, bulky gear. Adverts still included solid balsa models and plastic kits like Airfix were only just starting to appear.

It's clear that flying models were smaller than we are used to now, and virtually all would have been built by the modeller, either from kits or plans. If the model had an engine it would probably have been a British-built diesel, or perhaps an American sparkie. There were a few glow motors around, mainly from the United States. In January 1956, Ron Warring reviewed the K&B Allyn "35" (that's a 6cc motor in modern units) and it's interesting to note that he commented that anything as large as the K&B 35 is regarded as a "brute of rather frightening performance". The names of the companies that were advertising in AM include the likes of Mills, ED, Davies Charlton, Veron, Frog, Jetex, Humbrol, Mercury and KeilKraft. What surprised me was how many of the models were

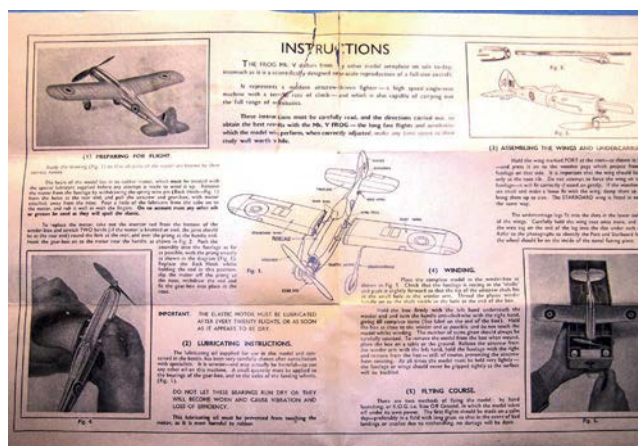
still in production many years later, at the time I started aeromodelling.

My early days

I don't know about you, but my first real introduction to aeromodelling came in the form of a Christmas present. In my case it was a KeilKraft Senator kit, but perhaps if I had been born ten years earlier, it might have been a Frog Single seat fighter! That's a convoluted way of introducing the subject of this review, so let's look at this model as something that would primarily been intended to introduce a young lad into aeromodelling. Sorry about the sexist bias, but in the 1950's, girls were pretty well expected to play with dolls! I should caution you, these old original models can be quite valuable to collectors and if you find a pristine one, you risk destroying its collector's value if you play with it! Fortunately, I found one at a club table top sale and since it had not worn well, I decided to have a go at flying it, so that



A full list of replacement parts were available - and fixed prices given in shillings and pence.



The instruction sheet looks very comprehensive with photo illustrations.



The ravages of time, or the results of early flying attempts, who knows when!

I could compare its performance with modern ARTF offerings.

Assembly

The Frog Fighter is a very early ARTF model; what's more it's British. In the box you should find a printed instruction sheet and, if you are lucky, a spare parts list. Inside the box you may find a paper seal over the model. If the seal isn't broken, then think carefully about removing it as you have an unused example, which might be worth £70, or more, to a collector.

The first thing to strike you is that the fuselage is pressed from thin aluminium sheet. Think in terms of an aluminium tray for takeaway food and you will have a reasonable idea of the sort of thickness we are talking about. The tail surfaces are made from printed silver card. Likewise the wings are predominately silver card, although the wing roots are a green plastic moulding. The nose of the model features a pressed tin gearbox and a small plastic prop. The model is powered by winding up a small rubber motor (a rubber band) and is a free flight design. Yep, that right, you wind it up, point it into the breeze - and the let the model go!

The box for this model is actually quite important, as it also serves as the winding mechanism and storage container. You should find a small nylon handle, which is plugged into a tinplate built-in gearbox fitted in the end of the box. Obviously after over 60 years in storage, the rubber band motor in my model was no good, so I cut a wing band into two strips and used one of them as the motor. However, before we try

winding the motor, we need to assemble the model. This is quite simple, as the wings merely plug onto the fuselage and the wheels can be plugged into the wings if you want to fit them.

For those who don't know, the name Frog is an acronym of "Fliers Right Off the Ground" but so far I haven't put this to the test. However, I was going to try and make the model fly, so I needed to inspect it carefully and correct any faults that had accrued in six decades of storage. The main problems I found were warps to the wing and tail surfaces. Obviously I didn't want to destroy the model, so I had to keep any work to a minimum. In the end I found that I could get the worst of the warps from the wing by gently pressing the leading and trailing edges towards each other. That was enough to pop the wing back into shape. The fin was more of a challenge as it was bent near its tip. In the end I straightened it as best I could and dropped a tiny amount of cyano into the crease, which at least stiffened it so that it was roughly aligned. The tailplane didn't look too bad and some gentle twisting soon had it roughly straight and level. Rather remarkably, the original lubricant for the gearbox was still usable, but the rubber lube for the motor had long since gone. The model is very clearly a product of its times. You have to realise that plastics had not achieved widespread use at the time the model was made, hence the pressed tin and aluminium. I am sure that the editor would be interested to hear from and perhaps publishing recollections from anyone that remembers flying this model

in the 1950's. For me, the acid test is whether it flies at all, today!

Flying the Viper

Transport isn't an issue, as the box is roughly 4" deep, 3" high and about 10" long (none of those nasty metric units for this model!). Setting the model up isn't very demanding either, as the wings simple pop on and the canopy clips into place.

So all I need to do is wind it up and let it go and I'll have a perfect flight. Yeah, I wish!

The first stage to making this model fly is to read the instructions if you have them. If you have flown free flight before, then you'll know all about the importance of test glides to make sure the model is in trim. So we need to make the model glide as well as possible before we start using the motor. You launch the model, using a technique similar to throwing a dart. Make sure you launch it right into any wind and don't throw too hard. What you want to see is a straight glide with no signs of the model rolling to one side or any signs of stalling. It's best to wait for some calm air weather to try initial flights.

It can take a while to get the model to glide properly, although I suspect that in the case of this model, its age and condition may have contributed to the difficulty of trimming it to fly. The early attempts were pathetic. It was badly out of trim so I had to persevere to get to a reasonable trim setting. In deference to the age of the model, I wasn't going to try too hard to make it fly. It's been a while since I did any of this, but it was actually quite fun although I did feel a bit like a grown man playing with a kid's toy at times! Eventually I got it to fly,

although the test glides were around 20-30 yards or so perhaps less, at best.

Once I had got the model trimmed as best I could, it was time to try it with the motor and it flew after a fashion, although the weather conditions weren't perfect. Eventually it crashed and bent the prop shaft, so I had to stop and the chances of getting a spare don't seem high. After all this is the first Frog ARTF model I have seen in my life. Fortunately, I was able to straighten the shaft to make it serviceable, so I will wait until the elusive calm summer evening comes along. Sadly, I haven't got any flying shots, as I wasn't able to get the weather and the photographer to coincide. This model is really for those nice calm summer days that we didn't seem to get this year. I know that it will fly and is great fun to play with as, while I was messing around with the model, Ed turned up with

SPECIFICATIONS

UK Distributor:	You'll be lucky to find one, but they do surface from time to time!
Span:	12" (305mm)
Length:	9.5" (240mm)
Motor:	A loop of rubber (a cut down wing band for the review model)
Weight:	A couple of ounces
Assembly Time:	About 10 seconds
Price:	Could be anything up to £70!

YOU WILL ALSO NEED:

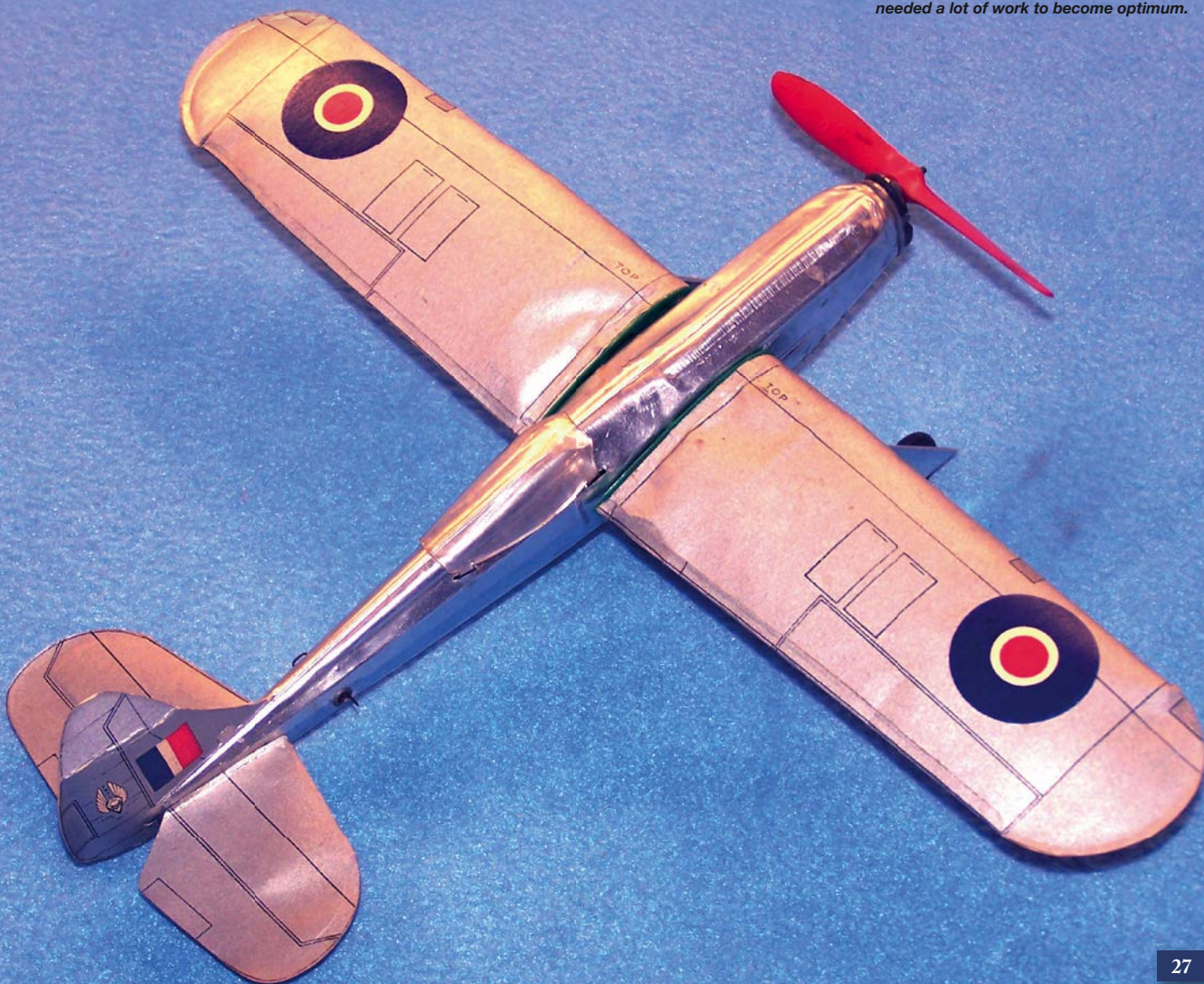
Not a lot - some elbow grease (light duty!) to wind the motor
A calm day for test flying.
Some Blu-tack or Plasticine to aid trimming.

his young son who was fascinated by the whole thing and the smile on his face when he got a chance to wind the motor was brilliant. He's only two but give him a few years and he will be pestering his dad for a model and a chance to fly!

Perhaps Ed will have to source a simple ARTF free flight model for him as a Christmas present. Clearly those

guys at Frog knew a thing or two about the market fifty years ago. Couldn't happen today? Don't you believe it! Just look at the success of those foamie Lidl gliders - a number of modellers have even converted to radio control. Mind you, I don't think it is possible to convert the Frog Single seat fighter to RC, but I would love to be proved wrong! ●

Ready to fly again after all those years! It flew, no doubt about that, but the performance needed a lot of work to become optimum.



INDOOR SOPWITH BABY – ON FLOATS!

Ken Sheppard's design for indoor RC scale...

This plan and article was first published in 'Flyer' in Jan 2004, when RC Indoor Scale was very much in its infancy. Since then technology has marched on and smaller, perhaps more powerful - and definitely lighter - powertrains are now commercially available. The model in its original form was a great little flyer and if built today, using the latest gear, the weight and performance could be improved on - so why not build one over the winter, fly it

at your local indoor meetings - and take part in the BMFA Indoor RC Scale comps planned for next year?

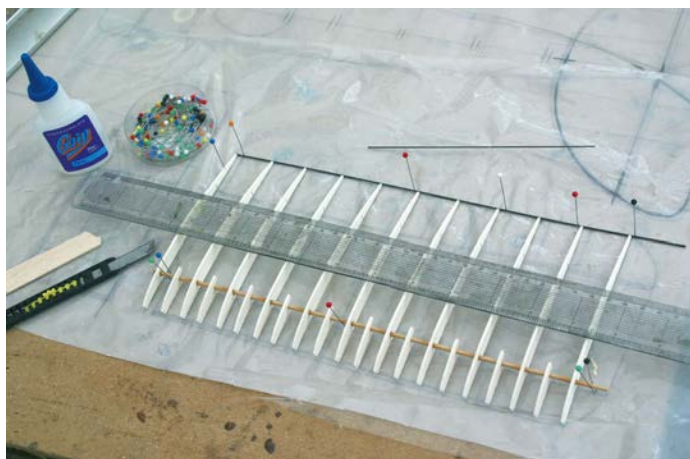
Indoor Baby

Having struggled over two seasons some time ago to achieve realistically slow scale flight, with a true scale structure airframe, I've never been able to get down to my ideal wing loading of 2.5oz/sq.ft. that would allow that elusive low flight speed. Both of my earlier indoor scale designs, the AW FK3 (Model Flyer

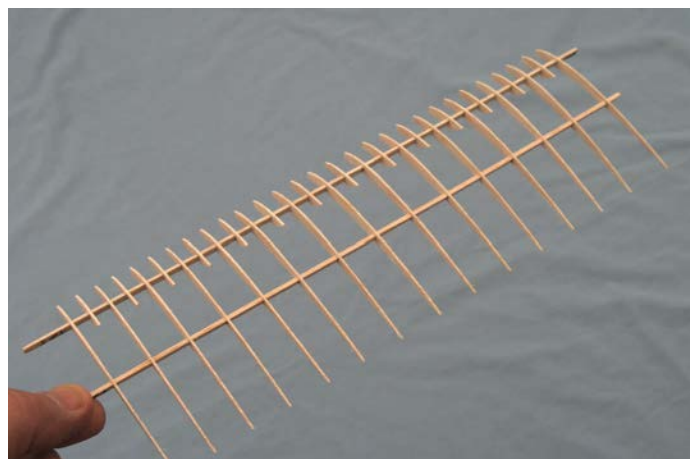
May 2002) and the Albatros CIII (Model Flyer Jan 2003) were super little fliers and looked superb in the air, but the weight of the 8 x 50mAh Nicad flight pack back then, before the advent of Lipo power, always meant that the loading would err on the high side of the aforementioned optimum. With this model, I adopted the new technology. Lithium Polymer batteries have revolutioned indoor electric flight, giving huge increases in duration and startling weight saving, compared to their Nicad equivalent



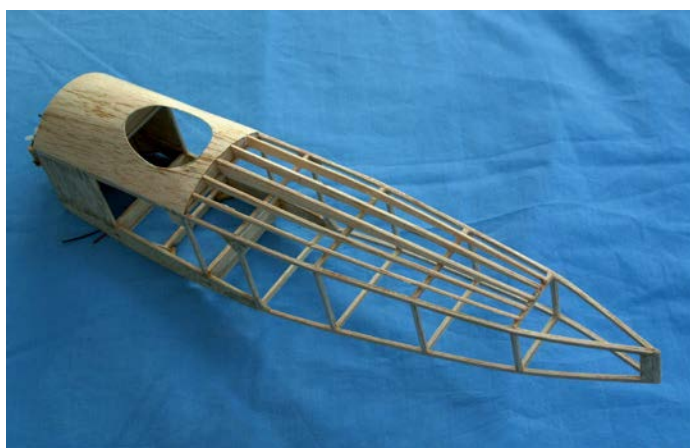
Good proportions, except for that short nose! The Sopwith Baby on floats, however, is a better option, even with the extra drag.



One of the wing panels under construction - using laser cut ribs, wings are a doddle!



A wing panel from another project assembled dry, showing the accuracy of fit that laser cut ribs give.



The finished fuselage - build it as light as possible.



The front bulkhead carries the motor mounting plate and the servos. (This is the 2004 gear, mind you!)

cells. There are drawbacks with Lithium, however - you need a dedicated charger, they take an hour to charge up and they will be damaged irrevocably if the voltage level in each cell falls below a certain level - all these drawbacks do not, however, detract from the improvements to practical indoor RC scale flight that these little cells offer.

This time, I started out with an all up target weight of 150g (5oz.) and worked back to a wing area that would give me a loading of 2.5oz/sq.ft. - 2sq.ft. The next step was to find a suitable subject - a fairly simple design, of suitable proportions - tail/wing areas, fuselage section - based around my chosen motor/prop combination (the same as fitted to the CIII). The Sopwith Baby was an obvious choice, as it has fairly short span, broad chord, single bay wings, a rectangular section fuselage and a simple rotary cowl. The only drawback was a very short nose moment. That's why I opted for the floatplane version - I figured that the floats could be built very light, but with the advantage that as the float tips extended way in front of

the prop, they afforded maximum effect from minimal nose weight (added to the front ends of the floats) to balance that short nose. The floats do, however, significantly increase the drag.

To offset the short nose moment even further, I positioned the servos, Rx and batteries within the cowl, but of course, this can be further enhanced these days, by using the E-flite micro 'brick' that carries esc and servos in one tiny unit - and fit it just behind the motor firewall.

Build notes

The construction follows the same format as both the FK3 and the CIII - balsa ribs, strip leading edge and spars, with carbon rod trailing edges on the wing, thin sheet tips and laminated balsa tail outlines.

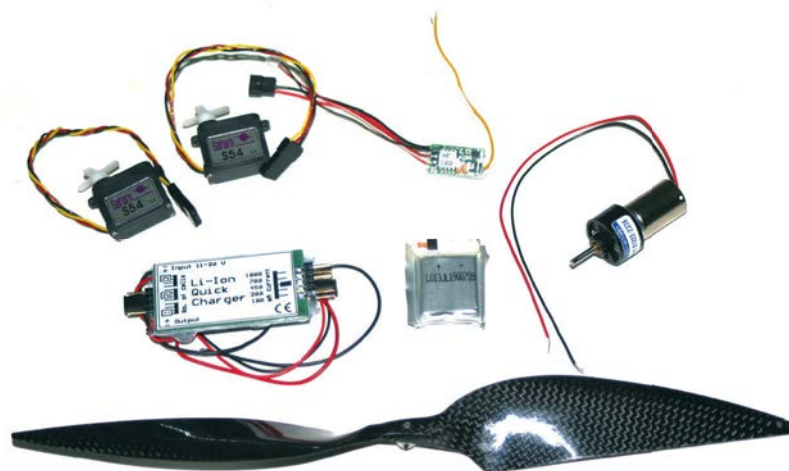
I called on the services of our laser-cutting service to cut the wing ribs for me, to my specified wing section. The accuracy of the ribs and the quality of the wood stock is superb. The service doesn't cost a lot and the saving in time is excellent!

The adjustable ailerons that I built into the Albatros were very effective, but as

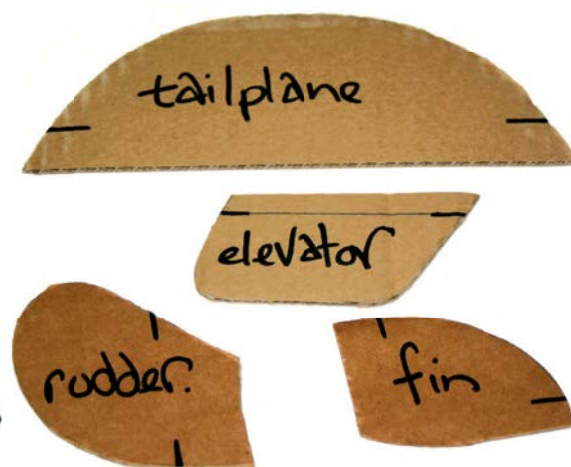
the Sopwith has four ailerons, rather than just the two on the CIII so, bearing in mind the tight weight target, I omitted them altogether on the Baby, relying on rigging-in wing twist to keep the port wing up in LH turns.

The tail controls are closed loop, using three-strand silver thread (any haberdashery will stock it). The thread is looped through the servo arms on final assembly, tensioned at the control horns and the servos set at neutral - the control surfaces can then be accurately set at neutral and the thread fixed with a drop of cyano at the servo arm. The control surfaces are hinged with small squares of Mylar hinge material (3/16" x 1/4"), which gives excellent surface centring. The control horns were cut from ply, but you can use short lengths of 1/16" dia. carbon rod, angled forwards so the thread attachment point is right over the hinge line.

The fuselage follows the "build two sides and fit crosspieces upside down over the plan" method, checking that the tail plane slot is parallel to the building board and that the sides are pulled in



The RC gear used in the Baby – circa 2004!



Cardboard templates were used to laminate the edges of the tail surfaces.

evenly to avoid a 'banana'. Use medium wood throughout - I used 1/8" square, but I reckon carefully selected 3/32" square will be adequate (and lighter, too). The lower wing location holes - to match the carbon rod joiners cyano'd to the wing spars - should be positioned so that the wing leading edge is level with the lower fuselage longeron, whilst the wing trailing edge is 1/8" below the bottom of the longeron - a little bit higher or lower won't make too much difference, but make sure it is the same both sides! Position these carefully as they are used to set the cabane strut lengths (both wings have the same incidence). Once the holes have been

made in the fuselage sides, a strip of 1/8" x 1/2" balsa can be positioned and cyano'd across the fuselage covering the holes at both fore and aft positions, to support the carbon rod wing joiners at the correct dihedral angle.

Some thought was given to making thrust line adjustments during trimming. In the end I made up a mounting plate from 1/8" lite-ply secured to the bulkhead with four tiny self-tappers and fitted a tapered balsa wedge on the rear face. The motor is taped to two plastic rods cyano'd into the ply plate. Loosen the screws and insert slithers of balsa to change the thrust lines, retighten the screws - simple! The micro Rx/esc/servo

'brick' is fitted behind the motor, whilst the Lithium cells are fitted under the motor. (The photo hereabouts shows the 2004 installation).

The cowl is made from three laminations of 1/4" sheet for the nose ring, hollowed out to clear the RC gear and motor, a 1/8" rear former and a narrow strip of 1/16" sheet wrapped around the former/nose ring. It's spot glued to the bulkhead to allow easy removal if necessary during trimming.

The three floats were made simply from 1/16" sides and 1/32" tops and bottoms. Formers were fitted at the strut positions, with angled slots to locate the struts. Little weight 'boxes' were fashioned in the nose of each float, so that nose weight could be added if she turned out a little tail heavy. The rear float is supported on four short lengths of carbon rod pushed into the float top corners and into the lower fuselage longerons. The main float strut lengths are determined using a simple cardboard jig, with the tail propped up so that the top longeron is level. The struts can be glued at the lower ends and fairing strips fitted, but the float assembly is finally fitted after covering and painting.

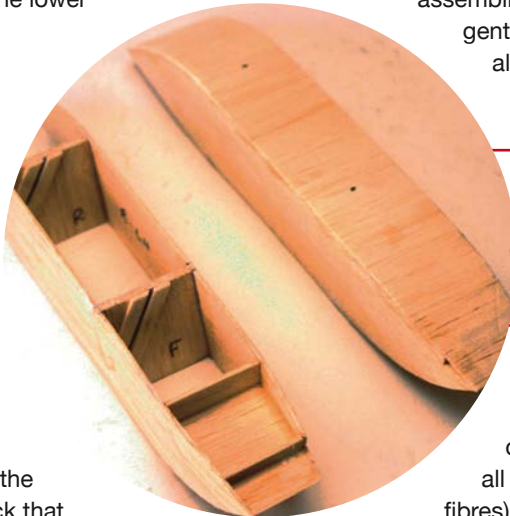
The cabane strut length is determined by dry-fitting the lower wing panels, and setting the fuselage on a flat board (pack up the height at the lower longeron, so that the wing panel is clear of the board, and pack up the tips to give the correct dihedral). Get two strips of 1/8" square balsa and mark on them the centre of the top and bottom wing leading edges taken from the plan. Prepare the strut notches in the fuselage top longerons



The cowl is made from layers of balsa carved out to clear the RC gear.

(supported by a 1/32" square balsa plate on the inside surface at each strut position) and prepare the cabane struts from 1/16" x 1/4" medium strip, cut overlength.

Use the marked balsa strips lined up against the lower wing leading and trailing edges (a third hand is very useful here!) and the upper wing centre section leading and trailing edges (one side at a time) and trim the fore and aft cabane struts to length. Fit the struts into the notches and check that the wings are exactly at the same incidence - repeat for the other side and you can dry fit the top centre section to check all is square. Final fit of the struts is after painting and covering, but it is handy to cut the interplane struts to correct length now, using the top of the lower wing surface at the root and the lower surface of the centre section. Mark the top of each one 'F' (front) and 'R' (rear) as appropriate (the lengths should be the same but the angles at each end are different) - mark the cabane struts similarly. Struts are attached by inserting short 'pegs' (1/4" long) of carbon rod into a slot cut in the end each end of the struts. Make the slots slightly longer than half the 'peg' length, so that when the peg is cyano'd in place, a hole



will be left in the strut under the 'peg', allowing the rigging thread to be fed through later on after final assembly.

Covering and finishing

When you've got a set of major assemblies and struts, gently sand smooth all surfaces with fine glass paper. Apply one coat

The main floats. Note the leg location slots and the weight pocket in the nose.

of thinned dope on all external surfaces and when dry, gently sand off all the 'nibs' (wood fibres) so that you've got nice smooth surfaces. Put on several more coats of thinned dope on the fuselage top decking, side cheeks, cowl and floats, rubbing down between each coat.

Covering is from the lightest grade of Mylar film (I got mine from Free Flight Supplies), using brushed on Balsaloc adhesive. Just apply the adhesive to the external periphery of the top wing surfaces, but along each rib too, on the lower surfaces. I don't heat shrink the film, but tension the film with strips of masking tape with the wing panel laid over a flat board. The tip of a hot iron fixes the film - experiment with the direction of the iron tip movement as you can manipulate the film to remove the small wrinkles that are bound to

form. When doing the lower surface, I use the forefinger tip of my right hand to smooth down the Mylar onto each rib, followed by the tip of the iron (held in my left hand), along the undercambered surface of each rib in turn. Sounds difficult, but its one of those things that you have to practice, in order to get the 'knack' - from then on it's easy! The tail surfaces are straight forward as they're flat. The fuselage is covered in three panels (two sides and bottom), using the iron to 'tack' the Mylar at one end and tensioning the Mylar to remove wrinkles before working the iron all round the edge of the fuselage face. Be careful - Mylar this thin tears even if you just look at it (well almost!), so handle the covered components very carefully.

The fuselage, cowl and wings were sprayed with thinned Humbrol enamel - keep the coats thin, building up the colour with loads of thin coats, rather than one heavy one - and stop when the surfaces are just opaque - its amazing how much even thinned enamel paint weighs!

The cowl and front panels were sprayed silver first before the application of the matt green (what is PC10, anyway?), so that the green could be rubbed away to represent weathering, revealing the 'metal' surface underneath the paint. The struts were brushed with thin grey gloss and detailed with a permanent black fine tip marker pen. Weathering the Mylar surfaces of the wing fuselage and tail was down with coloured chalks (black and brown) applied on the tip of a finger, rubbing gently in a chord-wise direction from front to rear. The top deck and rear float



All ready to start covering and finishing (less the cowl).



The cardboard jig used to make the float support struts. At the nose of the far float, you can just see the open triangular void retained for trimming noseweight (both floats).



A view into the completed cowl area, showing the Rx (bottom) and the Lithium cells (above). (2004 version)



A poor flying shot, but it shows the Baby's very simple, but pretty lines. The Baby is a sweet flier when trimmed out!

were painted using thinned coloured varnish to represent polished plywood.

Drawing roundels on Mylar was beyond me, I'm afraid, so I opted for a Norwegian scheme (detailed in Windssock Datafile No.61) that features simple parallel coloured strips as national markings, painted freehand in Humbrol Matt, using the rib edges as a guide. The fuselage reg is traced on with a soft pencil, carefully (remember that Mylar is very thin!) then hand painted in white matt Humbrol.

The fuselage is also treated to the 'dirty chalk' treatment, to create what hopefully looks to you like a well-used airframe.

Final assembly

Fit the tail surfaces to the fuselage, finally hinge the covered and painted surfaces and fit the control horns. I fitted the control closed loop threads by inserting a length of thin wire through the wire exit holes and feeding it forward and out through the bulkhead slot. Cyano the end of the thread to the end of the wire and gently remove the wire out through the rear, pulling the thread up through the fuselage and out of the exit hole. Attach the thread to the horn and thread the other end of the 'cable' through the hole in the servo arm. Repeat for the five remaining rudder/elevator, making sure that the servo arms have been set to neutral (check that the position of the Tx trims are central, too). Add the carbon rod 'water rudder' bar at the base of the fuselage sternpost and the rear end of the rear float and fit the bracing wires (I use a jewellers screwdriver to make the holes in the balsa structure). Don't forget

the trick of wicking a teeny drop of cyano into the end of the thread to prevent it from 'fraying' as it is impossible to thread a frayed end through the tiny holes. Don't over tension the thread and make sure that the surface is centred before fixing the cable with a drop of cyano. A hypodermic applicator is a must here (Deluxe Materials do a neat set of applicators and thin bore tubing that is perfect for most cyano bottles) as too much cyano will ruin the painted surface and lock up a control surface with consummate ease! Fit the cabane struts, using the top wing centre section to ensure the correct position and cyano them to the fuselage. Paint the struts now and while the paint is drying, glue the top wing panels to the centre section (I use a tiny amount of 5-minute epoxy), propping up the wing panels to the right dihedral, using a parallel strip of balsa under the tip rib. The top wing can now be glued in place, checking that it lines up with the tail surfaces and is perpendicular to the fuselage centre line. The lower wing panels can be epoxied to the fuselage next, using the interplane struts to hold them parallel to the top wing (check that they are parallel tip to tip as well). Glue the struts in position now, checking that there is no twist in the wing panels (small amount of warp can be removed when fitting the rigging threads).

Mount the aircraft on the main float assembly checking that wing tips are the same height and the top longeron is level. Also eyeball from above the model to check that the floats are parallel with the fuselage datum. Fit the rear float to the rear of the fuselage. Before final

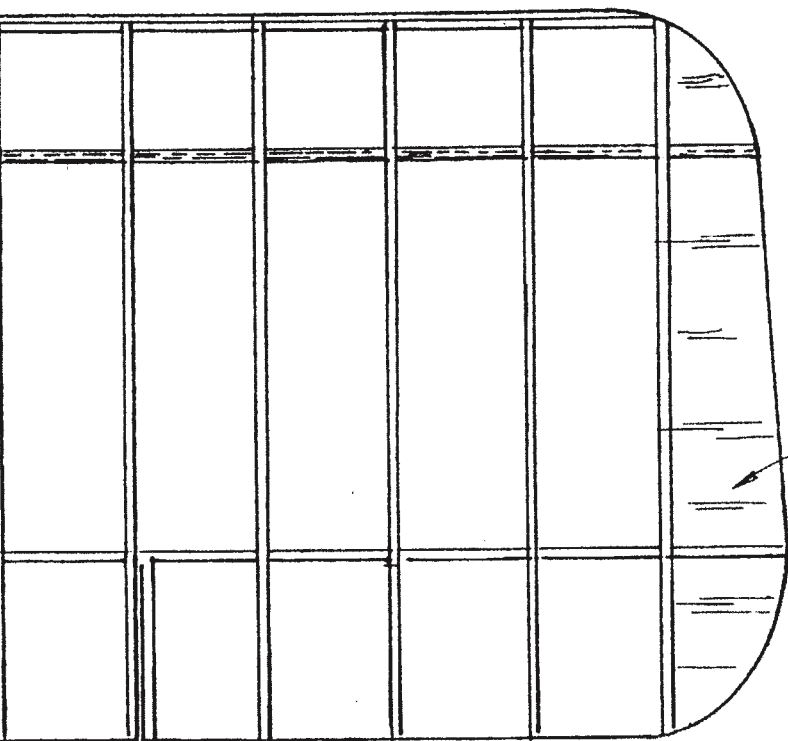
fitting the cowl, check the balance point by fitting the battery and prop. To my surprise and delight, the model balanced right on my calculated CG position, so no additional nose weight was needed (just as well as I was very near my 150g target at this stage!). All that was left was to fit the rigging wires through the holes in the struts and little soft wire hooks pushed into the lower fuselage sides above the spar positions, checking that you don't build in unwanted wing twist. At this stage just fit the flying and landing wires - the interplane strut bracing can be added after final trimming, as these wires allow the wing twist to be adjusted as needed. Fit the bracing wires to the main uc structure.

Finally, fit little wire skids to the bottom of the main floats to allow the aircraft to slide across the hall floor - alternatively fit lightweight wheels to the inside faces of the floats, at the fixed u/c position, with the tyres just below the bottom float surface. Fit a small skid at the rear of the main floats to minimise the contact area.

Charge batteries, operate the radio and set the desired throws - you'll only need about 1/4" elevator movement, but get as much rudder throw as you can - and check they move in the correct directions!

Flying

My CG calculation was a bit off - the wrong way, naturally! The first flight showed a typically tail heavy pattern - a bit tail down with a tendency to tuck in the port wing at the slightest 'overcooking' of the turn - most uncomfortable! Down trim on the elevator kept her in the air, but I brought



FOUR IDENTICAL WING PANEL
HANCED 2off OFF EACH

RIBS FROM 1/16" SHEET 52off TOTAL
FRONT SPAR 1/8"x1/16" SPRUCE
REAR SPAR 1/8"x1/16" BALSA

1/16" SHEET TIPS - NOTE GRAIN DIRECTION

IRON ROD

CLOSED LOOP
RUDDER CONTROL CABLES

1/8" SQ.

ROD

LEADING EDGE FROM
2 x 1/16"x1/8"
BALSA STRIPS

RIBS 1/16" SHT.

OUTLINE 1/16" SHEET

SPECIFICATIONS - SOPWITH BABY

Span: 27" (686mm)

Area: 317.25sq.in.

Weight: 5oz. (155g)

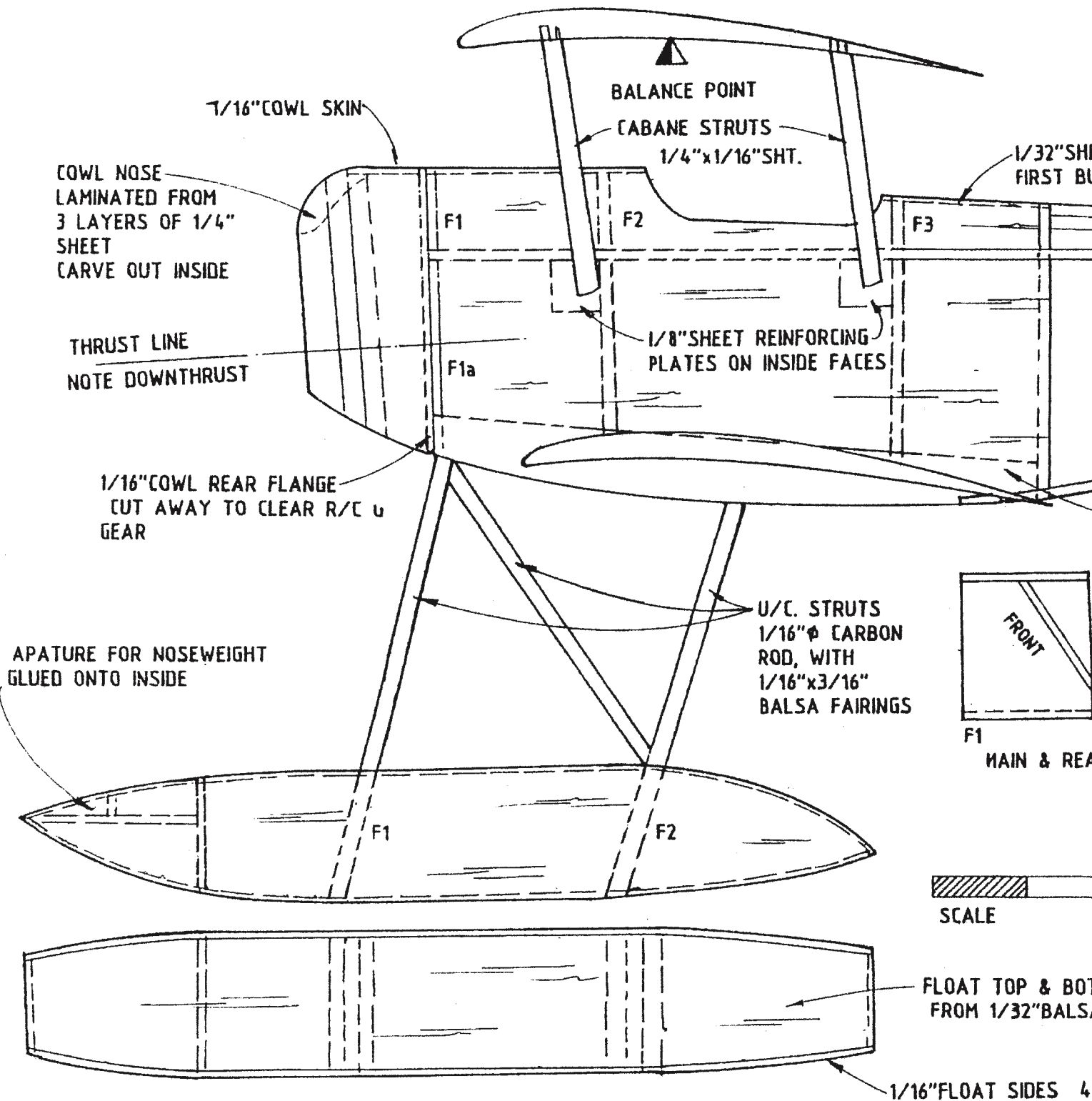
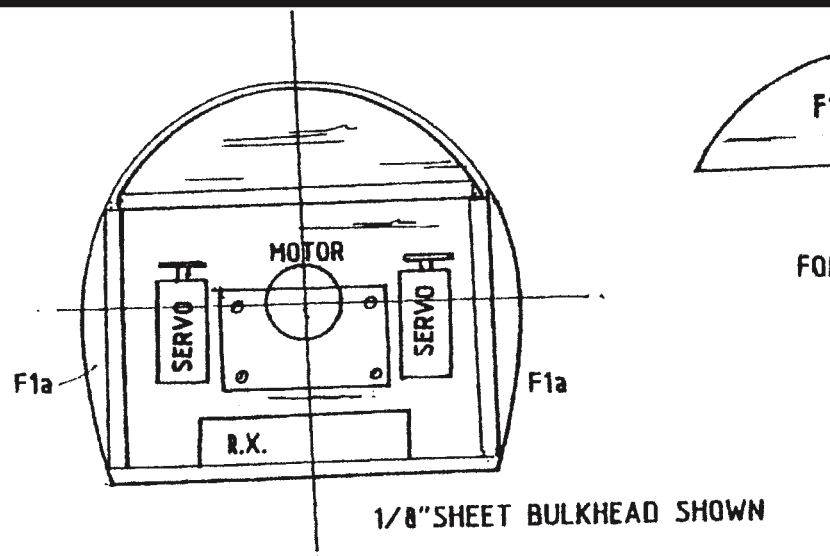
Loading: 2.3oz/sq.ft.

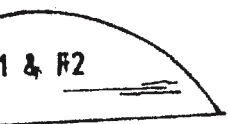
Structure: All built-up balsa

Covering: Lightweight Mylar heat shrink clear film

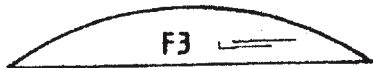
Colouring: Thinned Humbrol enamel lightly sprayed.

Weathering: Artist chalks applied by fingertip



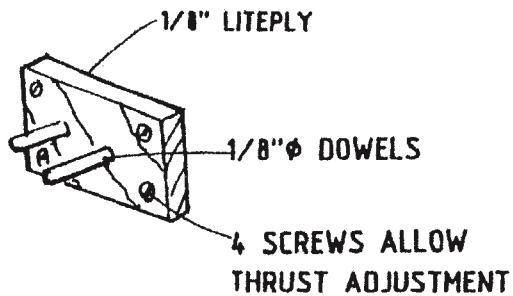


F2



F3

FORMERS FROM 1/8" Balsa Sheet



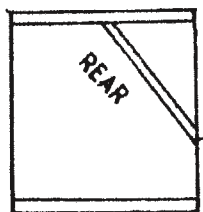
MOTOR MOUNT DETAIL

Sheet to Bulkhead

5 x 1/4" x 1/16" Stringers

MAINFRAME ALL 1/8" SQ.

1/8" Sheet Side Member



F2

AR Float Formers 1/8" Sheet



INCHES

Bottom of Sheet

off>

RUDDER OUTLINE FROM 1/16" Balsa Sheet

LEADING EDGE LAMINATED FROM 2 x 1/16" x 1/8" Balsa Strip

RIBS 1/16"

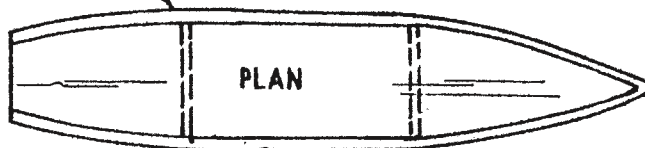
TAILPLANE SITS ON TOP LONGERON

1/16" diameter Carbon Rod Struts

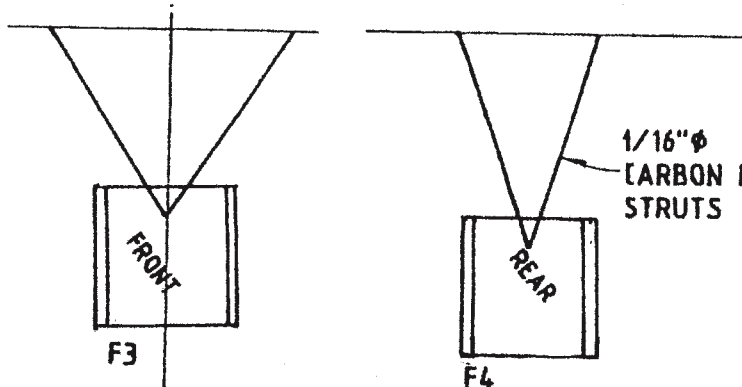
1/16" Sheet Water Rudder



Float Sides 1/16"



PLAN



1/16" diameter Carbon Rod Struts

TAIL Float Formers

LEADING EDGE 1/8"SQ. DIAGONAL

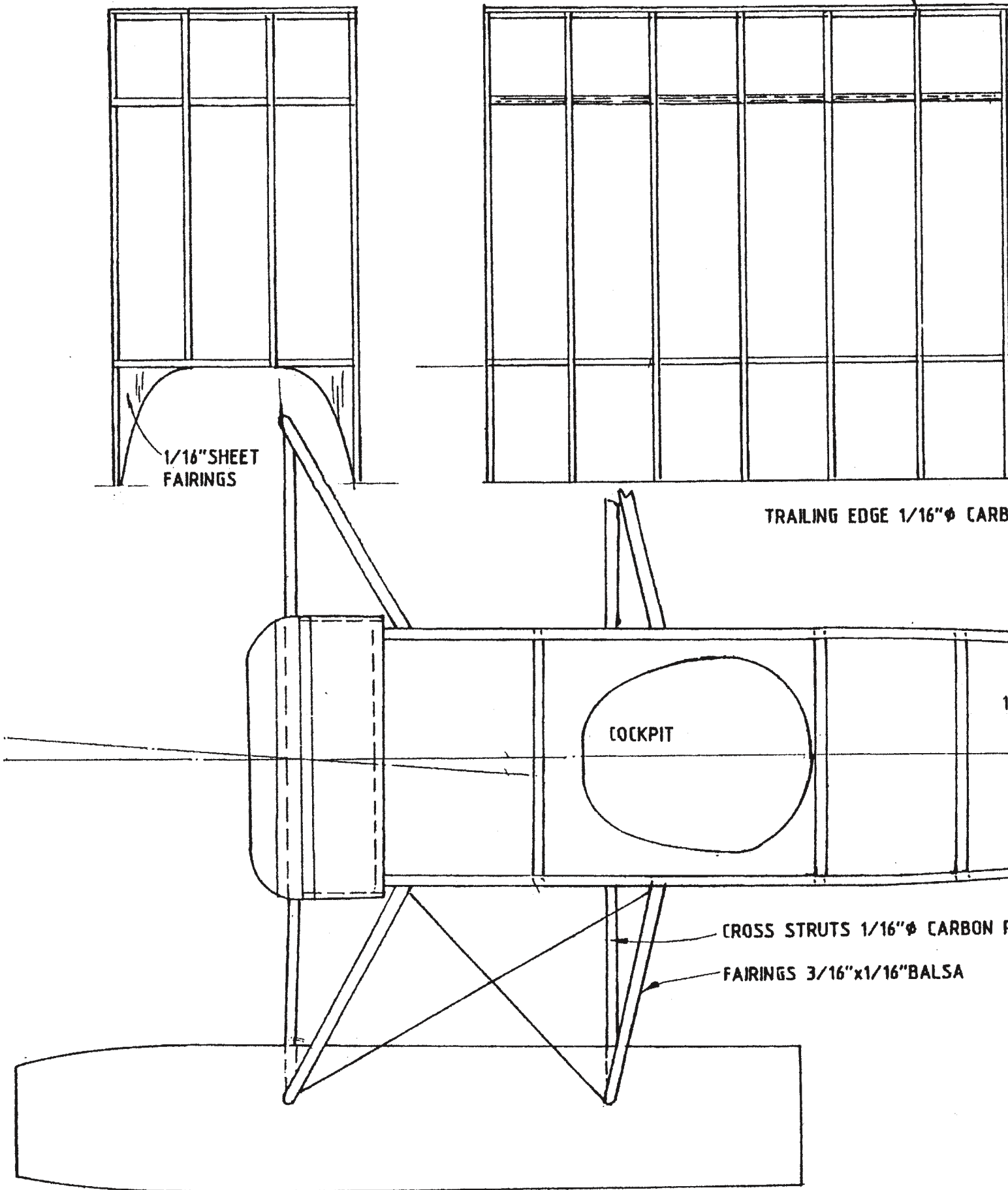
1/16" SHEET
FAIRINGS

TRAILING EDGE 1/16" ϕ CARB

COCKPIT

CROSS STRUTS 1/16" ϕ CARBON F

FAIRINGS 3/16"x1/16" BALSA



her straight in for some more weight up front. I was right bout the floats, as just a tiny bit of putty in the float 'front pockets' did the trick. The second flight was far more comfortable, but still had a tendency to drop the inboard wing if too much rudder was used. The second adjustment (just make one at a time to check the effect!) was to reduce the rudder throw by 50% (to 3/8" either way), and increase the -ve exponential on the Tx aileron stick - this made it less prone to dropping that wing due to over control, but a bit of wing twist was applied to the port wing (trailing edge down) after the second flight (fit an interplane wire from top rear to bottom front, fixing the wire at one end, twisting to the desired position - 1/4" at the tip - taking up the slack in the wire and cyanoing the free end - a small dab of accelerator makes an instantaneous 'grab'). So for the third flight the trim was almost there. The take off run was short, the climb out smooth and on full power the climb was quite spirited. To fly her at full speed and keep her level needed a bit of down stick held in, so after a couple of fast circuits (the Baby was based on the Schneider racing Tabloid, after all), with no tendency to inner wing tuck, easing off the throttle allowed the elevator to be centralised and a more realistic cruise speed achieved.

I have to be honest, the 150g target was missed by an overweight 5g, but the

wing area was over 2sq.ft, so the actual loading was still only 2.3oz/sq.ft. I was well pleased with the flying speed - and she looks really nice in the air, those floats add a certain something to the appeal - but perhaps that's just me!

Providing the hall is large enough, touch and goes with a tight bank at each end looks impressive (as long as they're done in the first half of the flight) and figure eights in either direction are possible but need concentration to keep even (she turns left a lot easier that she does right), but I'm still getting used to her, so I hope to get it a lot smoother.

The flying time on the cells I was using is about 15 minutes. By then the voltage has dropped sufficiently to significantly reduce the climb ability, so due to the need not to let the voltage drop too low, as soon as the Baby starts to struggle in the climb, it's time to bring her in - and 15 minutes of circuit flying, albeit at slow speed, is enough for anyone!

Outside flying

I have flown the Baby outside, too. The opportunity to fly on calm conditions seldom seem to coincide with my free time these days, but one weekend morning it dawned bright and flat calm, so it was a quick drive to our local sports field, charging the battery on the way. By the time the charge was complete, the dew had burned off the grass, so a gentle, flat hand launch saw her away.

The lack of walls certainly allowed for slow gentle turns and nice, large diameter figure eights and yes, I actually looped her - it was a bit untidy, falling off of the top a bit, but I didn't want to risk too much of a dive, having used the best part of the power in the early part of the flight. In less than a flat calm, I wouldn't recommend it, as I haven't tried it - she was designed for calm air, indoor flying first and foremost.

Reflection

I could have made the span/area a little larger as the motor prop combo has loads of power. There is a size limit, though, I feel, for these indoor scale models and I reckon that about 28" span is it. Bigger than that and you can only fly in big halls, or fly in a continuous circular bank - hardly realistic! I could have saved weight by using non-scale rib spacing and using single surface covering, but that would take me away from what I am striving to achieve. Certainly the weight of the floats is significant but not as much as noseweight with a fixed uc would have been, I think. I could have increased the nose moment to counteract this, but I would start moving away from scale again. So I'm very happy how the Baby turned out and enjoy flying her - but I've still got some way to go to achieve that most elusive of characteristics - a truly scale flying speed. ●

The weathering really shows on the bottom surface - the view you see most of, hopefully! (Note wheels removed for photo!)



Rigging wires are naturally cosmetic, but do add oodles of atmosphere.

BELLE BUCKMINSTER!

AeroModeller visits the new National Centre...

In 2001, when I first took over the Model Flyer magazine from David Boddington, I was soon made well aware of his campaigning for a National Centre of Aeromodelling and the frustration that nothing ever happened to achieve this.

Some time later, I met Jim Wright, the Chairman of the local Ivinghoe Club, who was also very interested in pursuing a National Centre. Jim, being Jim, took the matter one step further and raised the issue at the next BMFA AGM and, to cut a long story short, was given the job by the BMFA to come up with some practical proposals. Whether it was a fob-off, or a genuine offer to further the National Centre creation, I don't know, however, Jim threw himself heart and soul into seeking out several sites that could be deemed suitable, doing costing projections and sustainability evaluations (he was well experienced in this field, having done the same sort of thing in his career before retirement). At the same time, or in fact some time later, despite some rumoured opposition on the BMFA Management Group, the BMFA canvassed its members on their desire for such a Centre and their willingness to financially support the establishment of a Centre, in whatever form that it might take. The members response and Jim's practical presentations at last, I believe, led to a more positive attitude towards the project and the BMFA appointed Manny Williamson as the Project Development Manager, alongside his other existing roles. This is only the bare bones of the story and from only my personal recollections of events – others might tell it differently. Whatever, the use of Buckminster Lodge and the surrounding areas were successfully negotiated and the establishment of a National Centre was finally announced last year – the gates opened for the first time on May 8, 2017. The report that follows is to let you, the reader, see what progress has been made in a relatively short time – and the potential for further development.

Ken Sheppard – Editor



The Lodge carpark view showing the 'hangar on the left.

View of the flying field looking East from the control line area.



Welcome to Buckminster!

I had read the report on the Vintage Combat fliers meeting at Buckminster (AM July) which claimed to be the first competition of any kind to be held there and noted that they gave it a very favourable 'thumbs up' as a flying venue, so I was keen to see for myself. SAM 35 had organised a two-day event midweek in the first week of August and although the weather forecast didn't look great, it would not deter me from a visit on behalf of AeroModeller – I could see the facilities first hand, get a feel for the future development, and to get the opinions of the fliers who were actually using the Centre.

The first step, of course, was to determine where the Centre was! In fact the National Centre website (www.nationalcentre.bmfa.org) gives excellent instructions in case your Sat Nav isn't up to it, and I had no problem getting there (Sewstern, between Melton Mowbray and Grantham). There is no road signage yet (planning permission is still going through), but as you approach the Lodge, the BMFA flag is visible above the tall hedges, letting you know your arrival is imminent! The first impression is as you drive up the track to the Centre, the Lodge is framed by two large wooden gates. The Lodge which houses the offices, meeting room and kitchen is a very attractive two storey redbrick built building. Passing through the gates onto the shale-covered carpark, I was directed where to park up by a young man in a hi-viz jacket. The carpark is quite large, but it is a very good idea that the parking is organised to maximise the space. Stood in the carpark with the Lodge in front of you (you are facing North) there is a large metal clad hangar to the left and a long two storey outbuilding running parallel to the Lodge, but beyond it. On the right hand side is a hedge which runs the length of the approach road and stops just short of the lodge, giving access

to the camping area which extends West to East parallel to the Lodge. The flying area is beyond the buildings.

The Tour

Jim Wright was there already to greet me and act as my guide for the purpose of 'the tour'. First thing to do, of course, was to register at the office. Manned by Manny Williamson and his assistant, I was duly signed in and wristband fitted.

The very reasonable fee is £6 per day per person (£8 on Sat or Sun), with overnight camping costing £6 per unit weeknights (£8 on Sat or Sun). This fee will remain certainly for the rest of this year, although I believe

that the camping charge will be increased next year, in line with the improved facilities planned (more on that later). There is a full list of prices on the website, including the cost of hiring the whole site for an event/comp.

Being mid morning on the first day of the SAM 35 meeting, it was busy with guys arriving quite regularly, so after a brief chat with Manny, Jim led me to the next important thing on the agenda – the café! This was in fact a Meeting Room, co-opted into being the café, very conveniently as it was next to the kitchen! Staffed that day by the charming Beverley and Linda and Linda's young daughter Chloe, a range of hot and cold drinks were available, together



The first view of the National Centre, driving up the narrow approach road.



The café/meeting room – a good reasonably priced menu of snacks and drinks.



The delightful café staff – Linda (left), Beverley and Chloe in front.



The exterior of the 'hangar' all metal clad and oil-fired heating.



Neil Tidey gives scale to the 'hangar' interior.



The 'hangar' workshop, with left over Chinese 'Payload Challenge' entries.



Beginnings of the SAM 35 swapmeet – started earlier than planned due to the weather!



The Phase 2 and Phase 3 outbuildings the flying field is on the far side of the long building.



The exterior loo block. Not yet wheelchair friendly.

with the typical Northern welcoming 'bacon buttie' and numerous variations, together with a range of sandwiches and home-made cakes, all at very reasonable prices! Given that the journey from Manchester had left me somewhat depleted from the early breakfast, a chance to refuel – and chat with some of the other visitors – was greatly appreciated.

Around the Grounds

Jim told me as we left the café to start the tour of the grounds that the fields in every direction, as far as the eye could see, all belonged to the Buckminster Estate! Given that the fields were mainly crop filled, negotiations with the landowner regarding retrieval of models was still in progress, so anyone losing a model out of the prescribed Centre flying area MUST contact the BMFA officials, to find out the agreed procedures for retrieval – not just blindly march out across the fields through the crops.

But I'm getting ahead of myself – our first point of call after the café was the aforementioned 'steel clad hangar'. This makes a very nice, 20m x 23m, oil-fire heated indoor flying area. Although the roof is not that high, it is not impeded by support beams, so makes a very practical space. It had been used very recently to house the teams taking part in the 2017 Payload Challenge' event and, in fact, in the small workshop off of the main area, there were several of the Payload models still there. Apparently the Chinese team

opted to leave them, rather than incur the cost of transporting them home! Also in the hangar block are toilets (including disabled) and a small kitchen area providing DIT Tea and Coffee making facilities. This area was also earmarked for the SAM 36 Swapmeet to be held that evening (although as the weather was somewhat inclement during the afternoon, the Swapmeet started early!).

Coming out of the hangar, the large outbuilding dominates the view (the flying area is beyond it) and to get to it we walked along the left hand side of the carpark past a large walled off area. In front of the wall, as Jim pointed out, was the access to the large buried eco-waste Bio-disk facility, accessed by two manholes in the shale, cordoned off by a wooden fence. Definitely a 'Green' facility!

Walking past this toward the flying area we passed the container toilet unit and caravan waste disposal point, and onto a quite large pond, which was surrounded by greenery and the banks down to the pool were covered in meadow flowers and plants. The water was covered in a layer of waterlilies, giving the area a very peaceful, natural feel – one could almost see butterflies and hear the buzzing of bees – if only it was a few degrees warmer and less windy!

On past the pool heading North and we came across the secondary carpark, two sides of which are protected by a line of small trees. Large enough for 25-40 cars, I reckon, it's the perfect spot for unloading models and gear

before venturing out on the field, although it has to be said, a number of modellers had driven around the trees and parked up against them on the flying field side. My impression was that if large meetings are going to be held here, some firm parking rules need to be in place to prevent the vehicles impinging on the flying area. Of course, modellers place them at their own risk, but nevertheless...

The flying area

So, beyond the secondary carpark and we are looking at the main flying area, which extends a long way both East and West, with the field perimeter hedge in front of you several hundred metres away – a very nice open area. Apparently the nearest building is over 850 metres to the South of the flightlines and the nearest village is 1.6km to the East, so no real noise problems, then! There is an East-West runway cut in the grass, 340 metres long and 40 metres wide (it hasn't long been seeded, so cutting is kept to a minimum until it is more established. To the right, at the end of the main runway, there is a shorter, 120 metres x 40 metres runway running North-South. What this means, of course, is that the sun is to the back of the pilots when on the flightline, with circuits to the north of the site. Rotating to the right, past the end of the main runway, along the North-South runway in the direction of the lodge is the Southern border hedge, in



The view from the secondary carpark, looking East.



The camping area along the South edge of the field, adjacent to the Lodge.



Manny Williamson mans the Reception desk, first point of call in the Lodge.



Jim Wright – my guide and National Centre factotum (he lends his hands to anything that needs doing). His initial research really gave the Centre momentum.



An artist's view of the site looking North – the actual Southern hedge line is further up in line with the lodge building.



An artist's impression of how the Phase 2 outbuilding COULD look.

front of which runs the camping site. At the time I was there, there were already 14 -15 caravans/campers in place and there was plenty of room for a lot more!

Facing North in front of the secondary carpark trees and turning to the West, there is a windsock in line with the end of the main runway (the windsock was donated by Neil Tidey of Laser Engines fame) and to the left of that, down towards the Southwest corner of the field is the designated control line area

Two circles had been cut in the grass, rather coarsely, I thought, but these were early days, after all – I believe them to be suitable for 60' lines – and of all the activity on the field, this was the busiest area – not surprisingly, given the blustery wind direction – Southerly! Control line stalwarts, Alex Finn (of Redfin engines) and Dave Cowburn (his Dolphin sports CL model was the free plan in AM August issue) took turns to fly a variety of their models, with varying degrees of success it has to be said – but they were certainly having fun!

There were a couple of brave souls flying Vintage RC – a Junior 60 seemed to be holding its own! So not a lot of flying, but what a lot of potential!

What I would advise any modeller to do, is come and visit the Centre – give it your support, let your thoughts and suggestions be known – and enjoy it!

There are a number of events being arranged, but otherwise, it's open flying for

all visitors, but do check the website (<http://nationalcentre.bmfa.org>) to see 'whats on' before travelling. Why not fill a car with your clubmates – or even several cars – and come and see for yourself!

The future

Jim was keen to let me know what was being planned for Phase 2 and even Phase 3 of the National Centre development. The big outbuilding block fitting out is still under discussion and could house a museum, library, meeting areas – various proposals are being considered (I have included a couple of artists impressions of how it could look). Given the vast expanse of brick frontage facing the main flying area, a long glass conservatory bar cum café would be perfect along the front giving fantastic views of the flying – I'm not sure if this is being considered, but it would get my vote, if indeed a vote was proposed!

There is going to be a National Archive of Aeromodelling at the Centre, but what form it will take and where has not yet been decided. A lot of the memorabilia and models are already on site on the first floor of the Lodge – on the day that I visited, Jim and Martin Dilly were going to start cataloguing what exactly is there, so that a logical and representative display of aeromodelling history can be shown.

Regarding immediate improvements that could be made, I think the site needs a couple more toilet block/containers, certainly

adjacent to the camping area and also a few water standpipes. Electrical hook ups would certainly appeal. These additions would certainly justify an increase in camping charges, which I believe will be in place for next year's season – but still great value!

Regarding control line facilities, a concrete circle is a necessity and I believe a lot of thought is already being given to this provision. Do we have volunteers with experience? If so, get in touch and see if you can help!

The BMFA are always looking for volunteers to help maintain and develop the site, with contractors engaged for the larger projects. If you think you would like to help, why not contact Manny Williamson by email (many@bmfa.org), or the BMFA office 01162 244 0028 - and let them know you are available?

Finally...

I have to say that visiting the National Centre was very rewarding. It has plenty of potential and is well worth a visit – don't just talk about it from hearsay, go along, see it for yourself, take some clubmates – and have a fly!

That so much has been achieved in such a short time is a great milestone – and it can only get better if we all give it our support and encourage others to use it.

All credit to the BMFA and all those who made it happen – it's been a long wait, but I reckon it has been worth it! ●

The “House Brand” Model Engine Era

Adrian C. Duncan looks at ‘shop made’ engines of the 1940-1950’s...

In these days of unprecedented commercial challenges facing the model aero industry as societal attitudes and related market conditions continue to evolve, those of us who were “there” sometimes become a little misty-eyed thinking about the halcyon days of the early post-WW2 era in which aeromodelling (and indeed modelling in general) was among the most popular and widely-practised “hands-on” activities of them all. This was particularly true among the many young people who then presaged a very

healthy future for the hobby.

At the time when I was growing up in England during the Fifties, almost all of my contemporaries were actively involved with some form of modelling activity. No iPads, Smart Phones, X-Boxes, computer games, Transformers and social media to divert us back then – indeed, many of us (including myself) didn’t even have a television in the house at that time! This being the case, we had to find ways of filling our time through our own efforts, a challenge which we met with

energy and enthusiasm.

Modelling in all of its various forms was an obvious and widely-embraced means of filling one’s time constructively. The attached 1949 picture of a young Gordon Cornell, future chief engineer for Electronic Developments (E.D.) Ltd., starting the AMCO 3.5 PB diesel in his “Peg Leg” control-line stunt model resonates very strongly indeed with me personally. Happy memories indeed...

Although disposable cash was in relatively short supply for many British modellers

A very young Gordon Cornell starting his AMCO 3.5cc engine in a control line model, in 1949.



during the early post-WW2 years, this was compensated for by the fact that there were a lot of such individuals who were happy to save up and pay for such modelling goods as they could afford and then put in the time and effort required to build and operate models using those goods. They accepted and indeed embraced the concept of working for their hobbies – today's "instant gratification" mindset had yet to become imprinted.

This added up to a generally very positive economic environment within which the various model retailers found themselves operating back in the 1940's, 50's and into the 60's. During this era, hobby shops which focused very much upon kits, scratch-build supplies/materials, engines, fuel and related accessories were almost ubiquitous features of most communities of any size and were well supported by their local aeromodelling communities. A far cry from today, when such community-based retail hobby shops as do remain on deck are forced more and more into the ARF and toy market sectors in order to survive.

Indeed, the craft-based modelling market at that time was such that during the 1950's and early 1960's in my home town of Sheffield in South Yorkshire there were at least five hobby shops that I can recall (and there were probably more) within a few miles of my home, easily accessible by foot, bus or bike. The health of the model trade was such that a long-established major local toy shop, Redgates, established a busy hobby supply department alongside its toy ranges, as did London's famous Gamages department store, of which more later. All of these businesses were able to comfortably sustain themselves on the basis of ongoing custom from the very numerous "hands-on" craft-based modelling brigade of which I was an active member.

Of course, one model always led to another, so people kept going back for more as funds permitted. Naturally, this in turn led to a highly competitive situation as far as these shops were concerned – they were after all competing for the ongoing attention of the same very considerable repeat customer base. This situation inevitably encouraged the various competing hobby shops to remain constantly on the lookout for some means of increasing their visibility in the marketplace, thus potentially giving themselves a market share edge. As time went by, an increasing number of them engaged in the mail-order business through a national advertising campaign in the modelling media of the day, while some even presaged today's credit-

based economy by offering model goods on the "hire purchase" plan.

The generally positive market environment in which the early post-war hobby shops were operating was such that a number of them were able to go even further by introducing their own "house brand" product lines. Some retail businesses generated sufficient capital to enable them to develop their own kit ranges, most notably Henry J. Nicholls Ltd. and Model Aircraft (Bournemouth) Ltd. with their Mercury and Veron kits respectively. Others sought a higher level of visibility by entering the model engine market with offerings which were closely identified with them rather than with a particular manufacturer. It is with the latter category that we are concerned here.

The early post-war years saw a dramatic increase in the popularity of power modelling in Britain. Model engines were in short supply at this time and such engines as were available were highly sought after by the aeromodelling community despite their relatively high prices in the context of the early post-WW2 British economy. It should therefore come as no surprise to learn that a number of hobby shops of that era looked to make a name for themselves by introducing their own "house brand" model aero engine ranges. In this pair of articles, I'll undertake a quick survey of the various model shops which became involved in the promotion of such ranges.

There are of course many examples of similar marketing approaches from retail outlets in other countries, but in this two-part series we'll focus upon the British scene with which I'm personally most familiar. I'll cover the various businesses in the chronological order in which their promoted model engine ranges appeared.

June 1946 - Caledonia Model Co., Glasgow, Scotland

As far as I can discover, the earliest initiative of the kind under consideration here came from the Caledonia Model Co. of 5 Pitt Street in Glasgow, Scotland, who began to promote their highly-regarded Clansman 5 cc diesel and Falcon 5 cc spark ignition unit in June 1946. The Caledonia Model Co. was owned by the well-known Scots model enthusiast George Leask, who was one of the founding fathers of the Scottish Aeromodellers Association, becoming its first Chairman in 1944. George later relocated his very successful company to much larger premises nearby on Argyle Street.

The initial pre-production announcement of Caledonia's two engine offerings took the form

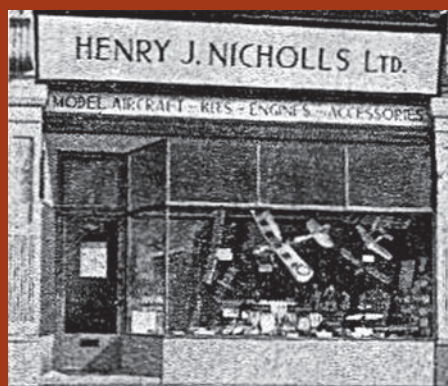
of an advertisement placed by the company in the June 1946 issue of "Aeromodeller". In that advertisement, both engines were referred to simply as forthcoming "Caledonia" products – the model names had evidently yet to be chosen.

At the time of that initial announcement, no commercial model diesels had yet appeared on the British scene. The almost simultaneous appearance of the Mills 1.3 cc and Owat 5 cc models in July 1946 set the ball rolling, and by October 1946 both the Caledonia diesel and spark ignition models had made their appearances in the company's advertising. They did so under their own individual model names of the Clansman 5 cc diesel and the Falcon 5 cc petrol engine. From the outset, they were promoted by the Caledonia Model Co. as their own exclusively-marketed "house" range. The diesel and spark ignition models were respectively priced at £7 7s 0d (£7.35) and £6 10s 0d (£6.50) – a healthy chunk of change in those days.

There have been suggestions in the past that the Caledonia engines were actually manufactured by Kingdom Models of Coaltown of Weymyss in Fife, who definitely manufactured the later Clan 0.9 cc diesels as well as the Rowell 60 racing units. However, it appears somewhat more probable that the Caledonia models were manufactured in Glasgow either by Caledonia themselves or by an associated precision engineering firm whose name is lost. The engines were specifically referred to as "the Clyde-built super engines".)

Since Coaltown of Weymyss is a very long way from the Clyde, this sounds far more like a series of engines built by (or for) the Caledonia Model Co. in the Glasgow area than a range constructed by others in distant Fife. Indeed, the Caledonia Model Co. soon began to refer to themselves in their advertising first as "Model Aircraft Specialists and Engineers" and later as "Model and Precision Engineers", implying a direct in-house involvement with the engineering side. The fact that Caledonia promoted the later Clan 0.9 cc diesel as a quite separate production lends weight to the idea that two distinct manufacturers were involved with the Clan and Caledonia ranges.

The spark-ignition Falcon disappeared from the market in very short order as interest in spark ignition engines rapidly waned, but the Clansman diesel acquired a very solid reputation which enabled it to continue in limited production for some time. However, its high price became increasingly uncompetitive as time went by. As of March 1947 the engine



An early shot of Henry J Nicholls model shop storefront at 308 Holloway Road, London (from an Aeromodeller advertisement).



Redgates storefront in Sheffield, mid 1950's – one of the author's FIVE local model shops!

remained available as a set of castings and materials, although completed units were no longer on offer. The Clansman was to remain on offer in kit form throughout 1947 and 1948. Any example encountered today is as like as not to be a home-built effort based on one of these kits.

The Caledonia Model Co. subsequently made an effort to revitalize their involvement in the model engine field through the development of an updated model. A comprehensively revised design called the Chieftain was announced in March of 1949. However, although a few examples were undoubtedly constructed, this engine doesn't appear to have entered series production. Indeed, it never appeared in Caledonia's advertising even in kit form.

By mid 1949 the Caledonia Model Co. had ceased advertising their own model engine range, focusing instead upon acting as the Glasgow outlet for other more widely-popularized marques. It seems likely that the seemingly small artisan workshop which produced the Clansman and Chieftain was unable to do so at a price which was competitive with emerging new models from other larger-scale mass producers.

The model engine-related activities of the

Caledonia Model Co. are covered in more detail in my article about the Clan 0.9 cc diesel which may be found on my website at www.adriansmodelaeroengines.com When on this site, click "Engine Articles" on the top navigation bar to see an alphabetical listing of all engines covered, including the Clan.

January 1947 - J. W. Kenworthy

Next up in the model engine promotional field was the well-established model shop of J. W. Kenworthy at 295 Charminster Road, Bournemouth, England. This shop was owned by 1933 Wakefield Trophy winner J. W. "Joe" Kenworthy. In early 1947 Kenworthy became directly involved with the promotion of what initially amounted to a "house brand" model engine range in the shape of the B.M.P. diesels.

This connection arose due to Joe Kenworthy's friendship with B.M.P. designer and constructor Henri Baigent, who had developed the B.M.P. 3.5 cc diesel in the latter part of 1946. Encouraged by Kenworthy, Baigent went into partnership with a local precision engineering firm to form a new company called Bijou Mechanical Productions (Bournemouth) Ltd. (or B.M.P. for short). It was this company which manufactured the

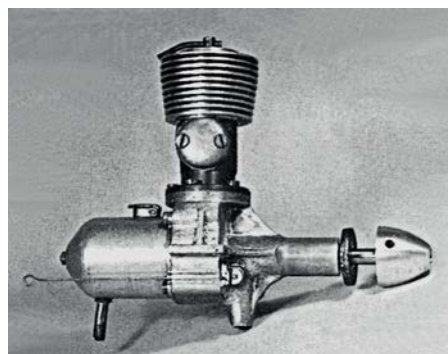
engines. Joe Kenworthy enthusiastically "adopted" the engine and began to promote it vigorously starting in January 1947. It's clear that he was willing and indeed keen to get more outlets involved with the marketing of the engine, since his advertisements from the outset specifically invited trade inquiries.

The advertised selling price of this very well-made but rather bulky sideport engine was a healthy £8 9s 6d (£8.47 in modern money), a very significant investment in early post-war Britain when a man earning £8 a week would have been considered to be very well off. Over a week's before-tax earnings for a simple 3.5 cc model engine – try that one on the wife! The same advertisement announced that a suitable matching airscrew was also available from B.M.P. at an extra cost of 8 shillings (40p). A smaller 0.9 cc B.M.P. model was also advertised beginning in February 1947 at a price of £5 even.

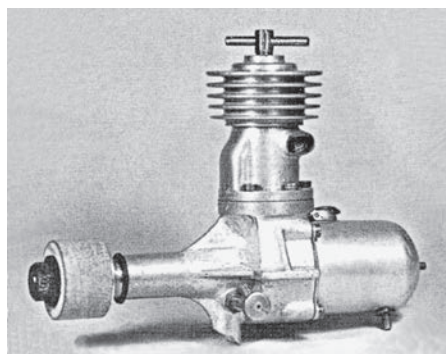
Although the little B.M.P. 0.9 cc model seems to have attracted little interest despite its many very worthy qualities, the B.M.P. 3.5 cc offering proved to be sufficiently popular that the distribution of the engine was soon expanded. The ongoing advertisements imply that by May 1947 distribution had shifted to Kenworthy's fellow retailer Henry J. Nicholls Ltd. of London. Nicholls was to continue to offer the B.M.P. until early 1948.

However, the engine's considerable weight and bulk for its displacement, coupled with a relatively modest level of performance, led to its quickly falling behind in the rapidly evolving model engine marketplace. By mid 1948 it had quietly faded away after perhaps some 300 examples had been produced.

The full story of Henri Baigent and the B.M.P. engines may be found in my earlier article on the late Ron Chernich's "Model Engine News" (MEN) website at <http://www.modelengineneeds.org/> Once on this site, click "Engines" on the vertical navigation bar at the left and then click "Finder" to see a drop-down



The Caledonia Clansman 5cc diesel. (Mike Clanford)



The Caledonia Chieftain 5cc diesel. (Mike Clanford)



The author's example of the BMP 3.5 cc diesel.

alphabetic menu of all the engine articles, including the B.M.P. piece.

May 1947 - Watkins Model Stores, Cardiff, South Wales

The next retail firm to enter the model engine promotion lists was the Cardiff-based Watkins Model Stores, which was established by H. J. Watkins in 1936, apparently as an offshoot from the Watkins family ironmongery business at 6 Waungron Road, Llandaff, Cardiff, South Wales. In a brief article which appeared in the July 2012 issue of SAM35 Speaks, Ron Raddon stated from his own first-hand recollections that the Watkins model supply operation was run out of premises at the rear of the ironmongery shop. A wide range of model products was offered.

Following the conclusion of WW2, the firm expanded its scope by beginning to advertise nationally and promoting its world-wide mail order service, attracting satisfied customers from such diverse and distant locations as Malaya and Texas if the advertising is to be believed. For 1947 the firm published a reportedly very informative 64 page "Watkins Handbook" which included information relating to the full scope of aeromodelling products which they sold. This was replaced in early 1948 by an expanded 72-page catalogue/handbook called "Modelopedia", of which Volume 1 (Power) appeared in February of that year. This catalogue was reportedly one of the most comprehensive such documents ever offered by any British retail outlet.

In early 1947, Watkins formed an association with the unknown maker of a then obscure range of model engines which had been circulating in small numbers in South Wales under the Dyne trade-name. As far as the British modelling public at large was concerned, the Dyne model engine range appeared out of nowhere in the early part of 1947, being promoted exclusively by Watkins Model Stores from May 1947 onwards as their "house brand".

Given the fact that the Dyne range was exclusively marketed by Watkins, it would appear at first sight to be a logical deduction that the engines themselves likely originated in the Cardiff area. This is consistent with Ron Raddon's first-hand recollection of small batches of Dyne engines being delivered periodically to the Watkins shop. However, a local origin is very far from being authoritatively established given the present absence of any direct evidence. All that can be recorded as fact is the Watkins advertising claim that

the Dyne engines were "hand-built by the designer" who reportedly had "over thirty years of tool-room experience behind him". This speaks very clearly to a small-scale artisan manufacturing operation run by a mature individual.

At the time when Watkins began to promote the Dyne range in their May 1947 "Aeromodeller" advertising placement, the only models offered were a 3 cc diesel and a 4 cc sparker. This would imply that these two models must have been at least developed, if not put into limited production, by early 1947 at the latest. The Dyne 3 cc diesel was to prove to be the hardest member of the Dyne range, passing through a number of quite distinct variants and surviving to the end of the range.

Although somewhat pedestrian in design terms and lacking in eye appeal thanks to a rather "agricultural" external finish, the Dyne engines were extremely well-made where it counted. The main downside was that they were relatively heavy and bulky for their displacements, also performing at very modest levels. In a published test which appeared in the October 1948 issue of "Aeromodeller", tester Lawrence Sparey reported an output of only 0.103 BHP @ 6,300 RPM for the 3 cc Dyne diesel model. My own independent tests have more or less confirmed Sparey's figures, also confirming that the Dyne 3 cc model was a very pleasant engine to handle.

Despite this, the Dyne series carried on, expanding over time until it had eventually encompassed spark, diesel and glow-plug offerings in displacements ranging from 2 cc up to 10 cc, albeit at different times. However, the range failed to keep pace in technical design terms with the new models which were emerging in ever-increasing numbers from competing manufacturers. In addition, there was no way that a small artisan operation could compete in price terms with the large-scale mass producers such as E.D., Davies-Charlton, Allbon and International Model Aircraft (FROG).

The Dyne marque struggled on until April 1949, in which month the final Watkins advertisement for the range appeared. Watkins Stores themselves survived for only a little longer, seemingly falling by the wayside later in 1949.

The full story of the Dyne range has been recounted in an article which may be found on my previously-referenced website.

Mid 1947 - Model Aircraft Supplies Ltd, London, England

The well-known hobby shop Model Aircraft

Supplies Ltd. of 171 New Kent Road, London SE1 was owned and operated by Harry York, a well-known figure in the London model trade. In mid 1947, York introduced a small sideport diesel called the Ace 0.5cc model. It's almost certain that this engine was made by someone other than Harry York, but we have no information whatsoever on the actual maker,

Announcing the Clyde built super engines M.A.T.A.
CALEDONIA 5cc "DIESEL" ENGINE (Ready Soon)
Also new CALEDONIA KIT 40" BEGINNER'S GLIDER (Base flight 7 mins. 45 sec.) 7/- Post 6d.
CALEDONIA PLANS
40" GLIDER 19/- 40" 1/2 SCALE COOPER SWIFT (SCOTTISH CHAMPION) 2/6
40" 1/2 SCALE COOPER SWIFT 2/6 40" 1/2 SCALE COOPER SWIFT 2/6
LARGE STOCKS OF BALLS, OILS, KITS, PLUGS, ACCESSORIES, BOOKS, A.M. PLANS, DOPES, PROPS,
GLASS, SCREWED BUSHES, BRASS, ALUMINIUM AND CELLULOSE TURNING, ETC.
LET GEORGE LEARK ADVISE YOU
CALEDONIA MODEL COY., 1, PITT STREET, GLASGOW, C.I.
CORNER ARCADE STREET, NEAR ANDERSTON, X.

June 1946 Caledonia Aeromodeller advertisement

"Abuse them a' for service."
Diesels Petrol Kits
Mills 1/3 cc. £5 5/6 Whirlwind 6 cc. £7 16/9 Hells Angel 15 cc. Air-
E.D. 1/4 cc. 11/- Stentor 6 cc. £8 14/6 flo Baby 18 cc. Slicker
2 cc. £4 4/0 Frog 1/75 cc. £3 10/0 42" pylon, 22/6, Spar-
E.D. Comp. £4 17/6 Full Spares and Service. 100/600 cabin, 42/-, Frog
Clan 1 cc. £5 0/0 45" cabin, 42/6, Junior
Kemp 2 cc. £4 17/6 Phantom C.L. 18/6 40" 57/6 (Scorpion) 4/-
E.S. 5 cc. £8 16/8 Typhoon 41" C.L. 75/- 47/6, Rover 40", 19/6
5 cc. Clannam Diesel Castings and Materials. 45/- Caledonia Super
Diesel Fuel, (for any diesel) 2/6. Post 6d. Caledonia Super Power
Props. 9" 4/6, 10", 11" 5/-, 12" 5/6. Post 3d. See previous adverts.

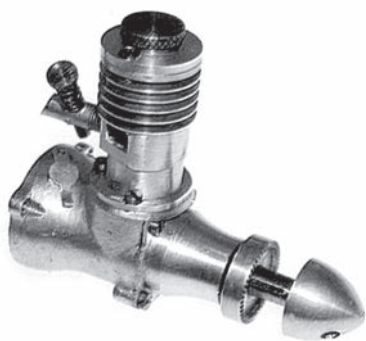
The March 1948 Caledonia advertisement from Aeromodeller.

INTRODUCING THE B.M.P. DIESEL FOR POWER PLUS SUSTAINED PERFORMANCE
● 3-5 cc. 40 ozs. static thrust with 12 1/2" x 7" Airscrew.
● 1" friction-free crankshaft mounted on two ball races.
● Steel cylinder sleeve and monolithic piston ground and honed.
● Unique starting dependability.
● Positive cut-out. Actuated by any flight-timer.
● Weight of engine without Airscrew 9 1/2 ozs.
● Equally suitable for Race Car or Boat.
● Precision built to aircraft standards
£8-9-6
Airscrew extra 8-0
DISTRIBUTED BY
J. W. KENWORTHY, 295, Charninster Rd., BOURNEMOUTH

Initial advertisement by J. W. Kenworthy for BMP 3.5 in Aeromodeller, January 1947.

PREMIER 'QUICKSILVER' Price 39/6 post free
'Rip' does it again. Specially designed for the Mills Diesel, but suitable for all engines from 1 to 3 cc. Send 1/- for 'WATKINS HANDBOOK' (our 64-page 1947 Catalogue) including 1/2 1/2 2 Supplements. (Supplements 3d. each by post or 2 for 5d.)
Beware of the many dud engines now flooding the market. We will be pleased to advise you on your own particular problem. All engines purchased from us carry our usual satisfaction or money back guarantee. Good engines are still in short supply and all orders for engines are taken in strict rotation. We recommend the following Power Plans which have passed our bench and flight test:-
Petrol Diesel
Frog 1/75" 79/6 Complete B.M.P. 0.9 cc. £5 10s prop.
Dyne 4" 64/10-0 Comp. Frog 100 79/6 Complete
Majesco 45 64/10-0 Bare Mills 1/3 cc. £5-5-6 Complete
Stentor 6 £7-7-0 Bare E.D. 2 cc. £4-4-0 Less prop
Keil K 6 £8 Complete Dyne 3 cc approx. £6-10-0 Bare
approx. £8 Complete B.M.P. 3.5 £8-9-6 Less prop
All orders taken in strict rotation Owt 5 cc. £9-9-0 Complete
We specialise in all matters Model Aeronautical and stock all that is good in all branches of the Greatest Hobby on earth.
Send now to Watkins Stores,
6, WAUNGRON ROAD, LLANDAFF, CARDIFF.
ESTABLISHED 1936.

The first Watkins ad for Dyne engines in AM, May 1947.



A BMP 0.9 cc diesel. (Ray Baigent)

nor do we have any information regarding the terms of any agreement under which it was produced. All that we do know is that the little Ace was exclusively marketed by York's retail outlet as its "house brand".

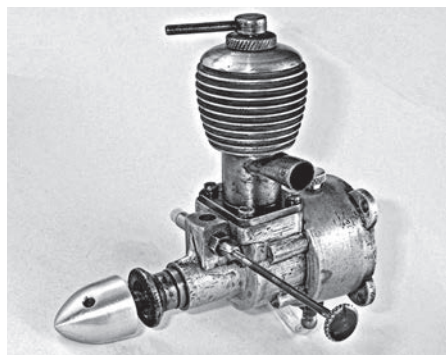
This rather "agricultural" looking, but well-made and surprisingly effective, little sideport unit was an immediate success. Being the first British engine of its 0.5cc displacement, it attracted a good deal of attention, to the point that it triggered something of a "race to the lower limit" among British manufacturers. This resulted in the appearance of a series of progressively smaller British diesels, including the Comet 0.4cc which will be considered next, as well as the Kalper .32cc, the ultra-rare Weston "A" of 0.25cc and finally, the 0.196cc Kemp Hawk Mk.1 model.

My own testing of my example of the Ace has conclusively demonstrated that the little motor has a surprisingly sprightly performance by the standards of its day, undoubtedly developing plenty of power to fly a small model. The engine starts very easily provided you don't flood it. A single choked flick is all that is required - any more, and it's flood city - and clearing a flooded situation with this little beastie is definitely tricky, best avoided. But if you get the choking right, it's a one or two flick starter every time, and once going, the engine runs very smoothly indeed.

Although the Ace seems to have sold reasonably well, it was made in rather limited numbers, presumably by a small artisan workshop. It seems to have remained on offer until early 1949. The full story of this fine little motor may be found in my earlier article on the previously-cited MEN website.

Mid 1947 - Milford Gauge Company, Harrow, England

Harry York's success in promoting the Ace 0.5cc model seems to have prompted several other London-area retail businesses to start thinking about getting into the game with their own "house" model engine designs. One such



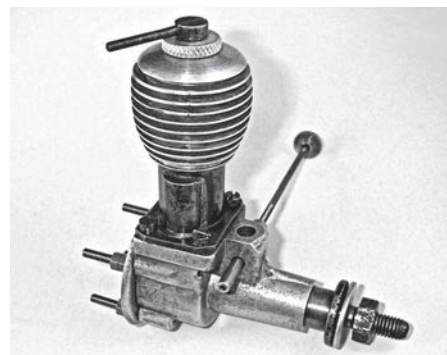
The author's Dyne 3cc Mk. II diesel.

business was the Milford Gauge Company, which had retail premises at 5 Village Way East, Rayners Lane, Harrow, Middlesex (in the North-West sector of Greater London). They entered the model engine market in mid 1947 with the Mk.1 version of the Milford Mite. Beneath a rather individualistic external appearance, this 1.41cc diesel was basically a conventional sideport design of its era, albeit displaying some unusual features by the standards of the mid to late 1940's. The engine was evidently the brainchild of a certain Mr. J R Smith, about whom nothing of a personal nature is known.

The Mite was unusual in that it featured a single inboard ball-race supporting the crankshaft. It was made in relatively small numbers, appearing in three distinct variants during its approximately one-year production life. Towards the end of the production life of the final Mk.3 variant, the firm began offering engines on the hire-purchase system, whereby one could commit to a series of monthly payments at a modest premium rather than a lump sum cash purchase.

Over the years, the poor old Mite has been lumbered with a rather less than stellar reputation, being characterised by one writer as "probably the worst diesel ever made in England". While the engine was indeed rather crudely made in certain respects, also somewhat lacking in eye appeal, the key fits in the examples which I have examined were perfectly acceptable. My own tests have shown that the Mite was in fact a highly serviceable powerplant, starting easily and actually out-performing the then-current version of the Mills 1.3. The Mk.3 version was particularly effective.

Although the Mite was undoubtedly sold in model shops outside the London area - and was even claimed by the makers to have found its way to foreign climes - it seems probable that the engine was sold locally for the most part through direct sales from the manufacturer's retail outlet in Harrow. Indeed,



The author's Dyne 3cc Mk. III diesel.

buyers were encouraged to come to the shop to see their engines tested before they took delivery - a very direct form of marketing indeed, and one which displayed notable confidence in the engine's ability to perform on demand! The engine could also be supplied by mail order.

As far as I'm presently aware, the final advertisement for the Mk.3 Mite appeared in the June 1948 issue of "Aeromodeller". At that point, the business was reconstituted as a general hobby shop called the Model Stadium, which operated from the same premises. In May of 1949, we find an advertisement in "Aeromodeller" magazine placed by the renamed company, offering a wide range of modelling goods, including both kits and engines. Interestingly enough, the new company continued the previously-mentioned hire-purchase option first offered during the final months of the Milford Mite - in effect, an early example of buying on credit, before such buying became the norm.

The Model Stadium was to continue advertising nationally as late as 1958, being highlighted in the "Over the Counter" feature in the October 1952 issue of Model Aircraft magazine. It was noted for its clever and amusing cartoon-based advertising featuring Ray Malmström's always-imaginative artwork. The full story of the Milford Mite may be read in my article which appears on the previously-mentioned MEN website.

December 1947 - The Model Shop (Newcastle), Northern England

The next hobby shop to market its own house brand of model aero engines was the Model Shop (Newcastle) retail outlet in Newcastle-upon-Tyne in Northern England, owned by Charlie Lutman. The technically interesting MS model diesels were offered in both 1.24cc and 2.4cc displacements. The MS 2.4cc model was first announced in an advertisement which appeared in the December 1947 issue of "Aeromodeller". The

1.24cc variant followed a few months later, in early 1948.

The two MS diesels differed quite markedly in design terms. The 1.24cc model was basically a conventional sideport design apart from having its carburettor mounted at the front, with a fuel tank which actually wrapped around the main bearing. The larger 2.4cc model featured a more conventional rearward location of the carburettor and tank, but had adjustable compression by means of a moveable eccentric main bearing. Both models featured cooling fins which were square in plan view.

Both engines were designed by Charlie Lutman and manufactured by him at a factory in the Team Valley, near Newcastle-upon-Tyne. This factory also made fuel tanks, pilots and a whole range of other goodies which were marketed through Lutman's retail shop in Newcastle.

The MS engines never achieved any market prominence, hence being withdrawn fairly early on. Today they are rarer than a mixture of hen's teeth and rocking horse droppings! Thankfully, the MS 1.24 diesel design was preserved by the now-defunct Motor Boys International Home Construction Group as a set of CAD drawings. It might be possible for anyone interested to somehow get their hands on a set of those plans.

Incidentally, The Model Shop went on to gain the distinction of becoming the longest-lived hobby shop in the UK and perhaps the world, tracing its existence from 1924 to the first decade of the present millennium - a span of over three-quarters of a century.

March 1948 - Weston Model Aero Supplies, Weston-Super-Mare, England

The retail outlet of Weston Model Aero

Supplies at 1 Oxford Street in Weston-Super-Mare, jumped onto the "house range" bandwagon in March 1948 with their own advertised range of Weston diesels in 0.25, 3.5 and 5cc displacements. There really isn't a lot to say about these engines. Although a very few examples were manufactured (the 3.5 cc "Stunt Special" model was the subject of a rather troubled June 1949 "Aeromodeller" test by Lawrence Sparey), this range was not a success, hence being withdrawn relatively early on. Examples are very rarely encountered today.

May 1948 - Premier Aeromodel Supplies Ltd., North London, England

The next model retailer to market its own house-brand model engines was the long-established firm of Premier Aeromodel Supplies Ltd. of 2A Hornsey Rise, a little to the north of Islington. Established in 1929, the company was both a manufacturer and a retailer. In addition to their retail premises at Hornsey Rise, they maintained a separate manufacturing facility known as Hill View Works, which was located on East End Road in nearby East Finchley. Both kits and accessories were manufactured at this location for retail sale through the Hornsey Rise outlet. The company was early in the mail order field, and their pre-WW2 catalogues were remarkably lavish affairs, complete with a hand-drawn map showing how to get to their retail location!

Premier entered the model engine market in May 1948 with their ultra-lightweight and very compact MEC 1.2cc sideport diesel. As so often in these cases, the identity of the manufacturer of this cute little barstock diesel is unknown. However, he was clearly quite

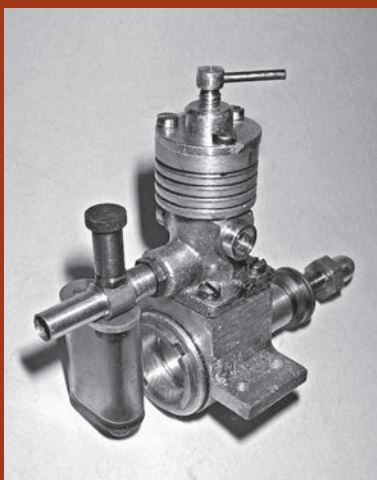
talented - the quality of the engine is beyond reproach. The quoted price of the MEC was £4 4s 0d (£4.20), later reduced to £3 15s 0d (£3.75). Mail order sales were invited, or one could call at the retail location to make a direct purchase.

On test, my own example of the MEC proved to be an extremely easy starter which had a performance very much on par with the then-current Mills 1.3 Mk.1, while being significantly lighter and far more compact. In terms of its power-to-weight ratio, the little MEC had all of its competitors well beaten!

The MEC 1.2cc diesel continued to be periodically advertised by Premier up to their July 1949 placement in "Aeromodeller", which appears to have been the last mention of the engine. At some earlier point in 1949, the Premier company had introduced a second model engine in the form of the very unusual 2.5cc 'Lionheart' "dummy twin" sideport model, which was made available in both diesel and glow-plug variants. It's unclear whether or not the same manufacturer was involved, but it's certainly possible or even likely.

This unusual engine looked for all the world like an opposed-twin design, but it was in reality a single-cylinder unit - the second opposed "cylinder" was a dummy which actually served as the fuel tank. Premier were at some pains to point this out in their advertising - presumably the engine's appearance caused some confusion! The Lionheart's intended primary application was to power scale models.

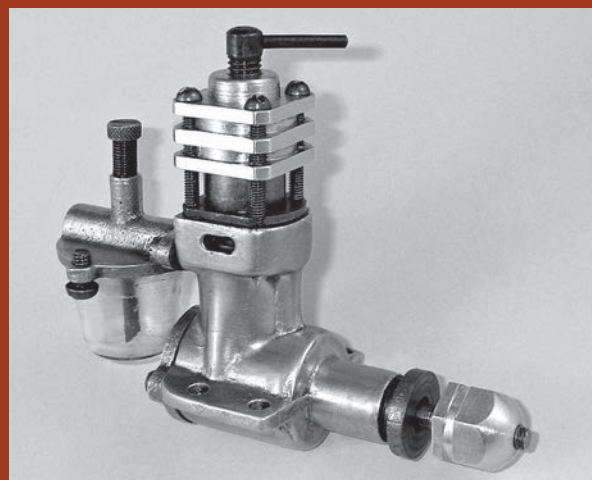
The evidence strongly implies that both the MEC and the Lionheart were small-scale artisan productions, for which one would expect manufacturing figures to be relatively



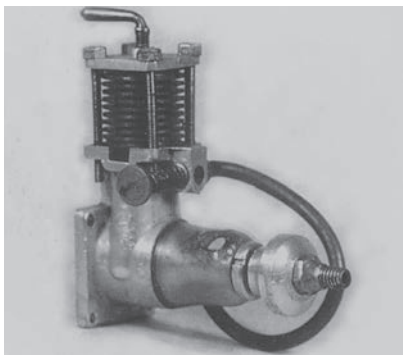
The author's MAS Ace 0.5cc diesel.



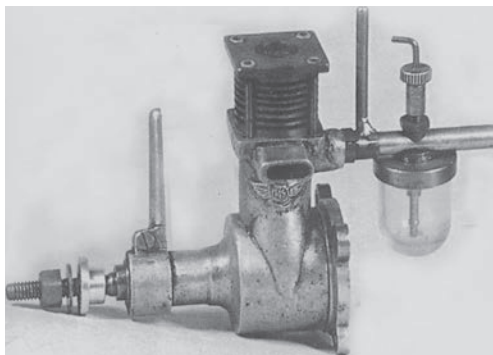
The author's Milford Mite Mk.II diesel.



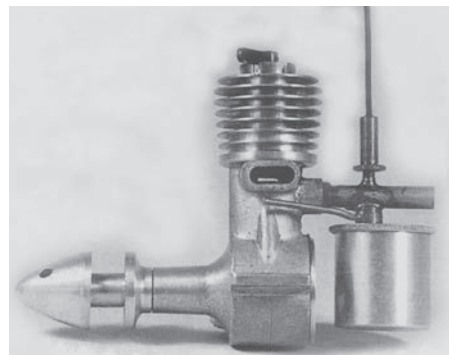
The author's Milford Mite Mk.III diesel.



The MS 1.24cc diesel. (Photo: Mike Clanford)



The MS 2.5cc diesel. (Photo: Mike Clanford)



The Weston 3.5cc diesel. (Photo: Mike Clanford)

low. The MEC was only in production for just over a year, while the Lionheart seems to have been offered for only a few months. Moreover, both models were sold within a very small geographic area.

These factors certainly explain the relative scarcity of surviving examples today. Probably only a few hundred at most of both models combined were made in total. Premier themselves did not long outlive their “house” engines, ceasing trading altogether at some point in 1950.

The full story of the MEC and Lionheart engines may be read in my article on the previously-cited MEN website.

June 1948 - Gamage's Ltd., London, England

The famous Gamage's department store at 116-128 Holborn in Central London had been established in 1872, initially as a watch repair shop. However, it quickly grew into a major department store selling a wide range of consumer goods. Its toy department developed into one of London's best-loved sources for toys, games and general hobby and model supplies, including (but by no means limited to) model aircraft. Sadly, the business finally closed its doors in 1972, a full

century after its foundation. However, at the time of which we are speaking, it was still very much a going concern.

Although not a model aircraft shop per se, Gamage's were heavily involved in the aeromodelling trade, advertising regularly in the major model aircraft magazines of their era and serving as trade distributors for a number of aeromodelling product ranges. Their model aircraft department formed only a small element of their overall operation, but it was very well-stocked with a wide range of merchandise. I recall from my own early years growing up in Britain, that a visit to Gamage's “Model Aeroplane Corner” (as it was known) when in London, was akin to a tour of Ali Baba's cave!

It appears that in early 1948, Gamage's decided to cover the previously-described moves on the part of several competing retailers by becoming directly involved in the model engine market with their own “house” offering, namely the ‘Comet’ 0.4cc diesel. This was by no means their first such move - indeed, as early as 1909 their catalogue had included a 25cc single-cylinder 2-stroke spark ignition engine that was recognisably a direct predecessor of the model engines that were to follow in subsequent decades.

The little Comet first appeared in Gamage's' advertising in June 1948. This is another case in which the actual manufacturer of the Comet engines is unknown, nor is there any information on the relationship between Gamage's and the unknown manufacturer. The engine was marketed exclusively by Gamage's, selling at the remarkably low price (for the period) of only £2 15s 0d (£2.75).

An in-depth examination and test of my own example shows that it was a very well-made little engine which handled nicely and had a perfectly adequate performance for powering the small free-flight models for which it was

evidently designed. My impression was that it represented excellent value for money. Despite this, it did not sell in large numbers, hence being withdrawn quite early on. Production appears to have been confined to the period mid to late 1948 - the engine was last mentioned in the modelling media in October 1948. Indications from serial numbers are that only a few hundred examples ended up being produced and sold.

The full story of the Comet 0.4cc diesel has been recounted in my earlier article which may be found on the previously-cited MEN website.

In Conclusion

As the 1950's approached, the small manufacturers who serviced the retail store “house brand” model engine niche market became increasingly unable to keep pace with the new products which were constantly appearing from the volume manufacturers with their national distribution networks. Basically, they lacked the technical and financial resources to develop their products at a sufficient rate, nor did they enjoy the production volumes that could have spelled more competitive unit manufacturing costs. By mid 1949, all of the engines discussed in these two articles had departed from the scene.

Still, it had been an interesting era while it lasted, and one which won't be repeated, given the present and likely future state of the ever-changing model market. And in other fields it didn't end at this point - both the previously-mentioned model shop-initiated Mercury and Veron kit ranges continued to thrive for many years, while C A Ripon's early post-WW2 model shop at 39 Parkway in Camden Town, London eventually blossomed into the model goods distribution giant that it remains today as Ripmax - from small beginnings come greater things! ●



The Milford Mite Mk.III in full song!

AeroDetail series

Making a scale model?

Finding the detail needed to finish a scale model can be difficult and getting full size images is not always practical. Our range of detail photo collections provides extensive close ups of a wide range of popular aircraft all on CD in J-peg format



Monocoupe CD108

The Monocoupes were side-by-side two-seat lightplanes of mixed wood and steel-tube basic construction with fabric covering. A braced high-wing monoplane with fixed tailskid landing gear, and the reverse curve rear fuselage lines that were to become one of the signature identifier features of the Monocoupes. 55 photos

Miles Magister CD73

A firm favourite with scale modellers, this extensive collection of images depicts two examples in different Royal Air Force training colour schemes. (100 images)

Messerschmitt ME109G CD72

The 'Gustav' saw Luftwaffe service from late 1942 onwards. Subject version of this collection is a tropicalised G-6. (110 images)

Messerschmitt Bf109E CD71

The 'Emil' was the version of this WW2 fighter that was the mainstay of the Luftwaffe fighter force during the Battle of Britain in 1940. (150 images)

Me 410A - 1/U2 CD107

For those who fancy a twin, but something outside the 'normal' favourites, consider the Luftwaffe's final 'destroyer' heavy fighter that packed a powerful punch 79 photos

Martin B-26 Marauder CD70

The Fantasy of Flight Museum's example, photographed pre-restoration, soon after it was flown into the Museum site, thus in original, unrestored condition. (100 images)

LVG C.VI CD69

The sole survivor of its type from the WW1 era, photographed in extensive detail. This is the machine house at and flown from the Shuttleworth Collection airfield, Old Warden and now in storage, awaiting display at the RAF Museum. (110 images)

Luton Minor CD68

Just one example of this light aircraft, to which the owner has added many mods and variations. (32 images)

Luscombe Silhouette CD67

The elegant late 1940s U.S. light aircraft. Several examples provided, with much close-up detail for modellers. (74 images)

Kawasaki Ki100 CD66

A study of the late WW2 radial engine 'emergency' development of the Japanese Ki 61 Hien (Tony) that provided an unexpectedly superior performance for the squadrons of the Imperial Japanese Air Force during the closing stages of the Pacific war. (60 images)

Junkers Ju87G-2 Stuka CD65

The aircraft that defined the term

Hawker Typhoon CD109

The Hawker Typhoon was a British single-seat fighter bomber, produced by Hawker Aircraft. While the Typhoon was designed to be a medium-high altitude interceptor. 117 images

Hawker Tomtit CD64

Mid 1930s RAF biplane trainer aircraft, from the era open cockpits of silver dope and polished metal. (140 images)

Hawker Tempest Mk 2 CD63

The final development of Hawker

Hawker Sea Fury FB XI CD62

Hottest of all the piston-engine fighter aircraft, the carrier-borne Sea Fury is also admired for its elegant profile. (140 images)

Hawker Hurricane MK1 & MKIV CD61

Two versions of the famous 'Hurri' - one a true Battle of Britain survivor painstakingly restored to perfect authenticity, plus the cannon-armed, Mk.IV 'tank buster'. (170 images)

Hawker Hart & Hind CD60

A combo collection featuring the RAF Museum's Hart bomber and Hart Trainer, plus Shuttleworth's Hind. (115 images)

Hawker Fury CD59

No authentic example now exists, but the accurate replica photographed in extensive detail in this collection is as good a guide as can be found of this elegant 1930s RAF fighter. Includes some general arrangement pictures authentic to the period. (55 images)

Grumman FM-2 Wildcat CD58

First of Grumman's highly successful line of prop-driven 'Cats', the Wildcat, in guises from F4F-3 to FM-2 held the line after the Pearl Harbour attack and served from then until the end of WW2. It was idea for operations from the small escort carriers. (90 images)

Grumman F8F Bearcat CD57

Hottest of Grumman's prop-drive fighters - it arrived too late for action in WW2 but was standard ship-borne fighter equipment in the immediate post-WW2 era. (90 images)

Grumman F7F Tigercat CD56

The awesome twin engine long range fighter of the late WW2 era operated by US Navy and US Marines. (60 Images)

Grumman F6F Hellcat CD55

The US Navy's most important, and most successful fighter of WW2, photographed, close-up, from nose to tail and wing tip to wing tip. Example shown is part of The Fighter Collection, based at Duxford. (90 images)

Grumman F3F CD54

A study of the faithfully replicated example of the 1930s U.S. Navy biplane as seen at the 2001 Flying Legends Show. (34 images)

Gloster Gladiator CD53

The Royal Air Force's last biplane fighter, star of late 1930s air shows and flown in combat during early WW2, including Battle of France, Battle of Britain, Mediterranean operations and North Africa. (50 images)

Fokker D.VIII CD52

The Fantasy of Flight Museum's example of the late WW1 Imperial German Air Service monoplane fighter, in full detail. (69 images)

Fokker D.VII CD51

The most famous of all the German fighter aircraft of WW1. The collection depicts the RAF Museum, Hendon's authentic, restored example. (44 images)

Focke Wulf FW 190A CD50

Germany's 'butcher bird' fighter of WW2, active on all combat fronts from 1941 onwards.

Fieseler Storch CD49

Arguably the first military STOL aircraft, this storky looking aircraft has long been a modellers' favourite. Two examples are represented, the machine at the Fantasy of Flight Museum in Florida and the RAF Museum Cosford's example. (images)

Fairey Gannet ASW1 & T.2 CD48

The Royal Navy's post-WW2 anti-submarine workhorse, that also served with a number of other air-arms. Most images are of Mk.T.2, that was more-or-less the same as the ASW.1. (110 images)

Fairchild Ranger CD47

Elegant U.S. high wing light aircraft in full detail. Two examples shown. (60 images)

Erco Ercoupe 415 & Avalon

Ercoupe CD46

The elegant twin finned light/sport aircraft. Both original Type 415 and later Alon resurrection examples. (115 images)



ORDER FORM - Aerodetail CDs

Please send me the following CDs:

Name:

Address:

Postcode:

Daytime Tel No:

I enclose a cheque for £

Make cheques payable to Doolittle Media Ltd

Please debit my credit card for £

(VISA / Mastercard - please delete non-applicable)

Card No:

Expiry date:

CCV:

SIGNATURE:

DATE:

Order on line at
www.flyingscalemodels.com

£12.99 (including p+p)* per CD *UK only

Postage: (Europe); £2.50 (World); £3.50

Send to:

Doolittle Media,
Doolittle Mill, Doolittle Lane, Totterhoe,
Bedfordshire, LU6 1QX. Great Britain.

Tel: 01525 222573 Fax: 01525 222574

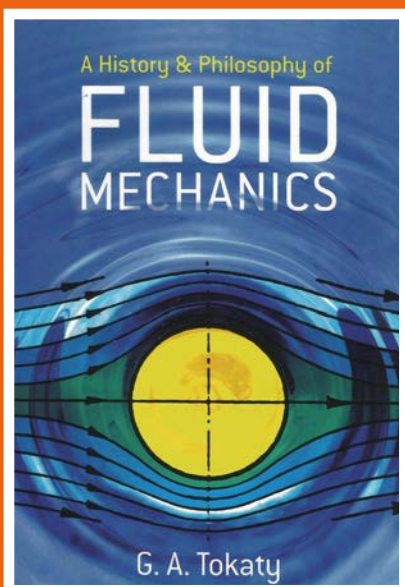
Email: enquiries@doolittlemedia.com

Allow 21 days for delivery



From the Armchair...

PART 24: Stuart 'Supercool' Sherlock attempts to explain... fluid mechanics and high-speed prop design



If you have ever watched the swirls and eddies present in flowing water, then your mind was deliberating on a branch of physics which has tested mankind since recorded history began. If, further, you were a student trying to study this subject, then you probably were driven to distraction by the maths involved - I am, of course, referring to fluid mechanics and calculus!

As an Aeromodeller, you may have wished that air were visible, so that these swirls and eddies of the fluid "air" would yield their secrets on the moment. How many times I have wished for a pair of magic spectacles that would let me see a thermal coming my way: a max guaranteed! Instead, I have felt the puffs of air that come with the thermal, or watched the movement of grass, or better still, piggybacked a better flier than myself!

There exists a book by G.A.Tokaty called "A history and Philosophy of Fluid Mechanics", 1971, ISBN-13:978-0-486-68103-0, which comes close to letting you see "air". This is a marvellous book, nearly devoid of the horrible mathematics, while having many excellent illustrations: certainly

a "must read" for the student attempting to study "Fluid Mechanics". Here is a taster of the contents: Mythology, Plato, Aristotle, Torricelli, Pascal, Bernoulli, d'Alembert, Navier, Reynolds, Zhukovsky, Lanchester, Flettner, Froud, Mach, and in topics turbulent boundary layer, flow separation, airscrews, velocity of sound, transonic compressibility, and supersonic fluid mechanics.

All the above are presented in lucid prose with many photos and diagrams. Even the cover illustration is exciting, showing the streamline flow of an inviscid fluid past an infinite cylinder. Transformations of that fluid flow, invented by Zhukovsky, permit calculation of fluid flow past aerofoil shapes, complete with the lift forces present at different angles of attack: just marvellous. This work of Zhukovsky is the basis for my own aerofoil calculations for propeller design. I just love it, so much better than drawing a line around the edge of my shoe.

So the word is, you cannot go wrong reading this book. You will have journeyed through time with genius and majesty. Now for an application in propeller design for F2A speed.

F2A Disclaimer

To save the reader from discovering my fraudulent past, the following disclaimer should be read. I have only ever entered two F2A contests. I won the first at 125mph with a G15 in an APS "Devil". I won because the other guys had switched over to tuned pipes, which gobbled up their fuel so fast that they never recorded a time: short on laps. The second contest, I thought I was good for third place, as there were only three entries, but a late entry bumped me down to last - and that was that.

Flying F2A

Now I have watched the experts flying F2A models at over 300kph. Looks easy, all you

have to do is pop your hand into the yoke and rotate around the pylon at 1.4 seconds per lap for long enough and you are done.

Well, there has been a burst of interest locally here in Perth, which has rather shocked us all. Anyone who can actually return a time, irrespective of

speed, is a hero. Either the motor won't start, come on pipe, or the model resist hitting the ground. Guys are flying combat models on short lines to give high rotation speeds, as training to even start to fly F2A!

Naturally, my own contribution is made from my armchair. The high crash rate has implied a good market for F2A props. These come with the counterweight for the single blade props already moulded in. So every crash wipes out both blade and counterweight.

The solution is a removable counterweight, which can be re-used time and again, saving some effort and allowing the cost of the blades to be reduced.

That said, unfortunately the blade hubs have to match the counterweight design, so I am the only supplier: such is my burden.

Now this meant I needed a good F2A blade design. I confess I have made over forty blade designs that have never gone over 291kph. But I present here a discussion on F2A blade design, all based on theory, with no experimental test results, and all generated from my computer and CNC mill. So now you know my fraudulent past, you may cast stones to your hearts content!

Blade design for F2A

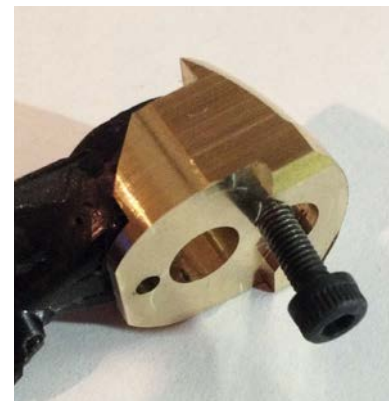
Now both F2A speed and F3D pylon race props have much in common. Tip speeds close to Mach 1 are inevitable in both cases, so the effects of the compressibility of air and the formation of shock waves are highly likely to be dominant factors in the blade performance. While conventional aerofoils, such as Clark Y are OK up to Mach 0.5,



Conventional F2A single blade prop with moulded-in counterweight. Breakage of blade loses also the counterweight.



Design with removable counterweight supports the blade radial forces on a spigot, which fits closely to the shaft. With the blade a close fit in the counterweight, radial stresses are similar to the moulded-in counterweight system.



The prop hub is a close fit on the axial spigot, requiring the use of a 3mm jack screw to facilitate removal of a broken blade.

above that, problems occur.

Compressibility effects make the section behave as though it is too thick, has too much camber and is operating at too high an angle of attack. There exists a mathematical formula called the Prandtl-Glauert rule, which can be used to re-shape the aerofoil to avoid the worst effects of the compressibility.

But above Mach 0.7, a new problem arises in the form of shock waves. Whenever the local flow velocity over the aerofoil exceeds the speed of sound, then shock waves can form. The waves grow as the local flow speed increases, forming first on the upper surface near the high point, and then later on the lower surface near the trailing edge.

That is all very well, but the flow behind the shock wave can be turbulent, causing a rise in drag. Not just a little rise, but a very large rise which can absorb engine power without producing a proportionate amount of thrust.

Tip Relief

Now it has been observed that the performance of a propeller running high tip speeds is better than it should be if



Experimental blade design, the intent being to reduce the effect of shocks. The wide tip look incongruous, but is highly washed out to reduce the blade angle and hopefully delaying shock wave for formation while retaining lift.

two-dimensional flow data were used for analysis. The conclusion to be drawn is that the three-dimensional flow at the tip delays the formation of the shock waves. Thus tip speeds up to Mach 0.95 are not necessarily fatal, but remain best to be avoided.

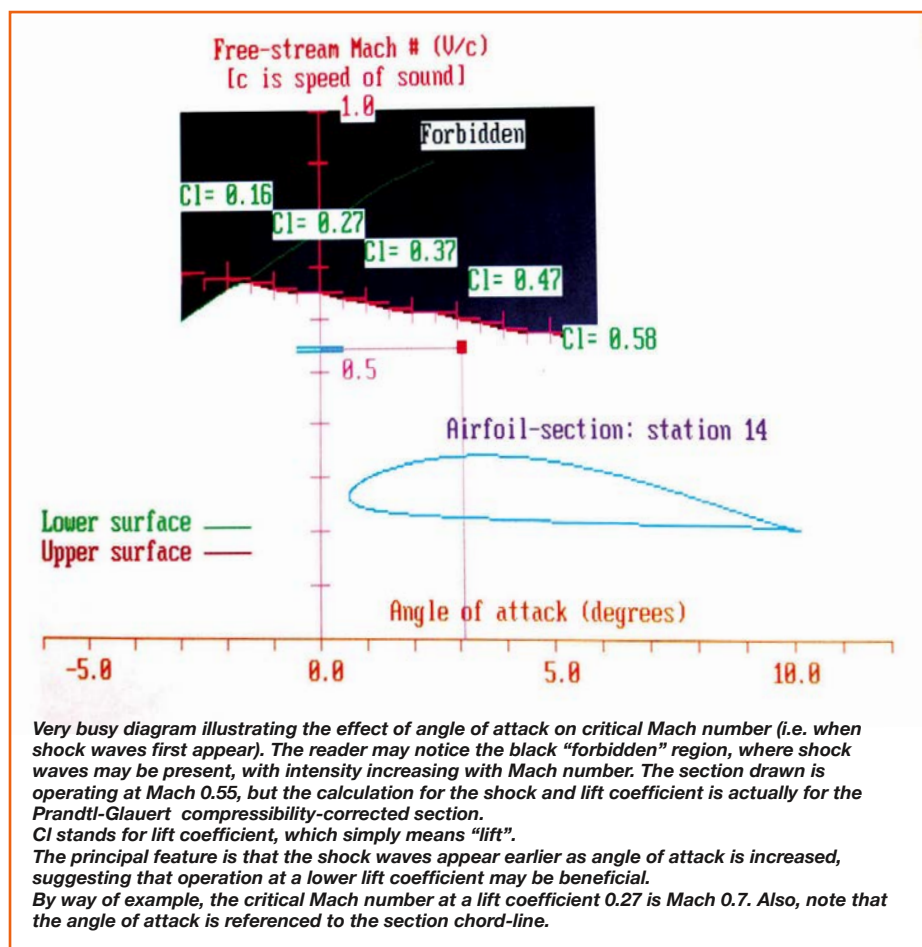
Section design for $M > 0.8$

As mentioned earlier, the work of Zhukovsky (and others) permits the calculation of local flow velocities over the propeller surface.

This being the case, the effect of section camber and operating angle-of attack on formation of shock waves can be examined theoretically.

Since both camber and angle-of-attack function to increase lift (the result of airflow local speed increase), these variables need to be adjusted to delay shock formation. My conclusion is that the sections must thin, and operated at a low angle of attack. A study of the presented diagram reveals this. I believe efforts to reduce shocks by sweeping back the tips are relatively ineffective, contributing rather to tip relief without retaining good lift characteristics.

Further, it is possible that the lift lost be lowering the blade element angle-of attack near the tip may be compensated by increasing the blade chord near the tip. ●



Limited Time Subscription

Subscribe today and receive A VERY SPECIAL gift worth a £39.95



FREE GIFT WORTH

We have teamed up with our special gift. For subscribing to Soldercraft Multipurpose Gas Soldering Tool

This offer is available to both new and existing subscribers. If you are an existing subscriber, we will give you a further 2 years, so do RENEW TODAY while stocks last

Soldercraft Multipurpose Gas Soldering Tool worth £39.95 RRP!

This 11-piece kit is ideal for soldering, brazing, hot air shrinking and hot knife applications. The hot knife is particularly useful for cutting, sealing and modelling. The soldering tool is cordless, safe and simple to use.

Specifications:

- Cordless, safe and simple with electronic instant ignition system
- Anti-flaring and meets the most stringent safety standards
- Soldering temperature up to 500 C (930 F); Flame welding and brazing up to 1300C (2370 F)

- Hot air shrinking temperature up to 500 C (930 F); Hot knife for cutting, sealing and modelling
- Height-227mm, width -27mm, grip diameter-25mm, dry weight-175g.
- Working time-60 minutes (Based on a full tank and the flame length in 20mm or 25/32 inch)

Soldering Tools

The Soldercraft collection includes a number of tools for the Multipurpose Gas Soldering Tool such as a replacement soldering head, various tips, hot knife and hot blower. The Soldercraft range will have the perfect tools for you, ideal for your craft and hobby use.

* Terms and conditions

You must be aged 18 and over to be eligible for the Soldercraft Multipurpose Gas Soldering Tool. While stocks last. Gas not included. Customers attempting to take out this offer after all stock is gone will be contacted before any money is taken. Subscriptions taken out with this offer will not be refunded if cancelled.

On Offer!

.95 RRP!

WORTH £40!

Our friends at Soldercraft to offer you a very special gift. If you subscribe with us for 2 years, you will receive a Multipurpose Gas Soldering Tool!

Both NEW and EXISTING subscribers. If you are a new subscriber, we will simply extend your current subscription to 2 years. Do not wait until your subscription runs out, or you will miss out!



24 ISSUE AEROMODELLER SUBSCRIPTION

First name.....

Surname.....

Address.....

.....

.....

.....

Country..... Post/zip code.....

Telephone Number.....

Email.....

☐ Please tick to confirm that you are aged 18 or over

2 year subscription:- UK; £110, Europe; £146, Worldwide; £164

Renewal/Extension ☐ New Subscription ☐ Starting with issue No.....

Please debit my credit/debit card for £.....

Visa ☐ Mastercard ☐ Maestro ☐ Cheque ☐

Card number:

Expiry date..... Valid from..... CCV Code..... Issue No.....

3 digits on the signature strip If applicable

Signature..... Date.....

Please call our subscription line or mail this form, or a copy, to:

Doolittle Media, Doolittle Mill, Doolittle Lane, Totternhoe, Bedfordshire, LU6 1QX, UK

Tel; +44(0)1525 222573

Fax; +44(0)1525 222574

Online; www.aeromodeller.com

(Photocopies of this form are acceptable)

Please be aware that all credit/debit cards are processed through PayPal and this may appear on your bank statement

Maestro only

SUPERMARINE "SUPER TWIN" TYPE 325

25" span Profile CL scale model designed by Chris Coote for 2 x 0.5cc power...

Twenty years plus years ago, I was on holiday in Prague and discovered a small model shop in the side street adjacent to my hotel. Despite the language barrier, I was able to buy one of the excellent MP Jet 06 side-port

mini diesel engines. This has served me well in various models, including my Veron kit CL trainer "Provost". I subsequently obtained a second identical engine from a retiring SAM35 member here in Devon. This runs and starts just as well as my original. When

SAM35 announced its profile scale CL class, my thoughts naturally turned to a twin-engined model - but what prototype to choose? It would have been easy to pick a DH Mosquito, Lockheed Lightning, or perhaps a bomber like a Wellington or Hampden. I rejected the

The finished model with plug in uc fitted - Ok for tarmac, but is flying over grass, leave the UC off!



bombers, wings with high aspect ratio do not work in small scales, so back to fighters. Then I discovered this little gem in a 1981 Profiles magazine. The Air Ministry in 1940 were already looking for a faster and more heavily armed replacement for the Spitfires and Hurricanes that were then in use. The specification F.18/37 was issued for such a fighter and Supermarine responded with this little beauty, basically a stretched Spitfire with twin Merlins and a choice of 12 machine guns or 6 cannons for armament. Hawker proposed what was to become the Typhoon with the single large and troublesome Napier Sabre engine. Supermarine only got as far as producing a mockup of their design, and then got so busy with Spitfire development, that they abandoned this design. However scaling it up to approximately 1/20 scale gives this lovely little profile model, which is ideal for the plethora of small replica diesels such as the Red Fin range, which are now on the market.

As drawn...

My version complete with the 2 MP Jet 06 engines weighs in at 250g sans UC and flies really well on 35ft lines. Construction is all sheet with a solid 1/4" sheet elliptical wing, reinforced over the centre forward section with a 1/4" by 1/8" spruce spar, and 1/8" tailplane. Fuselage is hollow like the Veron kit Provost, using 1/8" sheet sides and cores resulting in a 3/8" thick profile which can be well rounded off to lose some of that stark outline you sometimes get with strict profiles. Similarly, the engine nacelles are laminated up from 3 layers of 1/8" sheet and a soft 1/4" sheet nose doubler, with a 1/16" ply nose insert to

provide the engine mounting. Both fuselage and nacelles have small squashed alloy tube inserts in the centre laminations to take the tricycle undercarriage legs (best for static only). These are bent up from 16swg wire with a "V" at the top which can be sprung closed a little to allow insertion into the alloy tube and fixed in place by friction. This allows the legs to be readily removed for flight over grass, or re-inserted if you want to fly over smooth tarmac and perform ROG, or touch and go's.

Carving the wing and leaving the centre and nacelle outer sections square makes final assembly and jointing more accurate. It is then simple to sand the excess square section away and blend into the airfoil wing section. I used pretty soft fuselage sides because of concerns over rearwards CG with that long tail moment, but compensated and reinforced by doping on a strip of lightweight glass cloth on each side from tail to wing TE.

Finishing

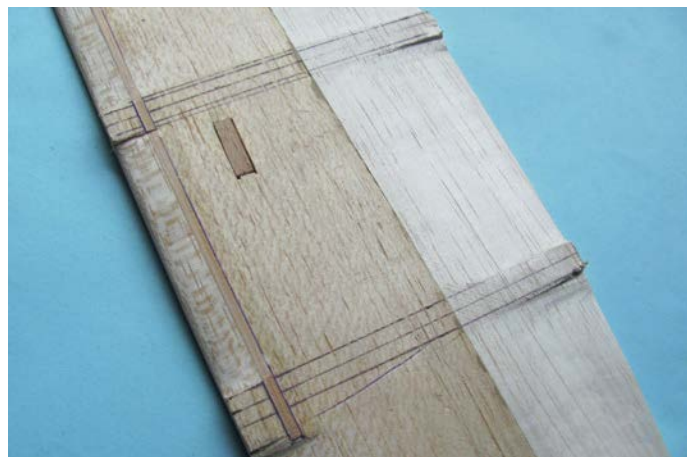
Finish is traditional lightweight tissue and dope covering to wing and tail with a single dusting coat of silver aerosol spray followed by a thin brushed coat of semi-matt yacht varnish for fuel proofing. Roundels were some vinyl stickers left over from a previous project. For holding the model off the bench when spraying, I put the UC legs in so had to mask them off. The easiest way to do this is with cooking foil as pictured, no messing with stuck fast masking tape etc! The eagle-eyed will spot that there are no leadouts on this model. For exposed controls I prefer to make my own bell-cranks from paxolin or epoxy PC board and put line clips direct onto



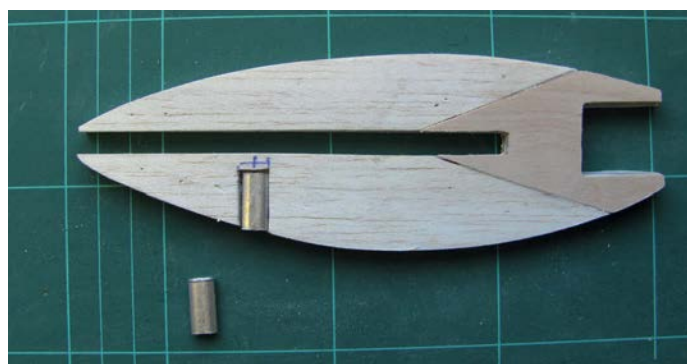
Kit of sub assemblies, ready for assembly.



The profile fuselage is hollow from 1/8" sheet and strip.



The wing, showing the inserted spruce spar and bellcrank support strip. Note the areas of the nacelles are left unshaped for maximum glue area.



One of the engine nacelles showing the UC tube insert, before other sheet side is fitted.



A detail of one of the main UC legs and slightly pinched mounting tubes.



Assembled, tissue covered, ready for the spray gun.



Chris uses cooking foil to mask the UC so the model can stand upright during and after spraying.



Installation of the outboard fuel tank, which screws to the side of the nacelle.



The inboard fuel tank is fitted forward to clear the line cut-out slot in the nacelle - note the motor's integral tank cover has to be removed from the spraybar.



A very pretty prototype and a bit out of the ordinary, too!

the bellcrank. The bellcrank mount is made up from two pieces of $\frac{1}{4}$ " x $\frac{1}{8}$ " spruce strip slotted into the inboard wing panel as shown on the plan. Note that you have to cut slots in the inboard lower engine nacelle to allow the control lines to pass through to the bellcrank. The line guide is simply bent up from paperclip wire and pushed into the lower surface of the wing with a dab of epoxy and a tiny nylon patch reinforcement. Do not forget the outboard tip weight, use about 10g of lead roofing sheet let into the underside of the outboard wing. You will not regret this additional weight when the inboard engine quits before the outboard one! As with all CL models - and especially scale types, the balance point should be forward. My model balances on the front line at the bellcrank position, and is nice and stable with good line tension for a small model.

Fuel tanks

Tanks are approx 5cc with height 15mm, width 12mm, length 30mm. I always make my simple tanks from just 2 pieces of tinplate, each bent into a "U" shape. Best source of smooth tinplate is now Tate and Lyle treacle tins. Bean tins, etc, all seem to have annoying re-inforcing corrugations all around them. I have also used corn beef tins! The base piece is folded up into a "U" section and is overlong (about 45mm in this case). This forms the top, side and bottom of the tank with a smooth side to mount against the nacelle. The second piece is cut to 15mm width and then each end bent up to form the

outer side and ends of the tank. Once soldered up it is easy to cut off the excess base piece material, but leaving lugs at each end, which are drilled for the retaining screws. The forward screw in particular goes into the internal ply engine mount, the rear screw goes into a cyano reinforced hole in the balsa nacelle side. The feed and combined filler/vent pipe are then soldered into pre-drilled holes, these holes need to be carefully plotted for position. The tanks have to be "handed". Fillers to inboard of flight side and feeds to outboard of flight direction! The filler/vent is a single large dia. tube (12swg), which I fill with a small dia. tube (16swg) so that the vent action is around the outside of the filling tube which is inserted to the bottom of the tank to fill - an old trick from early 1960's single vent team race tank designs - and one less tube to solder in.

When fitting the tanks, I found that to clear the forward leadout on the inboard nacelle, the tank had to be right forward and the rear mounting lug cut away to suit. This meant I had to carefully disassemble the integral tank top and remove it from the spraybar assembly. No such problems with the outboard motor, just needs the choke tube angling slightly to clear the tank, pictures hereabouts make it clear, I hope.

Finally...

Best of luck if you build one, or even use these ideas to generate a different aircraft type for the informal SAM35 profile scale CL events run at Old Warden by the Peterborough club. ●

Profile Scale CL Twin for 2 x 0.5cc diesels
Designed by CHRIS COOTE



WONDERFUL OLD WARDEN!

DAVE BISHOP, BRIAN LEVER AND JOHN ASHMOLE REPORT ON 2017 MODELAIR MAYFLY...

What a joy it was to be at Old Warden in Bedfordshire again. It was the first of three Modelair events run by Ken and Sheila Sheppard on behalf of the Shuttleworth Trust and the weather was kind once again, apart from the occasionally blustery wind which, luckily for the radio flyers, was almost straight down the runway. Old Warden model flying weekends are unique in that all three main aeromodelling disciplines all run at the same time, and it is difficult to keep up with the many areas of modellers specialising in their particular form of our sport! For instance, if you have your back to the pristine Shuttleworth hangars, the flying field is shaped like a letter L, with the long part of the L being the main

runway opposite you and the short leg of the 'L' comes along the left hand side from the control tower right up to the main gate entrance. The control tower is where the general announcements are made on the Public Address system. So, first of all, on the "short" bit, there are several circles where the Control Line flying (organised by SAM 35) takes place. There are so many different competitions going on that the spectator can only understand it all if you study what's going on. There is no commentary at this place, as the organisers work hard to maintain an easy-going atmosphere, with just important announcements being relayed via the speakers. The best way to find out about what is going on is to talk to someone taking part to find out what each section is all about.

Modellers are all very friendly people and will always tell spectators what it's all about! Here's a taster of those Control line events that make real sense of those seen "doing it" and they are all enjoying every second. The first is "Nipper Speed" where the engines are 1.5cc and the lines are 42feet long. All pilots must wear a mandatory wrist strap (a great safety idea) and anyone "whipping" will be instantly disqualified. The next lot of control line chaps (I didn't see any ladies this time as there has been in past years) were under the heading of "Rascal racing and Speed," where the engines were 1.5 cc, lines 45 feet long and a wrist strap was mandatory again. That race was for 100 laps after a checked "pull test" on the lines. Then there was the next group of "Vintage Team Race" which were all displaying

Not the usual line up for Ebenezer guys and gals, but you're all there!





Andrew Longhurst with "Redwing" as used in the Frog Senior contest that day. Finished third.



Norman Britton (in SAM 35 shirt) receives his Nipper Speed certificate from SAM 35 President Brian Lever.



Three generations of one happy aeromodelling family head for the Ebenezer pits!



Julio Isidrio from Portugal with his winning concours Ron Moulton designed Rascal stunter.

SMAE logos (what the BMFA used to be called many years ago). The engines are plain-bearing 1.5cc. The next group of control line modellers were the "Trojan Racing Speed" and those engines were 1cc and the lines at 40 feet. Wrist straps were again mandatory and all pitmen had to wear a hard hat. 40 laps were flown for starters and the final was for 80 laps.

So you can see that if your main modelling interest was control line flying, you are well and truly catered for. One circle had some very old and wonderfully sounding "big sparkie" old timers that originated from South Africa connected to the super wonderman, the late Ron Moulton (the Mayfly weekend incorporates the Ron Moulton Memorial Day on Saturday). A Carrier Deck competition was also being flown and near to them, were the large aerobatic stunters, which were absolutely terrific.

As a teenager (long before Pontius was a pilot), I spent many hours control line flying (always with my left hand in my pocket, of course) at Littlehampton and my monthly Aeromodeller was filled with pictures of the young dynamic stars who won this and that specialised control line competition modellers, where ever they were run. The great thing is that if you do go to a ModelAir event at Old Warden, you will find those stars are still "at it" going around and around with no signs of giddiness whatsoever. The only difference is that they are a little older now, but everyone you meet and talk to are in their element and enjoying every minute of the weekend, along with their long time mates. I had the pleasure of meeting some of those control line travellers who come from abroad purely to fly their control liners there and meet up with old and new friends. Three of them were named Niels Erik Hanson, Claus Melcher and Jens

Geschwendter and they were having a great time again as they told me that they are regular attendees - and I could see that they are good at what they do.

Beyond the control tower on the left hand side of the airfield is where the free flighters gather and nowadays, many radio-assist old time ex-rubber powered models feature, too, fitted with small electric motors and tiny servos to keep them in sight (this class is called RTM - radio trimmed models - Ed.). Nowadays they are pretty well guaranteed to make a safe landing in the field after a long flight all controlled on 2.4 GHz radio. The variety of the types of FF models flown is a real eye-opener and well worth a couple of hours watching what goes on - the smell of diesel fumes, the smoke from the Rapier rocket motors, the shout of 'HEADS' when a low flying model threatens to claim the same airspace as the modellers/spectators - the sheer majesty of rubber powered models floating by - it is pure magic!

The right hand side of the airfield is where the radio control section is "in action" for the whole of each day run by the same super team of chaps from the North London and Croydon and District clubs, who are so friendly and helpful to everyone and run a friendly and laid back flightline. There is a Transmitter Control in operation, because some radio modellers still prefer using 35MHz, so there is always a pegboard there. The yellow-jacketed team that run the radio section slots are the nicest one could wish to meet - very conscientious about safety and flight discipline, but never 'in your face' like some other flightline teams I have known.

Another fun event at the ModelAir weekends is the 'Kids Competition' on the Sunday (usually the busiest day). The children who

want to have a go (age groups range from 4 yrs to 13 years old) are each given a free chuck glider kit each (very kindly sponsored by Belair Kits), and a workshop is held to show how to complete it (mums and Dads can help!). Then the kids, en mass, with parents and spectators go into the free flight area and in turn launch their gliders on a timed flight. There is always a whole lot of applause and cheers when this happens, as it is extremely popular with everyone - and hopefully encourages the aeromodellers of tomorrow - there are a few prizes, but in this competition, everyone who takes part is considered a winner! Another fun competition is the "Ebenezer" event where everyone gathers together near to the Control Tower where their models have been placed to be judged for the prestigious (and totally for fun) Bert Striegler Trophy and then flown to determine the winner, sometimes followed by an Ebenezer mass launch. The assembled crowd actually participate by deciding model eligibility and then, on the field, they get to judge the 'best flight' for the Trophy. This event epitomises the fun element that runs through the whole weekend.

I have deliberately left out the RC side of the event because I wanted to present a story of those modellers who mainly visit the left hand side of Old Wardens Modelair events. In other words, a piece about "real" aeromodellers. Those people are totally wrapped up in their particular parts of our sport and each and every one of them wish that it could go on for a whole week and not just a weekend. Nowhere else is such a weekend staged and catered for, only at Modelair at Old Warden, and one can only experience the incredible atmosphere by mixing among such people, as it has been my pleasure so to do.

When you come to Old Warden there



Can you recognise the Ron Moulton designs here, all entered in the memorial to this great CL pioneer. Team racers TK4, Gnat, Playbox, Scorchers and Auster RC design.



Five of the colourful BeeBug's that took part in the competition.

is so much to see that it is impossible to "do the rounds" in one day. It's far too vast with so much happening and in my "taster" about the place I haven't even mentioned the hangars that are filled with some 50 full-sized aeroplanes some of which are the oldest in the whole world. They are still publically displayed and flown on special days and evenings throughout the season. Then there's the super restaurant and by that the bookshop that is filled with the most wonderful aeronautical reading that one could buy. "They", the Old Warden employed team, can arrange conferences there and "jolly days" as well. The news is that there is going to be another hangar built on the far side of the left hand part of the airfield that will be home to full-size private owner aviators that have the pleasure of being housed there. If you visit and stay over, you will see full-size activity too, before and after the model flying sessions! Another added plus is the new refreshments 'pod' situated by the Control Tower, so bacon baps and a cracking cuppa are on hand with seating nearby and you don't have to leave the "action" to go to the restaurant near the entrance gate for a snack break. Finally, I have to say that in my experience, toilet facilities are

something that can make or mar your stay - and Old Warden has a score of ten out of ten from me, for the condition of the facilities - and that includes an Elsan disposal point for the campers as well. There are water standpipes on the campsite which are new for this season and next year we are promised some electrical hook-ups for caravans - not enough for everyone, so if you intend to camp in 2018, you are advised to book your hook-up well in advance, as they'll surely go like hot cakes!

The trade line at Old Warden is a place where you are guaranteed to get many bargains. The "regular" traders are there, including the already mentioned Belair family company with almost every 'real' kit available. I always like to have a catch-up chat with the BMFA team and once again the friendly and helpful family of Keith and Christine Lomax and other members of their family were on hand for the up to date news.

I ran my Family Model & Craft show at Plumpton Racecourse for 20 years and each one took the whole year's planning and pre-organising before it was staged. Ken and Sheila Sheppard have some help from the regular aeromodellers who are members of the Shuttleworth MFC but they (Ken and Sheila)

and this small team of volunteer grafters must be completely exhausted by the Sunday evening and much credit and congratulations must be given to them for each successful Modelair event.

The last date left for this year's "must go to" Modelair is the weekend of September 23 - 24 and I do hope to see you there. If you see me, please say hello!

Dave Bishop

Control Line - Brian Lever

This was an exciting meeting because along with established competitions such as Rascal Racing and Speed, there were two brand new events for the Veron Beebug and Nipper.

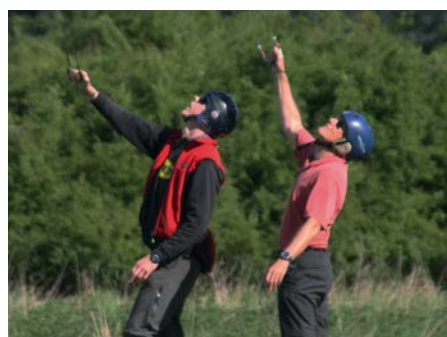
Nipper Speed

With 13 models for a first ever competition, this was indeed very encouraging. Just to remind readers the Nipper Speed event is for any 1.5cc motor and flown on .012 x 42' lines with a standing start, flown to 10 laps. The innovation is that prizes are allocated by engine type. Thus a DC Sabre flying at 45mph has just as much chance winning its class, as an Oliver Cub whizzing around at 85mph.

Interestingly, several competitors had not



Happy vintage CL organiser and flyer, Richard Evans, after winning his bout with Rothwell equipped Anduril design.



Vintage Combat is another feature of the Mayfly meeting - held right down at the bottom of the airfield - the competition takes all day, due to the large number of entries.



Nice to see an old style South Bristol transfer as designed by Chris Ottewell of Tailend Charlie fame.



Trevor Tabor (right) gets his desserts for second in Biplane Precision from John Ashmole. Trevor used a West Wings Aries (not previously published.)



Ken Bates, with Frog Tomtit entered in Frog Senior Class B, low wing & biplane.



Classic KK Skystreak 40 with McCoy 29 by Jason Bartlett. This is his favorite design and he has built over 30 of them!

measured their lines correctly when it came to line checking time. Variations on 42' included 41'8", 41'9" and 41'3". So better measuring for the next meeting at the Festival of Flight in September is required. However, with the aid of a calculator and clever minds, all the flight times were recalculated to reflect lines not to length.

The Nipper is a very cute-looking model with elliptical wings and tail surfaces and a

nice-looking fin. It is surprising that it never managed to give the KK Phantom a run for its money in the '50s heyday of control line flying. However, it was designed for a Mills .75, so when fitted with a 1.5cc motor, wing tip weight and/or some engine offset is essential to ensure rolling up the lines does not cause an upset. This unfortunately happened to the Nipper of Julio Isidro from Portugal which was damaged in the ensuing prang. I'm pleased to

say the model is now repaired and ready for the Festival of Flight meeting at Old Warden in September.

Competitors flew twice, and below are the fastest time class results for 10 laps.

Carl Holmes	Cyclon Jak 09	25.11
Jens Geschwendter	Cox Tee Dee	25.29
Taff Bollen	MVWS P/B	25.64
George Ganney	AP Hornet Diesel	25.73
Dave Smith	Oliver Cub	27.05
Jame Clark	Wasp 1.5	30.37
Brian Waterland	Elfin 1.49	32.41
Andrew Green	PAW 1.49	33.38
Niels Erik Hansen	Cipolla 1.5	34.16

Congratulations to all concerned and a special mention must go to the team who travelled all the way from Denmark to compete.

You will notice a very nice variety of engines used which was the main aim when dreaming up the class, and I know of many other Nippers under construction. It very much looks that Nipper Speed will become as popular as Weatherman Speed became in 2006, particularly as any 1.5 engine can become a winner. If you are contemplating building a Nipper, both The Vintage Model Company and Belair produce a very inexpensive kit, so what are you waiting for? Next competition to be held is at ModelAir Festival of Flight Old Warden on Saturday 23rd September. Hope to see you there.

BeeBug Bash

This eagerly awaited first competition was flown in sunny conditions with a breeze, which did not trouble the snappy BeeBug. Much has been written in recent months about the merits, or otherwise, of the BeeBug, with most builders considering it a rather tricky build. In particular, a certain difficulty with the positioning of the lower engine bearer which



ABOVE: 100mph Veron Nipper with modern Parra Wasp 1.5 racing engine!

LEFT: Cable car starting technique, push it with special yoke and broom handle until it fires then run clear. Interesting cable car Bluebird with Russian Rythm 2.5 engine running with an Oliver cylinder. Went well until front axle fell off due to rough track!



on the plan side elevation appears to pass through the leading edge of the wing centre section! I have recently completed the building of my Beebug, constructed from the VMC kit. I puzzled over the lower bearer position for some time until on reading the construction notes printed on the plan, which state: "The lower engine bearer is cemented in place under the leading edge". The wing cut out in the supplied fuselage sides is in the incorrect position to enable the lower bearer be thus fitted. On quickly making two new sides with a repositioned wing cut out, all was well and I found the building straightforward for a 1949 design. Suggested improvements are to fit two hard balsa (or hardwood) spars top and bottom of ribs rather than the central balsa spar, which makes for a rather weak wing. Fitting ply rather than balsa for formers F1 & 2 improves the engine mounting strength and a ply fin will certainly fair better in a flip over than the balsa one supplied. Covering the wing in nylon and the rest of the model with tissue will result in a tough little model that nicely

decorated will turn heads.

Another discussion was the feeling among enthusiasts that 42' lines would be too long for a 1cc powered BeeBug. This is probably true if the model was powered by a Mk.1 ED Bee, however, engines chosen for the first competition included the AM10, Frog 100 Mk11, ME Heron, MP Jet 061, all these motors powered the BeeBug effortlessly through all sections of the competition and indeed enabled a great part of the vintage stunt schedule be flown - more on this later.

Just to remind readers, the competition is made up of five parts. Namely: Concours, Precision Laps, Speed, Team Racing (two up only) and Stunt. Competitors elect which sections to fly.

Seven models were presented for the Concours section and the standard of construction and finishing was very high. Marks are out of 10 and two models scored 9, two 8, two 7 and one 6.

Next was precision laps, where the contestant must nominate the number of laps

to be flown between a minimum of 10 and maximum of 25. Three competitors elected to fly this section:

Julio Isidro	Nominated 22	Actual 11	34.50
Taffy Bollen	Nominated 20	Actual 08	34.57
Dave Clark	Nominated 25	Actual 10	35.00

Next was speed with 5 competitors electing to fly 10 laps from a hand launch and whipping resulting in immediate disqualification.

Julio Isidro	MP Jet 061	34.5 secs.
Tony Welch	AM 10	34.57
David Clark	AM 10	35.9
Taffy Bollen	MP Jet 061	39.03
Norman Britton	ME Heron	41.66

Then on to racing with two competitors electing to race. This is two up for 40 laps and no mandatory pit stops.

David Clark	2.16.34
Tony Welch	3.46.28



A line up of the 'Nipper Speed' entrants and pitmen – a lot of silver hair, but the smiles say it all!



One of the highlights of the weekend is the 'Kids Comp'. It's amazing just how enthusiastic they all are – ages range from 4 to 12 years old!



Members of the Ron Moulton family present the Memorial Trophy to this year's winner.



What the well-equipped vintage combat flyer uses for model storage and transport at Old Warden.



Contrast in vintage stunt, large USA Jamieson special compared to British small fast Ambassador design of the same period.



Bert Striegler Trophy winning Ebenezer piloted by Snoopy performed a spectacular flight just clearing the judging crowds heads before climbing away.



ModelAir organiser, Ken Sheppard (left) present the Bert Striegler Trophy to worthy winner,



This too large, overweight and over powered radio controlled Junior 60 was spotted flying in the FF area broke all the rules for flying there – owner take note (and everyone else, for that matter) – had a very interesting motor, though!



Both models were powered by Mk1 AM 10 engines and were very evenly matched with really fast and close racing. However, the Tony Welch model required more down time and David Clark emerged a worthy winner.

Finally, onto the stunt section with two competitors electing to fly. The flight is judged by what the competitor elects to fly so there is no strict schedule and no pressure for the pilot to fly more than they are comfortable with. Maximum Marks 100.

We were then treated to the BeeBug doing what it does best - stunting!

Both models were fast and stable with the ability to fly loops, bunts, inverted, horizontal eights, wingovers, and "sort of" overhead and vertical eights - just remarkable for such a small model! There is no doubt that the AM 10 Mk.1 is a motor well suited to the BeeBug and I can imagine it was a revelation for anyone moving on from a Mills 1.3 in the 1950s! Both these flights ended with resounding applause from all those who were watching, and the scores were close:-

Tony Welch	AM10 Mk.1	92
David Clark	AM 10 Mk.1	88

The competition now moves on to the Festival of Flight at Old Warden on Saturday, 23rd September, then on to the SAM 35 Rally at the BMFA National Flying site at

Buckminster Lodge on Sunday 1st October - with the final competition on Sunday 8th October at Middle Wallop.

There is all to play for and plenty of opportunity for other contestants to enter the fray. Kits are available from VMC and Belair at very reasonable cost, so plenty of time to build and enjoy the fun!

Free Flight Competitions SAM 35 – John Ashmole

The revamping of the SAM 35 Free Flight Calendar for 2017 resulted in two new events at Old Warden on the Sunday of "Mayfly." First - Frog Senior Duration, for kits and plans produced by Frog from 1953 to 1969. (NB: the current Vintage Model Company's kits are, of course, very acceptable.) This produced a high quality contest between a number of very experienced, small-model flyers. Using the "Red wing" design in "Class A", which is clearly the best performing of this range of classic and attractive types, the likes of Chris Strachan, Andrew Longhurst, Mike Sanderson, Tony Rushby, plus a good supporting cast, set in tricky weather conditions. Mr. Strachan prevailed, but the top four were separated by only seven seconds after three flights.

Class B, for the biplane "Tomtit" and the low wing "Raven" fared less well, despite a 40% bonus added to their scores. Next year, perhaps?

Also new was "Biplane Precision", which became a rubber-only event, as many diesel and glow bipes were on "Ebenezer" duty. It was run over three flights to a set target time, deviation from target recorded, lowest score wins. A delightful "Gemini" biplane won it for Martin Stonelake. This is just the kind of model that this event (which is repeated at the Nationals) is designed for, and we hope to see even more attractive and characterful biplanes next time.

Don't Forget!

The last ModelAir Model Flying weekend at Old Warden is in September (23/24th). Camping is available and highly recommended. Visit the ModelAir website for application forms, pricing and entry details – you can come anytime after midday on Friday 22nd – and stay until midday on the Monday 25th. It's a great weekend – if you've never been, please come and try the 'Old Warden Magic' for yourself!

Photo Credits

Photos used in this report were supplied by John Ashmole, Chris Coote, Brian Lever and Chris Ottewell – well done, team! – you know which are yours and you have my heartfelt thanks! – Ed. ●

AeroPost

Do let us know your thoughts on AeroModeller and aeromodelling in general. We're happy to receive post to the Doolittle Media office address, or emails to editor@aeromodeller.com – all are read although you may not get a reply. Featured letters may be edited.

Regards, Andrew Boddington



HERCULEAN CL MODELS

Dear Ken

The piece in the August issue of AM regarding the large Carvair CL model reminded me of my experiences with large multi CL scale jobs, many years ago. Attached pics are the only ones I still have of South Bristol clubmate, Ron Bye, with his monster Hercules – all 18lb of it and powered by 4 off OS 40's. I was the test pilot. Ron loved to build scale C/L multi's, but could not fly C/L worth a darn, despite us trying to get him going with trainers, etc. His first multi was an APS Viscount with a mixture of ED Racers and AM 25s. Never flown before, we took it to Old Warden for a scale day and I gave it its maiden flight in the competition. Luckily due to good preparation by myself, and the late Derek Anstey, it performed well. Encouraged by this Ron produced a similar size Black Widow twin, but upped the power to 2 OS40s. Once a gain a late finish and the models first flight at Old Warden. It howled around, but this time we had fitted 3-line control and good throttles, so all was controllable. It pulled like a demon at speed, and we clocked it at just over 90mph flat out with me leaning back at what seemed like 45 degrees.

The next Ron monster was the Hercules, which took him 2 years to build from his own design and scale up, this time with 4 of the OS40s plus a really good 3-line system made up by Derek from 1/4" sheet dural, etc. The model weighed in at 18lb and I was very worried about line pull. We test flew it one quiet evening at RAF Hullavington, because Ron lived in the village and was an honorary member of the local RAFMAA group. I decided to test like a real aircraft, taxi first, then fast taxi and gentle touch and go before final lift off. I was pleasantly surprised that the pull was not too great on the 70ft heavyweight lines used. The final first flight was in the gathering gloom with little or no wind. The model was fitted with full navigation and anti collision lights and looked brilliant. As I finally leaned back and applied up elevator, it was like leaning back on the stick of a real one. Those OS 40s carried it aloft effortlessly and it flew really well.

Later we entered it in a scale C/L centralised event at a very windy Hullavington. The organisers decided to fly in the "shelter" of the hangars on a dispersal bay. The turbulence was horrible. The Herc lifted off as she should and flew around OK, but kept being blasted by the turbulence, so I tried to pick my moment for a fastish landing. Just as I flared out the gust hit and pushed the model hard into the tarmac, damaging the U/C but nothing else. Ron was very disappointed not to be able to fly again, and subsequently repaired the model and donated it to the RAF museum at Hendon, where it was on display for a long time. You can see that he persuaded the CO of Lyneham to allow him to pose with his model in front of the real thing, how many scale modellers manage that?

Chris Coote, Brixham.

Chris – thanks for that, it sounds fascinating! If Ron Bye is still out there, or if anyone knows how to contact him, it would make a great article – I for one would love to know a bit more about 3-line systems, particularly throttling of multi engine installation. – Ken



CO2 MAINTAINANCE

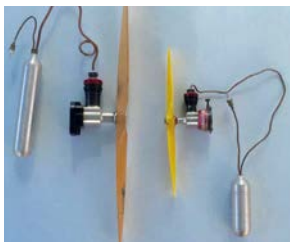
Dear Ken and Andrew

This is just a short note to thank you very much for publishing the excellent article on CO2 Engine Maintenance in the July 2017 edition of AeroModeller. I have a number of CO2 motors, most of which are now non-runners because I used a 'special' low-temperature lubricant advertised as being 'ideal for CO2 Motors'. The lubricant worked very well, but it eventually melted all the seals in the engines I used it on. Anyway, using the advice in the article, I attacked my Davis Diesel 0.020 and 0.049 motors with a sliced up O-ring and some silicone tubing, and within an hour I had both running sweetly! All I need to do now is find airframes to put them in!

Thanks again, Andy Sephton, Sandy.

PS: The 'special' lubricant also attacked foam, which led to a Modella motor falling out of a foam Me109 in flight... but that's another story!

Andy – it's great to receive positive feedback – Maris Disler will surely be chuffed to know that his words have helped you to revive a couple of defunct motors! – Ken



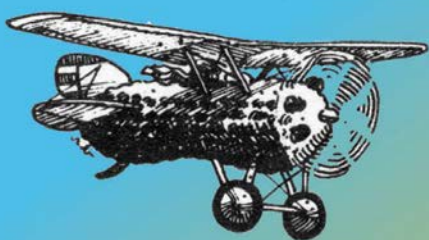
Hello Ken,

Thank you for publishing Dr Duncan Pepper's obituary in the last months issue of AM, written by his good friend John Kay – would you be able to add a few words and make a correction?

Duncan kindly donated all of his models, tools and flying equipment to be distributed amongst his fellow club members of the South Bristol Model Aircraft Club – they are getting a lot of airtime and we are getting to grips with some of the unorthodox models that Duncan was so keen on. The accompanying photo was taken at RAF Colerne just a week or two before he died, John Bond adjusts his Diamond Demon (left), while Duncan tweaks a capacitor powered model, with more of his fleet in front of him.

Regards, Martin Ambrose
South Bristol MAC





PLANS & THINGS

High quality scale free flight plans and modelling publications

Your source for:

- Plans by W.C. Hannan Graphics
- Bill Hannan Books
- Frank Zaic Year Books

www.plansandthings.com

micron radio control
Putting you in ... control

www.micronradiocontrol.co.uk
sales@micronradiocontrol.co.uk
Dept AM, Uplands House
Castle Howard Road
Malton, YO17 6NJ

YOUR ONE-STOP FOR INDOOR & MICRO MODELS
1gm to 150gm auw

Balsa Micro Aeromodel Kits
Superb Indoor and Park Flyer kits from Flight Line Plans, Mountain, Parkscale, Stevens Aero. Send a 1st class large-letter SAE for list.

Micro R/C Electronics
Micro/mini receivers, servos, actuators, motors, ESC, batteries, connectors, leads. Custom wiring service available.



1911 Nieuport £39.60
A little gem from the Stevens Aero 'Great Race' series. 450mm span, 40gm auw.



Clipped Wing Taylorcraft £32.40
The spunky clipped wing Taylorcraft has been pleasing airshow audiences for decades. The Stevens Aero micro model captures the charm of this delightful aircraft. 490mm span, 45gm auw.



Ace £54.95
The nostalgic lines of Stevens Aero Ace are presented with a strong nod to Henry Struck and his 1940's vintage New Ruler and American Ace free flight designs. Span 610mm, auw 64gm.



Pacemaker £54.95
Inspired by J.L. Salder's 1940 original Pacemaker with its beautiful profile and elegant wing shape, Stevens Aero rendition retains the lovely 'old timer' charm in a practical and easy to fly micro version. Span 690mm, auw 57gm.



Round2it £43.20
Round2it is a small electric sailplane designed to bring back that relaxing feeling of catching small thermals in the local field. The 36 inch span Round2it is super easy to build and easy enough for a beginner to learn how to fly with some friendly help. Span 914mm, auw 137gm.

Dens Model Supplies

Traditional and Electric CL/FF



E-Zee Timers Electric CL and FF

Cox 049 Engines from under £20...ECL kits from Stevens Aeromodel....Motors & ESC's....Glow Plugs from Merlin....CL accessories

On Line shop at www.densmodelsupplies.co.uk
Or phone Den on 01983 294182 for traditional service

D.B. SPORT & SCALE LTD

RADIO CONTROLLED MODEL AIRCRAFT KITS & ACCESSORIES



ORDER ONLINE AT DBSPORTANDSCALE.COM
TEL: +44 (0)1656 514950 EMAIL: SALES@DBSPORTANDSCALE.COM

Buyers Guide

FLITEHOOK

www.flitehook.net

Kits, Engines, Glues, Balsa, Coverings and Accessories. Mostly for free flight but we also carry a range of RC kits and bits.

Tel: 02380 861 541

42 Players Crescent, Totton, Southampton, Hants, SO40 9AZ

TO ADVERTISE HERE

Call Sean on:

01525 222573

sean@doolittlemedia.com

Tail End Charlie

Everything Comes to He Who Waits

Adrian Duncan wrote from Canada answering a question posed a couple of years ago -

"Chris, I read your 'AeroModeller' review of the book 'British Model Aero Engines 1946-2011' (Issue 962, July 2017) and promptly ordered a copy on the strength of it. A great piece of work! Complements the work that I do with my own web site very nicely!

<http://adriansmodelaeroengines.com/catalog/main.php>

I gather that you never received a response to your earlier query regarding the difference between an ETA 29 Mk.VI and an ETA 29 Mk.Vlc. I've recently completed an as-yet unpublished in-depth study of the ETA glowplug models. The ETA 29 Mk.VI first appeared in September 1958. As of September 1959, the manufacturers began to refer to the engine as the ETA 29 Mk.Vlc. As far as I can tell, the only immediate change was the use of a revised piston and gudgeon pin assembly, evidently introduced to resolve some assembly issues, or perhaps reliability issues, with the original configuration. The later addition of a tapered aluminium alloy spinner nut in place of the earlier hex-head component came well after the switch to the Vlc designation, hence having nothing to do with it. The functional design of the engine remained unchanged throughout."

His website is excellent so please visit it regularly. He also generously offered a free Craft Ale to the first reader to correctly identify the two aircraft in his picture on this page AND track him down in his workshop to claim it!

Then Hans Van Rij, a Dutch modeller living in Norfolk offered an answer to my propeller question -

"About 'Propellers', I can recommend the chapter on this subject in the excellent book 'Model Aircraft Aerodynamics' by Martin Simons. If you don't know him, he was a lecturer at the University of Adelaide, a full-size glider pilot and an aeromodeller. The book was first published in 1978 (which is on my book shelf), but nowadays I always use the Fifth Revised Edition of 2015 (ISBN 978 185486 270 9).

The propeller chapter is 20 pages full text, photo's and diagrams in colour."

Now to track down a copy!

Meanwhile, Roger Simmons and others continue to provide guidance on my ongoing adventures in rocket power. A friend said that one of the secrets of Jetex was that the Jetex gauze acted as a catalyst. Roger replied -

"As to Jetex gauzes acting as a catalyst, I asked both Bert Judge (of Jetex) and Alex Hutchinson (of ICI) about this many years ago, and both denied this was the case. But your friend is right in one respect - the original Wilmot Mansour-ICI pellets were superior to the later Sebel ones. The original pellets contained small amounts of asbestos which did act as a catalyst and provide a steady 'whoosh' (says Alex, who was proud of this). Sebel pellets didn't contain asbestos (they had a tiny % of clay) as they couldn't infringe the ICI patents.

The Powermax pellets were basically ammonium nitrate with wood flour, as by then the much superior guanidine nitrate was expensive."

He also offered a lifeline to Blaine Stone who bemoaned the unavailability of Rapier motors in the USA writing -

"Rapiers cannot be imported into the US at this time, but the good news is that there is now a possible US manufacturer who has a licence for his own Rapier L-2 equivalent 'X-1' motors. The guy responsible for this is a splendid chap called Chris Sorensen of Maker Research Labs, have a look at:"

www.indiegogo.com/project/preview/74dc1d73

Rocket Science - My First Rapier Trials

Armed with readers advice I modified my test model, a 1955 Bill Dean Skyray chuckie by adding a rolled paper tube motor pod on a pylon under the CG and silver foil to protect against efflux damage; finally accompanied by Ken Sheppard, I marched on to the field at Old Warden. As I hadn't been able to buy any DT fuse (the recommended method of ignition) I tried matches. Hopeless! Another modeller kindly lit my first fuse and off we went. Not too brilliant, but I hoped a bit of trimming would sort it. Subsequent Rapiers were initiated by another modeller heating a piece of wire and sticking it into the rear of the motor - very effective. Sadly I got the name of neither - if it was you, please tell me!

After a few "flights" realigning the thrust line between each attempt, I decided that it was too far below the drag-line to allow simple trimming, so I've decided to build a new test model in time for the September OW meeting.

Finally, comments, complaints and anecdotes direct to me at chrisottewell@anworld.com or by snail mail via the Editorial offices please. ■

By Chris Ottewell



Adrian Duncan in his workshop, somewhere in Canada! A bottle of ale awaits anyone who can track him down!



Chris's Rapier motor test bed Skyray, Mk.1 version with low slung rocket



A novel way to light the Rapier - gas torch heats wire cherry hot, then stick wire into Rapier fuse hole. Three hands needed! If you were Chris's saviour, please get in touch! Note foil protection on underside of wing.



It does fly! (In fact, a cheat, as the model was diving vertically at the time!).



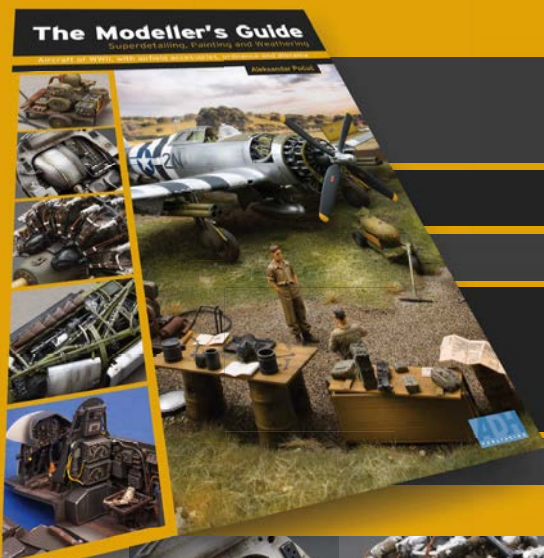
But low-slung Rapier motors do work - as this F4 Phantom clearly shows, also at OW!

NEW FROM DOOLITTLE MEDIA

The Modeller's Guide

Superdetailing, Painting and Weathering

Aircraft of WWII, with airfield accessories, ordnance and diorama



SCALE MODELLING:
A LOVE STORY READY
TO ASSEMBLE

TOOLS AND MATERIALS

TECHNIQUES

BUILDING THE AIRCRAFT

- SPITFIRE MK. IXC
- P-47D THUNDERBOLT
- JU-87D 'STUKA'

MAKING A DIORAMA

Aleksandar Pocuc

Modeller's guide to superdetailing, painting and weathering aircraft of WWII' book is intended for both beginners and advanced modellers as it covers wide variety of modelling tasks ranging from basic detailing, scratch-building, painting, weathering, machining custom parts using resin as well as scratch-building part from brass and aluminium and of course, diorama making. Basics about tools, paints and modelling materials have been covered as well. The book revolves around three subjects, P-47D Razorback, Spitfire Mk.IXc and Junkers Ju-87D Stuka, all in 32nd scale. Step by step concept will provide a good reference and ideas to all WWII aircraft modellers regardless of their experience.

ORDER NOW:



www.doolittlemedia.com



01525 222573



enquiries@doolittlemedia.com

FOR ONLY

£18.95

PLUS P&P



**DOOLITTLE
MEDIA**

DOOLITTLE MEDIA, Doolittle Mill, Doolittle Lane, Totternhoe, Bedfordshire, LU6 1QX, United Kingdom.
TEL: +44(0)1525 222573. FAX: +44(0)1525 222574. ONLINE: www.adhbooks.com

Still cutting parts by hand! Try a Belair Laser Cut Parts Set

Call 01362 668658 for your free Catalogue
or visit www.belairkits.com



Laser Cut Parts Sets for all your favourite Vintage Models

Made in England - Shipped Worldwide

