

● B.E.2e MODEL, TYPE HISTORY, SCALE DRAWINGS & RESTORATION

# Flying **Scale** Models

06/10

[www.flyingscalemodels.com](http://www.flyingscalemodels.com)



**SUBJECTS  
FOR SCALE  
PIEL CP-30  
EMERAUDE**



**WARBIRDS  
OVER  
SCAMPTON**



## PT-19

**Eduardo Esteves' stunning 1:3.6 scale,  
118" span Fairchild PT-19**



**FULL-SIZE FREE PLAN  
ALBATROS D.III**

**A 1/8th scale model for electric power and four-function control**



**PUBLISHER**

Tony Dowdeswell  
[tony@modelactivitypress.com](mailto:tony@modelactivitypress.com)

**FINANCIAL DIRECTOR**

Mimi Dowdeswell  
[mimi@modelactivitypress.com](mailto:mimi@modelactivitypress.com)

**ASSOCIATE EDITOR**

Alec Gee  
[alec@modelactivitypress.com](mailto:alec@modelactivitypress.com)

**EDITORIAL CONSULTANT**

R.G. Moulton  
[ron.moulton@uwclub.net](mailto:ron.moulton@uwclub.net)

**ADVERTISING SALES**

Lisa Dawson  
 (tel: 01684 311514)  
 Skype: lisa.dawson1  
[adverts@modelactivitypress.com](mailto:adverts@modelactivitypress.com)

**SUBSCRIPTIONS**

Jackie Dunton  
[subscriptions@modelactivitypress.com](mailto:subscriptions@modelactivitypress.com)  
 (Tel: 01493 377267)

**DESIGNER**

Peter Hutchinson  
[design@modelactivitypress.com](mailto:design@modelactivitypress.com)

**FLYING SCALE MODELS** is published monthly on the second Thursday of each month. All rights strictly reserved. No part of this publication may be reproduced in any way without prior agreement of the publisher. All material and artwork originated by Model Activity Press Ltd., photographs, drawings and plans used in the magazine become the publisher's copyright under copyright law. The company reserves the right to suspend or refuse any advertisements without giving reasons. Whilst every care is taken to avoid mistakes, Model Activity Press Ltd. cannot be liable in any way for any errors or omissions. The publisher does not accept responsibility for the bona fides of advertisers.

No responsibility can be accepted for any unsolicited material and the views and opinions expressed in this magazine do not necessarily reflect those of the company or the employees.

**Newtrade distribution:**

Magazine Marketing Company Ltd Octagon House White Hart Meadows Ripley Woking Surrey GU23 6HR  
 Tel: 01483 211 222

**Model Trade Sales:**

For all credit card orders including subscriptions please call or fax: 01493 377267. Between 9-30am - 14.00pm or email: [jackie@modelactivitypress.com](mailto:jackie@modelactivitypress.com) After 2pm please call our main office (see below)

Model Activity Press Ltd.,  
 5 Chiltern Business Centre, 63-65 Wooside Road,  
 Amersham, Bucks, HP6 6AA. Tel: 01494 433453  
 Fax: 01494 433468.

**USA Model Trade Sales:** Kalmbach Publishing Co.,  
 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI  
 53187-1612.  
 Tel: 800 558 1544 Fax: (262) 798-6579

**US POSTAL SERVICE**

FLYING SCALE MODELS published monthly by Model Activity Press Ltd., 2221 Niagra Falls Boulevard, Niagra Falls, NY 14304-5709.  
 Periodicals postage pending at Buffalo, NY.  
 US Postmaster: send address changes to Flying Scale Models, PO Box 2165, Williamsville, NY 14231.

**Printed by:** William Gibbons & Sons Ltd., 26 Planetary Rd., Willenhall, West Midlands. WV13 3XT

**Annual subscriptions**

12 issues per year:-  
 U.K. inland £42.00 p.a.; Europe £56.00 p.a.;  
 Worldwide £60.00

ISSN No: 1368- 9002

© Model Activity Press 2007



[www.flyingscalemodels.com](http://www.flyingscalemodels.com)  
[www.modelactivitypress.com](http://www.modelactivitypress.com)

# Formatic

## FLYING SCALE MODELS - THE WORLD'S ONLY



### ON THE COVER

The Fairchild PT-19 is a handsome looking aircraft that seems to have received scant attention from scale modellers since the demise of the old Sterling Kit. Eduardo Esteves' thought so and produced this stunning 1:3.6 scale, 118" span example revealed in detail by Simon Delaney on page 20 of this issue.

### INDEX TO ADVERTISERS

Classifieds	63
E-Retract	05
Everything Airbrush	43
Logic R/C	64
Screwfix Direct	07
Teeside Model Flying Club	43
Web Directory	63
Weston UK	43
Woodspring Wings Show	05

### HOUSE ADVERTISEMENTS

AeroDetail CDs	44-45
Binders	62
Cliff Charlesworth	58
Component Parts	18-19
Plans	59-61
Subscriptions	06



# On...

## ONLY MAGAZINE FOR SCALE MODEL FLYERS

## June 2010 No.127



## MODEL ACTIVITY PRESS

5 Chiltern Business Centre, 63-65 Woodside Road,  
Amersham, Bucks, HP6 6AA

Tel: 01494 433453 Fax: 01494 433468

email: [enquiries@modelactivitypress.com](mailto:enquiries@modelactivitypress.com)

- 4 CONTACT**  
News from the Scale scene
- 8 WARBIRDS OVER SCAMPTON**  
Alex Whitakker files his bumper photo-report of the Royal Air Force Model Aircraft Association's 2010 spring Warbirds meeting
- 14 IT'S ALL A MATTER OF ANGLE!**  
John Carpenter explains the geometry of rake-forward/rake-back retracting undercarriages
- 20 PT-19**  
Simon Delaney gets close and personal to Eduardo Esteves' stunning 1:3.6 scale, 118" span Fairchild PT-19
- 26 THE QUIET ZONE**  
As a follow-on from last month, Canadian modeller Frank Jaerschky offers more details of the models in his electric fleet
- 30 B.E.2E TYPE HISTORY**  
Early WW1 reconnaissance and bomber
- 32 B.E.2E SCALE DRAWING**  
1:40 detail three views
- 34 BE2E THE MODEL**  
Roy Scott's 1/6th scale masterpiece for .60 size engines
- 39 B.E.2F RESORATION**  
Not quite a B.E.2e, but externally, the 'f' version is near enough for Paul Butler's collection of detail photos presented here, to be a good source of surface detail
- 46 FULL-SIZE FREE PLAN FEATURE**  
**ALBATROS D.III**  
A 1/8th scale model for electric power and four-function control, designed by Peter Rake and built and described by Brian Allen. Part 1
- 50 PIEL CP-30 EMERAUDE & SCALE DRAWING**  
A really pleasing shape, plus airframe construction like an overgrown model make this French light aircraft a compelling subject for scale modelling
- 56 TECHNO SCALE**  
Mike Evatt walks the web for more Techno Scale topics



# Contact

## David Boddington 1935-2010

*David Boddington, perhaps, Britain's most widely known aeromodeller, both nationally and internationally, died of cancer on April 9th.*

**T**his widespread acknowledgement is perhaps even more remarkable because David was never a competition modeller, but had a huge influence on the aeromodelling hobby throughout his career of aeromodelling journalism. He had a modest start with his 'Strictly Simple' column that commenced with the February 1966 issue of *Aeromodeller*. In it, David dealt with and championed the 'single channel' non-proportional radio control side of the hobby. Back then, it was the backbone of the R/C model aircraft hobby as practiced by the majority of 'club level' enthusiasts. That 'club level' approach was one that David never lost sight of throughout his long career in publishing.

David's writings soon expanded to include *Aeromodeller's* sister title *RCM&E* with similar content for his 'Single Channel Chatter', written under the pen-name Button Man.

As the popularity of these practical advice columns progressed, so came a regular progression of R/C model designs, all set at a practical level to aid 'Mr. Average Modeller' in getting the most enjoyment out of the hobby. In those early days, David was something of a champion of the 'Galloping Ghost' control system, designed to give multiple proportional control from a simple single channel non-proportional system. The system, that had the back-end of the model continuously wagging, seemed to work entirely in spite of itself - but it worked!

With so much model design creativity flowing from his building board, it was a logical step when David formed *DB Models* to produce a range of R/C model aircraft kits that subsequently touched the aeromodelling lives of many in the hobby.

His first full time publishing appointment came in 1984 when he was appointed editor of the monthly *Radio Modeller* magazine, where he was able to fully apply his wide and extensive aeromodelling knowledge in full. Subsequently, he moved over to apply this same experience to *RCM&E* in the same publishing stable. There, his personal passion for scale models was put to good use when he launched '*R/C Scale Quarterly*', which he produced alongside the monthly *RCM&E*. The 'Quarterly' eventually became bi-monthly and is a typical example of David's industrious ability.

In 1995 DB became the launch editor for *Aviation Modeller International*, before 'retiring' to launch this magazine, '*Flying Scale Models*'. The partial stand-down was however only temporary, before Boddo moved on again to his final appointment to launch '*Model Flyer*'.

Throughout, there have been more than 50 of David's own designs in the range of sport radio control models that have been published, plus another dozen scale models including SE5a; Nieuport 28; Sopwith Snipe; Sopwith Pup; Sopwith Baby; Sopwith Tabloid; Avro 504K 1/4; Avro 504K 1/6; Tiger Moth; Stampe SV4B;. This quite apart from those in the *DB Models* range of kits.

Only one monoplane was ever featured, and it happened to be





both David's favourite, and the most popular among his devotees. It was the Blackburn 1912, as can be seen in the Shuttleworth Collection at Biggleswade. All the others were biplanes and mostly from the WW1 period.

*DB Models* celebrated 40 years of kit production up to last May. Started in the back garden on trestle tables with Ghost Riders went on through Tyro Major, Barnstormer, Autogyro to semi-scale Mannoek, Richthofen, etc with colleague David Toyer. 8,000 Tyro Major kits sold also made by MicroMold and currently by Eddie and Judith Stocker as *DB Sport & Scale*.

Aviation, both full-size and in miniature was David Boddington's passion from a very young age and was the source of many fascinating aviation-related 'incidents' that were always worth listening to when retold. This interest led him to a short R.A.F. National Service commission as a pilot. Back then, those selected for aircrew training were not supposed to be married, but between aircrew selection and call-up David married his wife Jill. When he eventually reported for duty, his new status created some confusion - so DB simply went off with the group separated out for pilot training. Problem solved!

Other stories from his short RAF flying career are fascinating. He totally wrecked a De Havilland Vampire on landing when the aircraft was caught in a wind gradient and 'arrived' on the runway like a sack of potatoes. Uninjured, David extricated himself from the cockpit, to greet the squadron C/O with a smart salute. No blame was attributed - Boddo 'got away with it' again!

Then, right at the end of his National service tour, his squadron was just about to convert from DH Vampires to the, then, new Hawker Hunter. DB nagged his C/O for a trip in the Hunter before he left the service, for which he duly received sanction. However, compared to the 'Vamp' as David always affectionately called it, the Hunter was a real hot ship; "*One flight was enough*" he said!

David's involvement in full size aviation did not end when he left the Service. Later, with his brother Charles and others, he creature '*The Barnstormers*' air show team, based on Tiger Moths. Also with Charles, there was involvement in aviation orientated movies and TV, such as '*Flambards*'. One of these involved the extensive 'reshaping' of some more current biplane types to better represent WW1 era. Thus modified, a 'permit-to-fly' was required from the relevant aviation authority and an inspector came to call - as they say. David recalled that the inspector's calculation demanded 500 lbs for ballast in the nose! The more practical, experience-led Boddington brothers immediately queried the calculation. 50 lbs was the final figure!

Such are just a few anecdotes from a rich and active life of a true aviation and aeromodelling enthusiast, during which far more was given than taken out. Maybe, that's the best one can say about anybody.

DB is survived by his wife Jill, his sons Andrew, and John and his daughter Sarah to whom I am sure all will join is offering our sincere condolences - and also thanks for a life so committed to our hobby.

**Tony Dowdeswell**

## THE SOUTH WEST'S PREMIER MODEL AIRSHOW WOODSPRING



Woodspring Wings Model Aircraft club  
**Sat 3rd & Sun 4th July**  
Claverham Drove, Yatton, Nr. Bristol

### LEADING TRADE STANDS

All Your Modelling Requirements  
Refreshments & Bar / Swap Meet

### TO FIND US:

Follow signs from J20 M5 &  
A370 between Bristol &  
Weston super Mare

Visit our website for details: [www.woodspringwings.co.uk](http://www.woodspringwings.co.uk)

**E - RETRACT**  
THE WEB SHOP OF R/C ELECTRIC RETRACT SYSTEM FOR THE 21ST CENTURY

**FOR WARBIIRD, JET, HELL, UP TO 15KG  
PLUG AND PLAY**

[www.e-retract.com](http://www.e-retract.com)  
Email: [info@e-retract.com](mailto:info@e-retract.com)

**What happens when your  
business is not advertised?**



# Nothing!

To find out how advertising can help your business contact:

Lisa Dawson 01684 311514

email: [adverts@modelactivitypress.com](mailto:adverts@modelactivitypress.com)



# Subscribe

**YES...**

**THE WORLD'S ONLY REGULAR MAGAZINE DEVOTED TO SCALE MODEL AIRCRAFT THAT FLY IS ONCE AGAIN AVAILABLE IN OVER 400 WHS HIGH STREET STORES**

If you still have difficulty finding **FSM** each month then you need to subscribe

By subscribing you get ...

- Full month-by-month continuity ● You'll pay less
- You'll avoid the hike to the shop to get a copy ... if you're lucky!

**EVERY MONTH, FSM** brings you all the **GOLDEN** nuggets of technique information that help you to perfect your scale models. We deal with scale modelling in depth and pull out all the stops to bring you the very best from the wide world of scale flying models, plus news of events, super scale three views, close-up detail picture features and super plans service construction features from the world's top scale modellers.

**FSM IS ACCLAIMED WORLDWIDE FOR THE QUALITY OF ITS CONTENT  
SO DON'T EVER MISS AN ISSUE...**

For all credit card orders please **call** or **fax**: 01493 377267.

**Between 9-30am - 14.00pm** or email: [jackie@modelactivitypress.com](mailto:jackie@modelactivitypress.com)

(After 2pm please call our main office)





# NEW CATALOGUE OUT NOW



**DREMEL**  
BIG ON DETAIL

## Rotary Tool

- 175W
- Full Variable Speed Control (5,000-35,000rpm)
- Collet Lock-Out Function

**Specification:**  
240V compatible with all Dremel attachments and accessories.

Quote: 65047



**BOSCH**

## Glue Gun

- For sticking wood, card, plastic, ceramics, fabric and leather
- Temperature of 200°C in 5 minutes

**Specification:**  
Uses glue sticks (Quote: 15867)

Quote: 77300



## Gorilla Glue 1 Litre

- Expands to fill minor gaps
- Bonds to metal, stone, wood, ceramics, foam, glass and more
- 100% waterproof for interior and exterior use
- Can be sanded, stained and painted

**Hazard Code:** Xn

Quote: 89137



**GoSystem**

## Quickpro Auto Power Torch

- Use at any angle
- Fully adjustable swirl flame
- Use with MAP/Pro gas or propane

**Specification:**  
1500W power output

Quote: 88334



**FORGE  
STEEL**

## Pliers Set

200mm (8") long nose and combination pliers, 160mm (6 1/4") diagonal cutters and wire strippers, 250mm (10") water pump pliers, zipped storage case.

Quote: 26300



**GET IT TODAY AT OVER 145 BRANCHES**

To find your local branch text 'Screwfix' to 78777 or visit [screwfix.com](http://screwfix.com)

**GET IT NEXT DAY**

on internet and phone orders received before 6pm.  
FREE on orders over £50 \*Zonal restrictions apply

**SCREWFIX**  
WHERE THE TRADE BUYS™

CALL 0800 015 5637 **CLICK** [www.screwfix.com](http://www.screwfix.com) **VISIT** Branches



I'll start with a confession. The RAFMAA Warbirds event dispenses with crowds, trade stands, trade slots, bringers and buyers, and associated fripperies. It is pared-down, no messing, hardcore warbird flying. Therefore, I stayed on the flight line all day, every day. This meant that I was so busy during each slot taking photos for you, dear reader, that I sometimes couldn't get to the pilots before the new slotteers replaced them! Therefore model data is not as rich as normal. Think of this as a photo-report with some scribbling attached, and just enjoy the models!

#### Wot's this? Sunshine?

RAF Scampton in early spring is normally not a tender place to pitch your tent, ensconce your Dormobile, or rest your caravan. However, Friday night was unseason-

ably warm and fair. The breeze was a bit chilly on Saturday, but right down the strip, and on Sunday it got just a touch cool, but the sky generally remained bright. Overall, the brightest weather for RAFMAA for a while. Mind you, despite multitudes of RAF guests, we still ran the central heating in the Command Module every night.

#### Quality and range

First of all there was a good showing of pukka owner-built models, as well as the inevitable ARTFs. This year there were also a goodly number of very impressive jets, no doubt taking advantage of the immaculate RAF tarmac. I did notice that an emerging trend with some warbird pilots was to take a good quality new ARTF, strip off the film covering and then spend a good bit of the winter adding a new fibreglass skin. This skin

was then used as the substrate for considerable reworking and scale refinishing. The net effect was of a highly detailed 'traditional' model, built in half the time. Being a pragmatist, I didn't sniff at their accommodation with modern reality, and their yen to be creative. Matt Harowven's very impressive P-47D Thunderbolt 'Jane' was a good example of this genre. I think he's made a smashing model.

#### RAFMAA

In case you hadn't noticed, there's a war on. Well, strictly speaking, two. So the fact that RAFMAA managed to make the show calendar at all this year is a testament to the dedication of the whole RAFMAA team. As punsters, we glibly attend these marvellous RAFMAA events, but we have no real idea of the professional strains our mates in the RAF



## SCALE ACTION *by Alex Whittaker*

# Warbirds over SCAMPTON

Alex files his Summer photo-report of the Royal Air Force Model Aircraft Association's 2010 spring Warbirds meeting



(and Army and Navy) are working under. However, as usual, RAFMAA was a splendid social occasion, with its fabled barbie on the Saturday night and many, many liver-threatening opportunities after the flying stopped for the day.

### Mark Hinton Jet Circus

Due to its 'invitational' status, RAFMAA has also become a useful place for certain well known show pilots to quietly shake down their new models prior to joining the summer circuits. Thus the Mark Hinton Jet Circus, including Mark and Anita Hinton and Vic Blackwood, was shaking down not one but two brand new jets, including an F-86A Sabre and a swing-wing F-14. The F-86 is from the *Skymaster* kit, spans 90", and weighs 17.5 kg. She's powered by a Booster 160 turbine from IQ Hammer. This Sabre, as

you can see for yourself, is frankly magnificent. It flew beautifully and sounded heavenly. The F-14 jet has had over 250 hours of preparation, and the swing-wing mechanism was a work of art in itself, embodying splendid precision engineering. The F-14 spans 102", weighs 22kg, and is fitted with two Booster 160s. As if this wasn't enough, in addition Mark was flying his well known MiG 21 Fishbed, which looks utterly aggressive in the air. However, let it be recorded that the Hinton Jet Circus isn't a jet ghetto. They had also brought a very fetching Focke Wulf 190 A7, from the *Airworld* kit, fitted with a lovely-sounding and effortlessly powerful five-cylinder 250cc Moki radial. All I can say is: that Hinton chap must never sleep!

### Mashinchy mayhem

No show without punch, as they say, and

ever-reliable Ali Mashinchy Jr. had brought some very impressive show beasts. First off, I was most taken with his new 2.8 metre span Lavochkin La 7, which was built by a certain Mr. Graham Buchanan, the Scots scale maestro well known to these pages. This really is an exquisite scale model, and its external fit and finish are exemplary. However, there were some internal teething problems, and although it flew, Ali clearly wanted to make adjustments. I'm really looking forward to seeing it fly again; my pics cannot do it justice.

Ali also flew, amongst many others, a very attractively schemed L39 gas turbine Albatros. Now Ali usually has a glossy BAe Hawk somewhere in his retinue, and this time it was an immaculate example presented in Royal Saudi Air Force colours. At one point, he flew this from horizon to horizon



**MAIN IMAGE:** Dennis Richardson's Folgore in full sprint. **BELOW LEFT:** Lavochkin built by Graham Buchanan, flown by Ali Mashinchy. A lovely model aircraft. **BELOW CENTRE:** Matt re-skinned and refinished the whole 'Jane' airframe over the winter. **BELOW RIGHT:** Mark Hinton taxis the Fw 190 back to the pits.







**TOP LEFT:** Mark Hinton's F-14 swing-wing mechanism. **TOP RIGHT:** Dave Toyer and his historic twin-prop Meteor prototype. **ABOVE LEFT:** Phil Holden's Il Frecco Tricolori-schemed Albatros. **ABOVE RIGHT:** Richard Scarborough's Albatros on a fast swooping pass. **BELOW:** There were zillions of Fw 190s.

standing her on her wingtip! Ali also wheeled out a splendid Grumman F7F Tigercat twin. This was a very snappy performer, and its twin engines had a wonderful heterodyning sound on low revolutions. Now later on, over a small libation, I thought about how lucky we are to have the likes of Mark Hinton and Ali Mashinchy. I thought about the contribution these two very different display pilots make to the UK show scene. I have come to the conclusion that if you invited just these two to your local field,

then you've got a whole DIY air show in two big vans!

#### Twin-prop Meteor

You won't see another one of these for a while! Dave Toyer has recreated the Rolls Royce Welland turboprop prototype from 1945, and has fitted it with two O.S. 91 FS engines. It flew very nicely, thank you, and looked suitably atmospheric, but a bit odd, in a good way!

#### Richardson rides again

Dennis 'Winchester' Richardson is one of my favourite club modellers, since he always seems to choose scale subjects I like. His taste will be familiar to anyone who loves Airfix models. He had brought his lightly-flown Boulton-Paul Defiant out from retirement for RAFMAA 2010, and she flew exceedingly well. (Dennis's dad flew in Defiants in WWII, so, naturally Dennis is rationing in the outings he gives his historic model). Dennis's tastes also stretch to the





Italian, and he also flew his unusual and elegant Folgore. He rounded off his day with his punchy Tempest. It took very little imagination to visualise this beauty beating up an unlucky column of Panzers.

### Warbird miscellany

I noticed that BMFA Scale Nats contender Richard Crapp was campaigning his well known Swordfish. I was also delighted to see a contingent of warbirders from my own neck of the woods, led by John Jackson with his 'Spitfire with a Star'. Naturally Ozyray (Ray Peters) was present, and he had a Spit, too. There were a couple of English Electric Lightnings on the day, and a whole circus of WWI bipes, so it wasn't just WWII types. There were too many Jugs and Mustangs to count, but curiously there seemed fewer 'multis' than of yore. Martin Chitty and Wayne Cox seemed to have brought the entire YT International (Wilson Li) warbird catalogue with them, and young Stuart Chitty flew as well as ever. In fact I think Stuart flew all weekend, since he was flying electric models at teatime, and breakfast time, too!

Dickie Scarborough was testing the flight envelope on his nifty new jet Albatros, and Tim Currie was flying a Breitling blue-schemed L-39, too. There was a third L-39 II Frecco Tricolore flown by Phil Holden. This must be some sort of record: counting Ali's there must have been four L-39s at one meeting. One of my favourite young show pilots, Luke Metcalfe, flew his stunning Airworld Focke Wulf, complete with five-cylinder 250cc Moki engine. Luke flew exceptionally well despite a set of retractors that stubbornly refused to perform their allotted function. As you can see from this brief retelling, it was a remarkably interesting flight line. No wonder I stood by my post all day - I was afraid to go for lunch in case I missed anything!

### Adieu Boddo

Whilst we were on the show line at RAF-MAA word came through that David

**TOP:** Everyone likes big Jugs... **ABOVE:** Ali had yet another superb BAe Hawk, this time in Royal Saudi Air Force colours. **BELOW LEFT:** Mark Hinton pulls a high G turn with Vic Blackwood's Sabre. **BELOW RIGHT:** Yup, its authentic, a Royal Navy Hurricane! It may belong to John Jackson? **BOTTOM LEFT:** Mark Hinton's awesome MiG on a dirty pass. **BOTTOM RIGHT:** Glossy, immaculate, Breitling-schemed Albatros by Tim Currie.







Boddington had died. Even though we all knew he had been very ill, we were still shocked. On Sunday morning, Dan Platts (RAFMAA and Chief Technician, The Red Arrows) who was presenting the pilots' briefing suggested that we observe two minutes' silence. We stood in an informal ring in the weak spring sunshine, with just the birdsong and Lincolnshire breeze. I bet almost everyone standing there had either built a Boddo design, spoke to Boddo at a show, or read a Boddo magazine. It was a very touching moment. Remember too, that the RAF and RAFMAA were honouring one of their own: Boddo was a jet pilot just after the war.

### Verdict

RAFMAA is warbirding cut down to the bare essentials. Even the camping is basic, but is no less fun for all that. I love the democratic aspect of RAFMAA. It remains a 'fly what yer brung' warbird event, with a surprisingly wide range of models. Where else would you see BMFA Scale Nats contenders rubbing wingtips with big show beasts and Sunday-best warbirds? Also, as the gate-keeper to the outdoor show season, it is becoming a useful place to spy some of the new show models in the air for the first time. As if all this were not enough, it is also a great social occasion. My considered advice has to be: try to wangle yourself an invitation next year!

### Acknowledgements

Grateful thanks to Station Commander RAF Scampton, Wing Commander A Stylianides MBE M.Sc. RAF, and Wing Commander Mick Evans of RAFMAA, for their kind invitation to the meeting. Also, huge thanks to Dan Platts (Chief Technician Red Arrows) and



**TOP:** Very nice Zero on a slow flyby; looks like the World Models version. **ABOVE:** Dennis Richardson's neat Macchi C32. **BELOW LEFT:** Mark Hinton swinging the wing on the F-14. **BELOW CENTRE:** Proud owner Vic Blackwood with his mighty Sabre, as flown by his partner in crime, Mark Hinton. **BELOW RIGHT:** You can appreciate why I am impressed by this Lavochkin, can you not? Magnificent, mate!



**ABOVE LEFT:** Ian Wilde's Lightning on short finals - he flew the full-size, too. **ABOVE RIGHT:** Nicely finished US AT-6 ('Harvard' in UK) coming in for a pukka three-pointer. **RIGHT:** Mark Hinton also flew this lovely Butcher Bird. **FAR RIGHT:** Richard Crapp's well known, and well observed, Swordfish.







**TOP LEFT:** Hawker Hunter on a dirty pass. **TOP RIGHT:** YT International Focke Wulf 190 ARTF, here giving the Teutonic equivalent of a Farnborough Pass. **ABOVE LEFT:** Dave Toyer's intriguing (and authentic) twin Meteor just about to touch down. **ABOVE RIGHT:** RAF top brass (face obscured for security reasons) with surprisingly inexpensive camera, being escorted back to the Guardroom by RAFMAA's Wing Commander Mick Evans. **BELOW LEFT:** Dennis Richardson's ace Hawker Typhoon. **BELOW CENTRE:** Ali's Tigercat really is an imposing aeroplane. **BELOW RIGHT:** Dennis Richardson's Boulton-Paul Defiant crossing the boundary fence.



Matt Harrowven's fine Fokker D.VII.



## SCALE TECHNIQUE *by John Carpenter*

# It's all a matter of angle!

John explains the geometry of rake-forward/rake-back retracting undercarriages

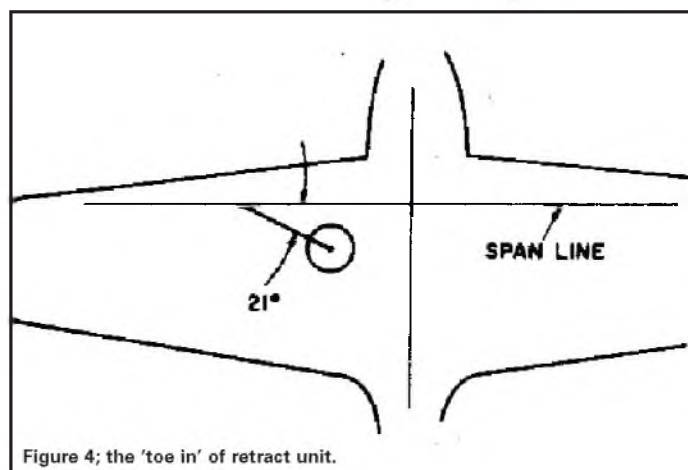
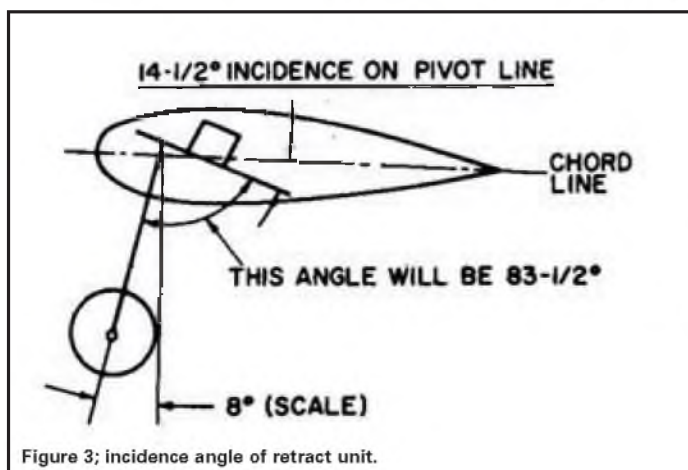
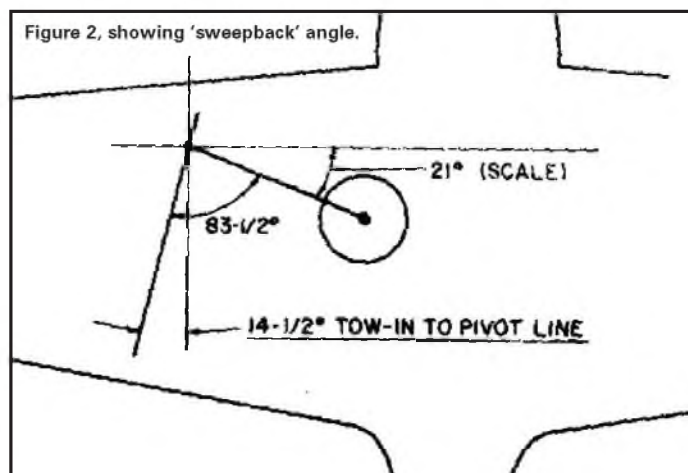
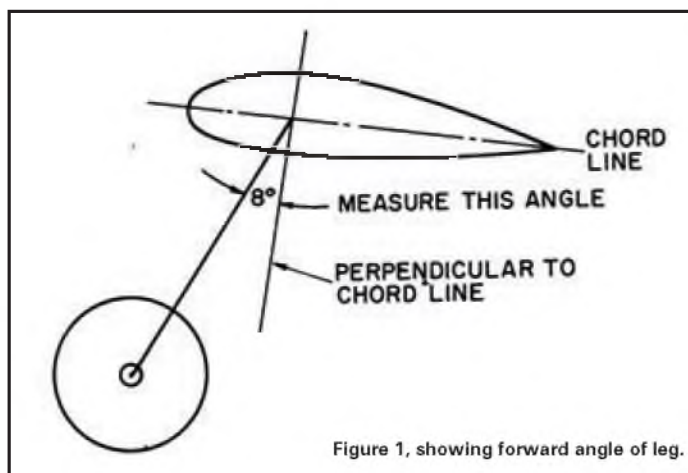
**R**etractable undercarriages have really come of age over the last few years and are no longer seen as unusual or 'difficult' at the flying field. However, when it comes to using them in scale models then a different set of problems can arise due to the need for the positions of the undercarriage in the 'up' and 'down' states as per the full-size. Not only are the systems likely to be operating longer and heavier legs with bigger wheels than your average model, but there are additional requirements for scale operation.

If you come up against the problem 'cold', it can be a tricky one to fathom,

but it is actually easier than you might think to fit retracts into your next magnum opus and in this article the intention is to provide a little guidance and, hopefully, a few helpful hints along the way towards a properly fitted and, most important of all, reliable system.

I must enter my usual caveat here by stating that not all the ideas here are my own. They are, however, those I have used over the years in my own models. In general, the ideas presented here are in pursuit of practical and reliable scale operation and as such might cost a little in the scale fidelity area. Purists might need to look away occasionally!

I am not going to bore you here with discussion of which type of retract system might be best for your particular model. Suffice to say that, having tried them all over many years, the school of hard knocks and bitter experience has convinced me that pneumatic systems are far and away the best from a reliability point of view. They may cost a bit more but good systems repay that investment in reliability and strength. However, if mechanical or electrical systems are your preference then hopefully there will still be something useful for you here - and it must be said that there ARE some very good ones available







In-line connectors and Robart adjustable control valve.

Whilst the general problems of fitting the system in the model can be quite straightforward, for example finding a discreet location for a fill valve and air tank, difficulties can arise in getting the retract units themselves fitted into the wing. Getting the geometry right seems to cause a lot of head scratching. The particular problem arises when modelling aircraft where the main legs are angled forward when down but rake back when up. The Spitfire and Hurricane, Hawker Typhoon, Tempest and Sea Fury are good examples of this. I had this problem on my very first retract-equipped scale model many years ago and Dave Platt, doyen of scale modellers, came to my rescue with a relatively simple method of calculating the angles at which the retract unit should be mounted within the wing. (Note the word 'angles' - because, for aircraft like the ones cited above, it's a case of angles in three dimensions.) I have used his method on every retract-equipped model since. Dave very kindly gave me permission to publish his method, so here it is.

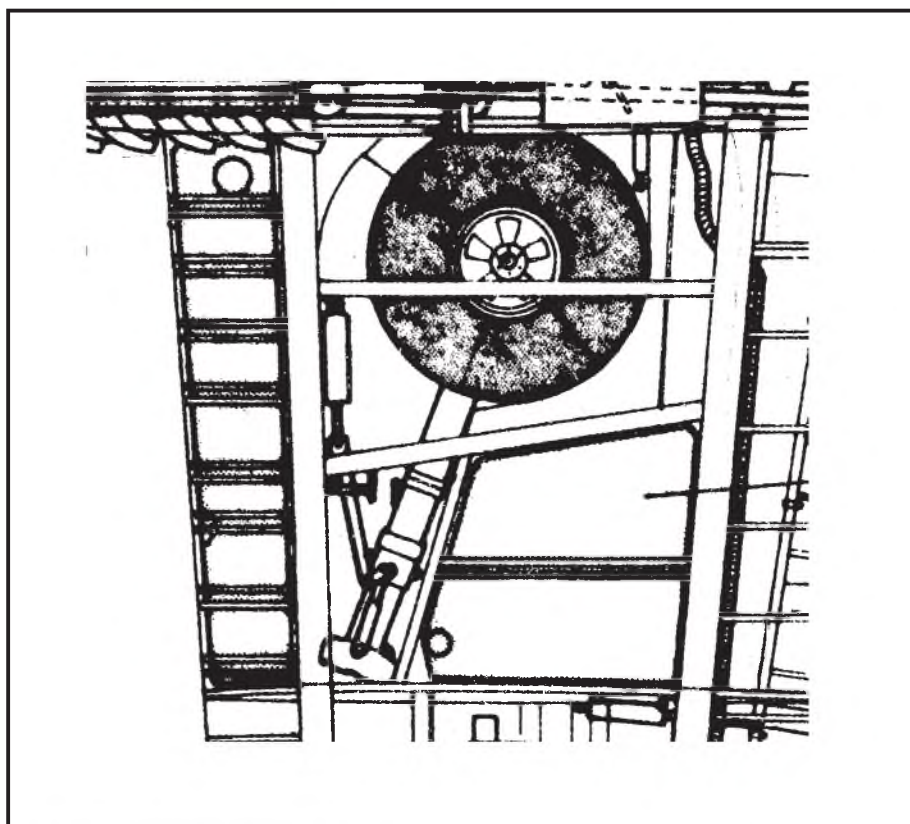
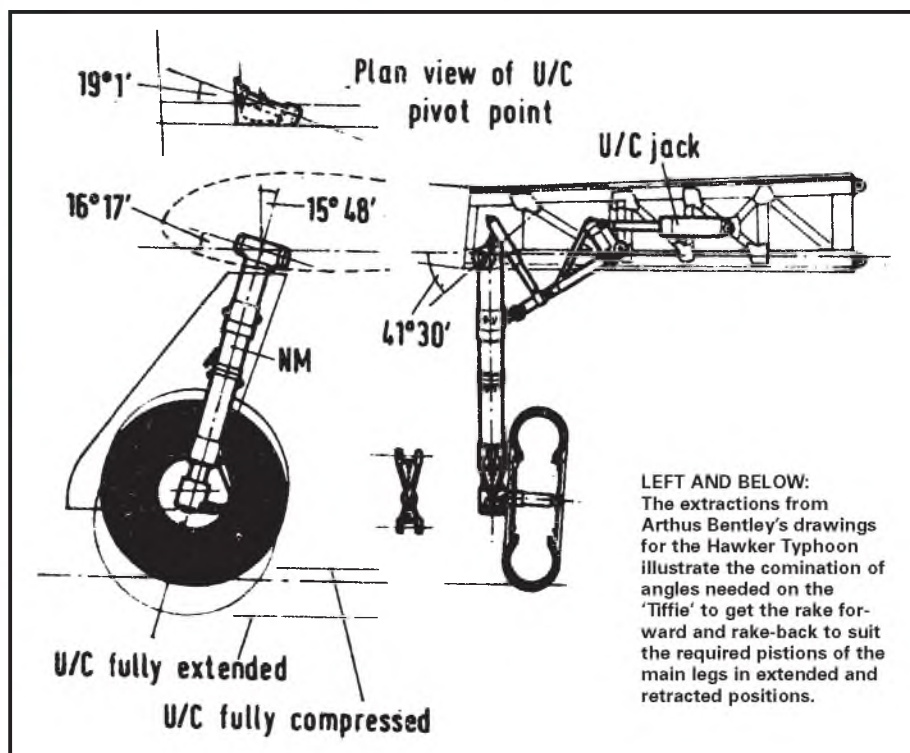
### The Platt method

The retract unit needs to be fitted into the wing at a dual angle, i.e. at an angle to the chord line and to the span line. Let's take an example to explain it.

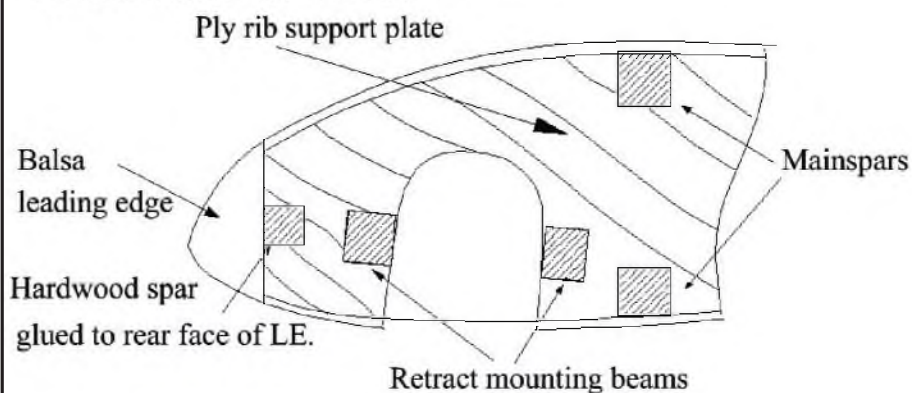
First measure the rake forward of the leg in the down position, relative to a line perpendicular to the chord line. In our example it is eight degrees (**Figure 1**). Next, measure angle of rake back relative to the span line in the up position. Our example is 21 degrees (**Figure 2**).

Now add the two figures together and divide by two.  $8 + 21 = 29$ . Divide by 2 =  $14.5$  degrees. The retract pivot line must now be mounted within the wing at  $14.5$  degree incidence and  $14.5$  degrees 'toe in'. Mounting the pivot line at this dual angle results in a close representation of the real thing (**Figures 3 and 4**). Some minor adjustment may still be called for and it should be noted that most retract units fit the leg at 90 degrees to the unit and this may need to be adjusted. Nevertheless, the method does get you very close to the scale set-up.

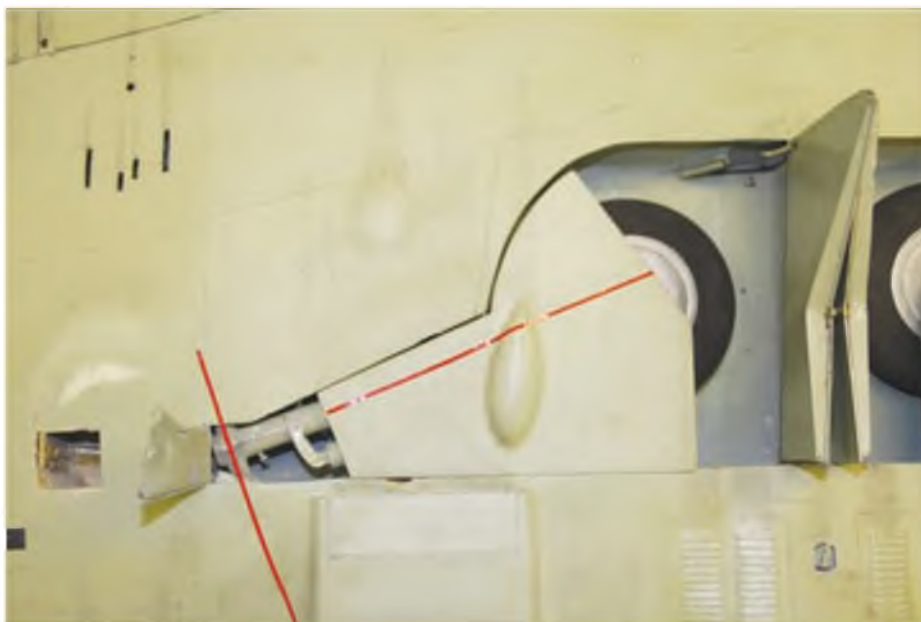
Another problem for scale installation is that a retraction angle of something greater or less than ninety degrees may be called for. Some retract unit manufacturers make provision for some adjustment of this angle within the units. The British manufacturer *Unitracts* does make adjustable retract units and furthermore can supply different pivot blocks to match specific angles that may be required. Sadly, many other manufacturers do not and it may be that some modification to the pivot blocks is called for. At this point any machinist in your club is your best



### TYPICAL MOUNTING SYSTEM





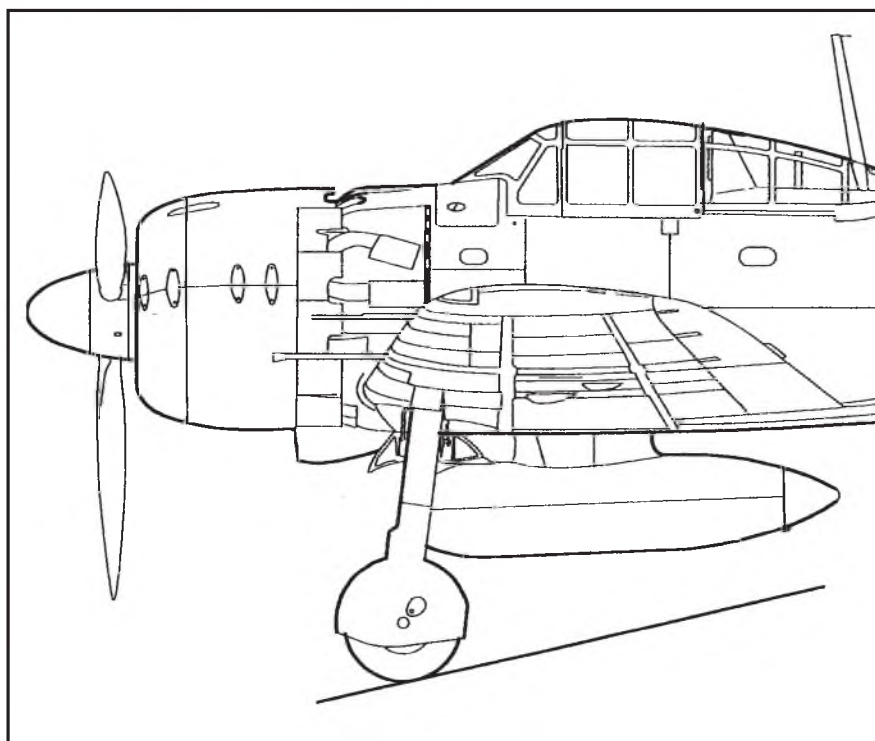


**ABOVE:** In this view, the main undercarriage leg of a Hawker Sea Fury model is seen in the retracted position. The red tape lines demonstrate the rake-back of the main leg under the wheel cover and also the angle of the pivot bearing relative to direct fore/aft (which is straight up/down in the picture).



**LEFT:** The same main leg extended, showing the rake forward. The red tape illustrates the angle of the swivel bearing relative to the datum line of the aerofoil section.

**BELOW:** Not all aircraft with retracting undercarriage involve the extreme combination of geometry angles as illustrated above. Notable among these are some of the Japanese WW2 warbirds like this Mitsubishi Zero, where there's just a little rake forward in the 'down' position and none when 'up'. The Kawasaki Ki 43 Hayabusa is another example.



friend. This is a problem best investigated before the project build gets started since it may be that a slight compromise with the installation angles discussed earlier might provide an acceptable alternative.

### Speed of operation

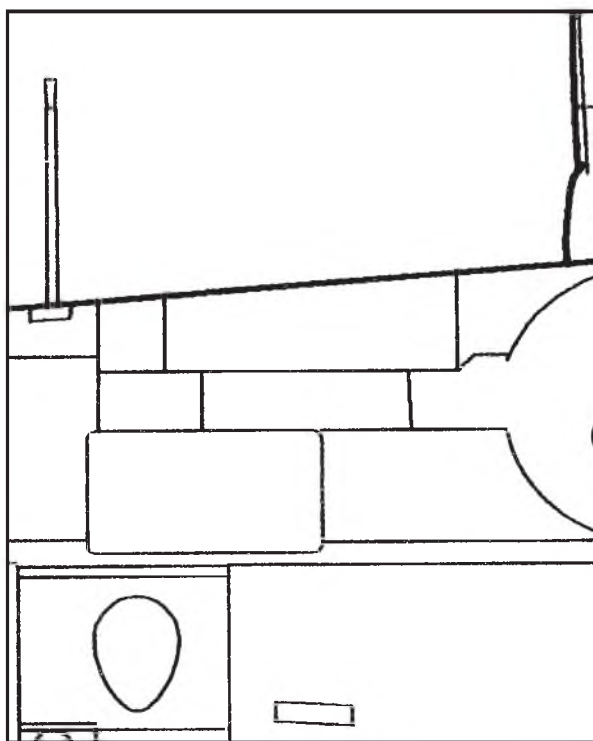
Having sorted out the retract angles, the next problem is that of speed. Left to their own devices air systems will retract the wheels at lightning speed, slamming the wheels into the wells. Most unrealistic! The solution is to slow down the flow of air and thus leg movement.

Interestingly, slowing down the flow rate does not reduce the power, just its application. There are several ways of reducing the flow, probably the easiest being to fit 'in line' reducers which are, essentially, short lengths of metal or plastic pipe with a minute hole to restrict the airflow. These are available commercially. You should be aware, however, that although they do reduce the speed they are not adjustable.

The *Robart* control valve has adjustable air control valves built into it, whilst the larger units from Unitracts have such valves built into the individual retract units. This may influence your choice of units to use, but the point is that there are a variety of solutions available. It is even possible to do your own thing by, for example, using mini clamps or even wheel collets to pinch the pipework in some way.

For the scale purist the next question relates to the fact that, in the full-size world, one leg always seems to retract before the other(s). With pneumatic systems, the solution for this is amazingly simple. So simple that the first time I achieved this in a model I didn't know how I had done it. It took a while for me to realise that the affect had been achieved by simply using longer lengths of pipework on one side. Try it for yourself, it really does work! Again, for the purist, a little research may be called for as to which leg retracts first on your particular aircraft. There is always someone around who knows and will not hesitate to tell you if you have it wrong!

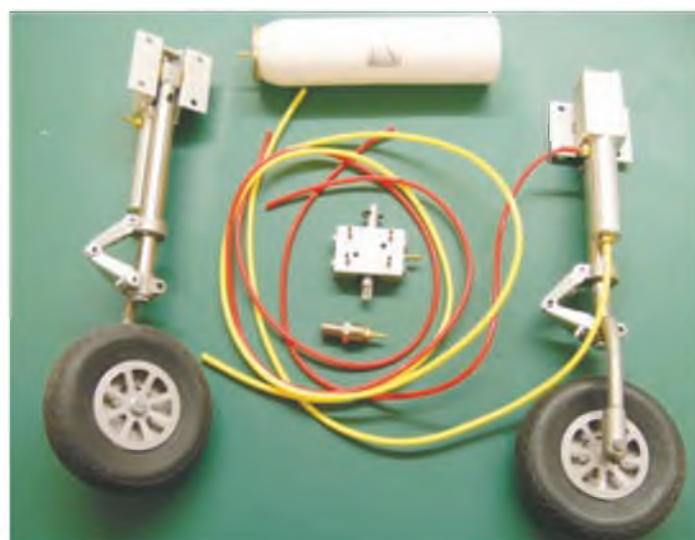
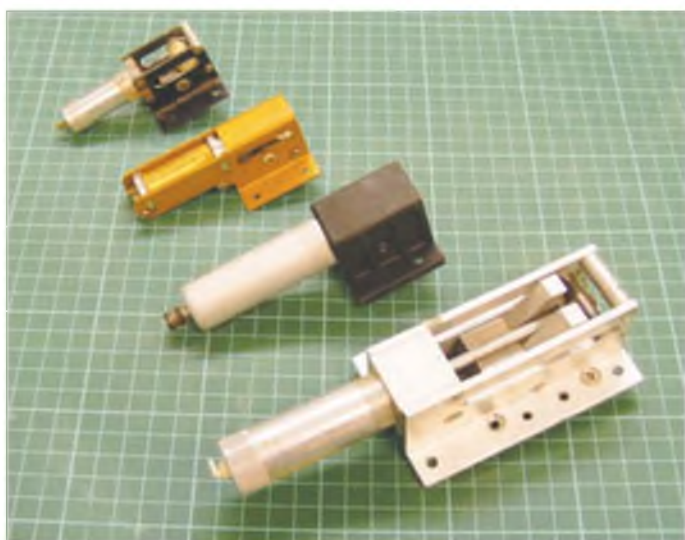
Finally, a plea that I feel will be echoed by all the photographers out there.







**ABOVE:** Not everyone likes the air-driven retracting undercarriage system. The alternative is a servo driven 'mechanical' unit or one in which each individual leg unit has its own gear train and electric motor. One such is the e-retract system, based on the Robart mechanical unit. See their advert on page 5 of this issue.



Whatever retract system you fit, please do not forget to complete the job by dressing up the legs themselves with a few scale bits and bobs and, finally, the addition of undercarriage doors as appropriate. These latter need not be overly detailed because mud, dirt and exhaust muck soon build up a nice patina of realism. However, without the doors on, it is very difficult to get a good ground photo of the model.

For simplicity and reliability, the doors can be made to fit OVER the wheel bay in the wing rather than into it. This will be

unnoticeable in flight and avoids the problem of the doors jamming in the wells after a bit of 'landing stress' has moved things just enough to lose that beautiful flush-fitted arrangement that took so long to arrange.

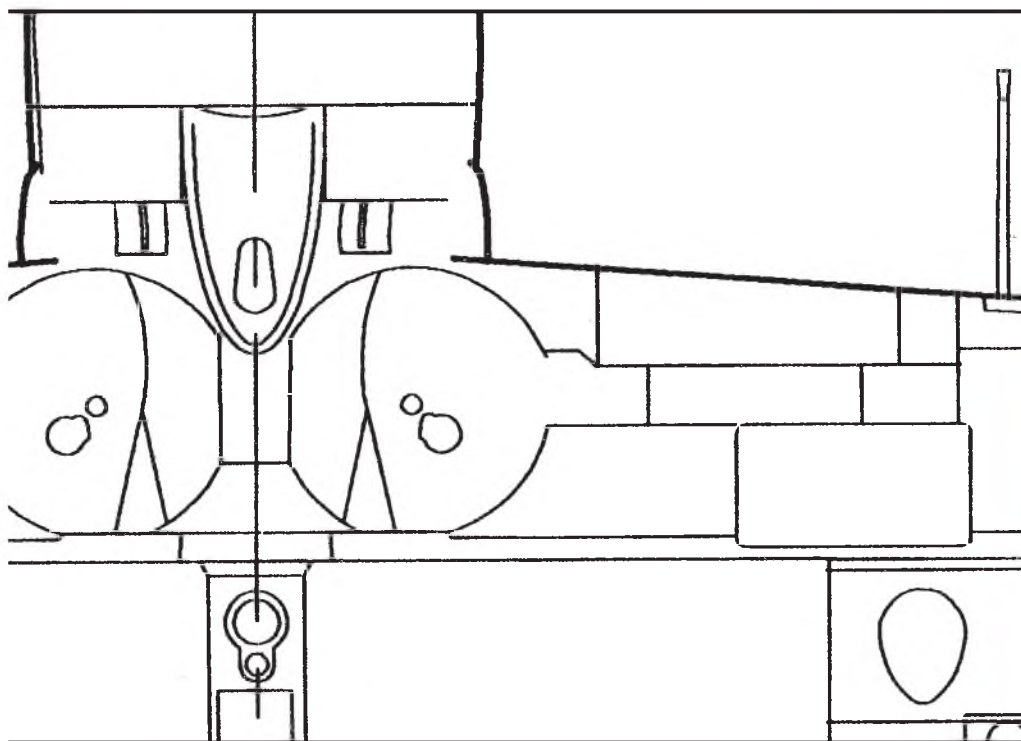
Oh, and before I forget, please be aware that aircraft tyres are not usually shiny. A quick rub down with a piece of wet-and-dry will transform the realism of the whole undercarriage for your next photo session.

Like I said, the purists might have needed to look away!

**ABOVE LEFT:** Some examples of air-driven retract units in varying sizes. Power depends on the diameter of the cylinder and thus the area of the face of the drive piston inside the cylinder.

**ABOVE RIGHT:** A complete air-driven retract system for a scale model. The critical issue involves the seals throughout - the O-rings in the switching valve (centre of pic) and in the drive cylinders, plus the tubes. **BELOW:** Air line couplings must also positively seal the system.

**BOTTOM:** Air tanks vary with model size.





# PLANS 'N PA

Be ready to start building as soon as you unfold the plans with these

**WE CAN ARRANGE** a cut parts set for **ANY** model in the FSM Plans about to embark on a new scale modelling project from our plans or start on the building process, just call to enquire and we'll do the



## De HAVILLAND DH 82a TIGER MOTH

Plan price **£26.50** Plan No.051

Component Pack **£115.00**

An 80 inch (2032mm.) wingspan, 1:4.33 scale model for 1.20 cu.in. motors and four function radio control systems. No moulded cowl required - all wood construction. Three sheet plan.



## De HAVILLAND DH60 MOTH

Plan price **£19.50** Plan No.054

Component Pack **£115.00**

An 80 inch (2032 mm) wingspan, 1:4.33 scale replica for .90 - 1.20 cu. in. motors and four function radio control systems. Two sheet plan.

## BUCKER BU180 STUDENT

Plan price **£26.50** Plan No.015

Component Pack **£120.00**

A big, but manageable scale model of the German pre-W.W.2 trainer, designed for .90-1.20 four stroke motors and four function radio systems. Four sheet plan shows conventional wooden structure for airframe, plus alternative foam core wing.



**NEW**

## BOEING PT-13 STEARMAN

Plan price **£19.50** Plan No.243

Component Pack **£99.50**

A 58" (1473mm) wingspan replica of the famous biplane radical engine trainer aircraft of the WW2 era. Designed for 700 size electric motors, but with option of i.c. engine power using a .52-.60 four stroke engine, with modifications shown on a separate plan sheet. (Ready-cut wing ribs and fuselage formers available - see below) Three sheet plan



Take the tedium out of building our Boeing PT-13 with this set of precision laser-cut wing ribs and fuselage formers. It takes the hard graft out of preparation, while leaving all the fun of the building!

## GLOSTER GLADIATOR

Plan price **£17.50** Plan No.078

Component Pack **£135.00**

The RAF's last fighter biplane, a classic of it's era, modelled to 1/7th scale with a wingspan of 54.5 (1384mm). Suits .46-.60 motors.



**NEW**

## WESTLAND LYSANDER MK.3

Plan price **£19.50** Plan No.109

Component Pack **£135.00**

Superb true scale construction replica on the WW2 Army Co-op and Special Operations aircraft in 1.75": 1ft scale. 87.5" (2223mm) wingspan model suits .50-.60 size two stroke motors and requires minimum 4-function radio control. Two sheet plan.



**NEW**

## DE HAVILLAND CANADA DHC-1 CHIPMUNK

Plan price **£27.50** (Either scale)

Component Pack **£155.00** (Either scale)

Dave Womersley's 1/4 scale, 103" (2616mm) wingspan Nationals scale winner, for 1.8 cu.in. four stroke engines. The plans are also available in 1/5th scale; please specify which scale is required. Please note: no proving prototype of the 1/5th scale model has been built, the plans are simply a scale-down from 1/4 scale.



## PIPER SUPER CUB

Plan price **£16.50** Plan No.146

Component Pack **£95.00**

G/F Cowl price **£17.50**

A great first-time scale model for novices and sport fliers who want real scale accuracy. 79 ins span 1:5.33 scale model suits a range of engines .40-.60. Two sheet plan. Glass fibre cowl available.



**NEW**

## D.H. 103 HORNET

Plan price **£22.50** Plan No.052

Component Pack **£130.00**

80" (mm) wingspan sport-scale replica of the hottest production piston engine fighter ever. Suits engines .40-.53. Original retracting undercarriage unit included with the plans.



## FAIREY GANNET A.S.I

Plan price **£19.50** Plan No.065

Component Pack **£130.00**

A 1/8th scale 81" (2057mm) span model of the Naval search aircraft. Flaps and retracts shown, plus bomb doors, extending radome and tail hook, and optional folding wings. Minimum 4 function R/C (Two sheet plan).



## SOPWITH CAMEL

Plan price **£14.50** Plan No.188

Component Pack **£79.50**

1/6th scale replica of the famous RFC WW1 fighter biplane, for .24-.40 size motors and four function R/C. 56" (1422mm) wing span.



**NEW**



# PARTS

These laser-cut parts sets

Plans Service range. SO if you are in this range and want to get a head-start on the rest (tel: 01494 433453).

## WHAT DO THE CUT-PARTS SETS CONTAIN?

All the components, in balsa and ply that you would otherwise have to trace off the plan onto the wood and then tediously cut out prior to commencing building! Basic strip and sheet wood not included. Be ready to start building as soon as you unfold the plans!

### CURTISS JN-4 JENNY

Plan price **£19.50** Plan No.038

Component Pack **£125.00**

81 in. wingspan 1:6.4 scale replica of the classic American biplane. Easy to fly with all the character of the full size. Suits .52 - .75 motors and 4 function radio.



### TIPSY JUNIOR

Plan price **£19.50** Plan No.286

Component Pack

**£95.00**

A 1:3.44 scale, 79" (2006mm) wingspan replica of the late 1940s Belgian light aircraft, designed to suit. 90-1.20 cu.in engines. Designed by Philip S.Kent, the model features all built-up balsa/ply construction throughout and makes an excellent entry into R/C scale modelling. Rudder, elevator, aileron and throttle controls.

**NEW**



### PERCIVAL PROCTOR

Plan price **£16.50** Plan No.152

Component Pack

**£115.00**

A scale model of the light communications aircraft. Plans available in 1/7th scale, with a wingspan of 65" (1651mm). Engine size .50-.60 cu.in.



**NEW**

### AERONCA C3

Plan price **£19.50** Plan No.293

Component Pack

**£95.00**

A quarter-scale" wing span model of the famous 1930s American single seat light aircraft, designed by Philip S. Kent to competition standard. Suits four function R/C and 1 to 1.20cu.in four stroke engines. Two sheet plan set.

**NEW**



### CHILTON DW1A

Plan price **£22.50** Plan No.303

Component Pack **£95.00**

1930s sporting monoplanes, the tiny DW1a makes a truly attractive subject for scale modelling. This 1/3rd scale version comes from the expert design board of Phil S.Kent. 96" (2438mm) wing span, features flaps as per the full size, suits 1.5 to 1.8 cu.in. four stroke engines, and five function R/C systems. Two sheet plan

**NEW**



### SOPWITH PUP

Plan price **£16.50** G/F Cowl price **£17.50** Plan No.177

Component Pack **£135.00**

Superb, true-to-scale 1/5th scale replica, features accurate outlines and rib-for-rib reproduction of the full size wing structure. 63 ins. (1600mm) span model is of manageable size for transport and offers realistic flight performance. For .60 size motors and 4 function radio. Glass fibre engine cowl available.



### FOKKER D.VII

Plan price (either scale) **£26.50**

1/4 Plan No.241, 1/5 Plan No.242

Component Pack 1/4 **£125.00**

Component Pack 1/5 **£120.00**

1/4 scale spans 82.5" (2095mm) for 30cc (1.8 cu.in.) two stroke engines. 1/5th scale spans 65.7/8" (1673mm) and suits 15 cc (.90 cu.in.) four stroke engines. BE SURE TO QUOTE SCALE REQUIRED WHEN ORDERING!



### BRISTOL F2B 'BRISFIT'

Plan price **£24.50** 1/4 Plan No.021, 1/5 Plan No. 023

Component Pack **£135.00** (either scale)

Accurate, 1/4 scale replica of the famous WW2 British two-seat fighter. 117.75" (2991mm) span model requires 25-30cc two-stroke power. Model construction closely follows the structure of the full size. Three sheet plan set.



### HAWKER FURY

Plan price **£17.50** Plan No.091

Component Pack **£125.00**

A 1/6th scale replica of the RAF's most elegant 1930s biplane fighter. 60" (1524mm) wing span model requires four function R/C gear and .60 cu.in. motor.



### PIPER SUPER CRUISER

Plan price **£16.50** G/F Cowl price **£17.50**

Plan No.150

Component Pack **£95.00**

A 1/5th true scale 84" (2134mm) wingspan replica of the Piper PA-12 light aircraft, designed for four function radio control systems and .90 cu. in. size motors.



### PFALZ D.XII

Plan price **£27.50** Plan No.313

Component Pack **£175.00**

1/4 scale WW1 German fighter biplane for 1.80 - 2.00 cu. in engines



## P&P CHARGES FOR PLANS

Total Order Value	UK	Europe	W/Wide
Up to £10.00	£2.50	£2.95	£5.75
£10.01-£20.00	£5.00	£5.95	£9.00
£20.01-£50.00	£7.00	£8.50	£16.50

## CARRIAGE CHARGES FOR LASER CUT COMPONENT SETS

UK Charge: £9.50

Overseas: Freight rates vary widely, please enquire at time of ordering

**MODEL ACTIVITY PRESS LTD**, Unit 5 Chiltern Business Centre,  
63-65 Woodside Rd., Amersham, Bucks, HP6 6AA.

Tel: 01494 433453 Fax: 01494 433468 email: [jackie@modelactivitypress.com](mailto:jackie@modelactivitypress.com)



## MASTER MODELS *by Simon Delaney*

# PT-19

Simon Delaney gets close and personal to Eduardo Esteves' stunning 1:3.6 scale, 118" span Fairchild PT-19

I met Eduardo Esteves and his wife Ann at Top Gun several years ago. They are charming and friendly people whose company will brighten even a sunny day in Florida! They are huge scale enthusiasts and compete with that ideal

mix of focus and fun. They have campaigned a few models - always large and spectacular - including a 1:3 scale piper L-4 which had a wingspan of 3.65 metres! These models are built by their team member and good friend Octávio Losito de

Paula. Always looking to improve on their previous performance, in 2008 and 2009 they entered the competition with a 1:3.6 scale PT-19 resplendent in blue and yellow US Army Air Corps training colours. Originally, it was not built as a competition







**ABOVE LEFT:** Octavia (left) and Eduardo pose with the PT-19 on Top Gun's Lakeland Airport runway. This gives you a good idea of the size of the model.



**ABOVE RIGHT:** The PT-19 sits on the runway in perfect conditions for another training flight.

model but as a weekend flyer so, when Eduardo decided to enter Top Gun, the model had to go on a five-month serious facelift to improve the final shape and add more details. The model already had a scale outline.

### Construction

The idea was to have a light but strong

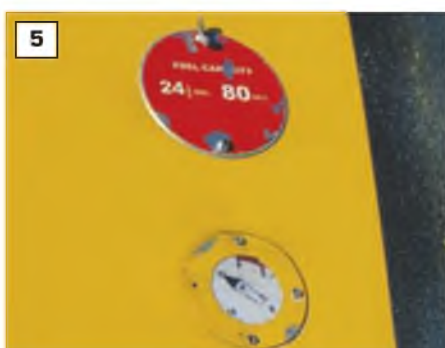
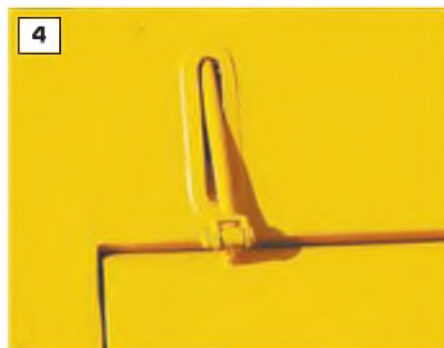
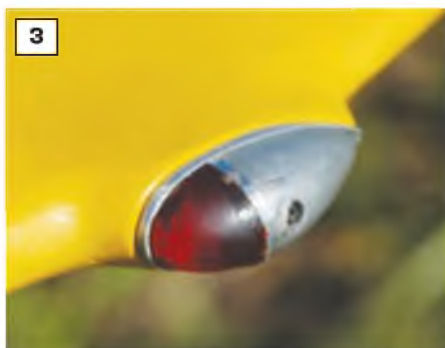
structure, which is of course what every scale modeller strives for. This model, although large, is no different.

The fuselage is made from four 1/4" square strips of Freijo. This is a Brazilian bass wood, hard but flexible. This was used in conjunction with balsa vertical components. Balsa stringers were used over the box section. The turtle deck is balsa with a

scale baggage compartment. This carries a scale crank for starting the engine. Fibreglass moulds were made for the engine cowling as well as the wing and tail fairings. These are important to get the 'feel' of the full-size. *Sig Koverall* was used as fabric with several coats of dope, in the old-fashioned way. Engine bearers were made with brazed 1/4" automobile steel







**1:** The pilot figure is modelled on Frank Tiano, Top Gun's organiser. It didn't get any more scale points, but you can't knock Eduardo for trying!  
**2:** Flying jacket is a work of art! The rear view mirror makes a neat addition. **3:** Wing tip navigation light was made from wood with a piece of red Perspex sanded to the correct shape. **4:** Working trim tab actuator arrangement on the elevator. **5:** Wing-mounted fuel tank gauge and filler provide a good opportunity for some neat detail. **6:** Just a small amount of wear is shown on the wing, as per the documentation, as this example of well cared for. **7:** Serrated edge to the fabric strengthening on the ailerons. **8:** The split trailing edge flaps have the internal structure built into them. Eduardo tells me they are extremely effective. **9:** Stone chips from them runway are faithfully reproduced from study of the full-size aeroplane. **10:** A close-up look at the flap shows even the rivet detail has been added inside! **11:** Leading edge mounted pitot tube is made from aluminium tube and wire. These little details are critical for a competition model.

brake lines to give a scale appearance when the cowling is removed. Not only is it strong, but very light too.

Conventional balsa structure was used to produce the tail feathers, with a ply centre section reinforced rear spar, with all surfaces covered with 3/32" balsa sheet, except the rudder. All parts are detachable for ease of transportation and maintenance. The open frame rudder is complemented by an 1/8" steel tubing trailing edge glued to the ribs, giving a scale appearance to the assembly. The elevators feature a hardwood trailing edge, not tubing. The elevator trim tabs 'work' as they go up and down.

The wings are very light, and split in the centre with a 1/2" ply joiner. They are fixed to the fuselage with four 1/4" Allen screws. Spars are four 1/4" strips of Freijo to keep things in place when building, with 3/16" vertical grain webs between 3/16" balsa ribs. The ribs close to the landing gear were reinforced with 1/16" ply and the gear anchored inside wings in a 1/8" ply box







**12:** Modern instruments are selected for the model as it's based on an example currently flying in California. **13:** This is part of the internal structure, which had to be fitted in after the model was built! **14:** Aluminium seat and harness detail. **15:** Even the cockpit fire extinguisher is present! **16:** Complicated tubing work just behind the seat is fully replicated. Notice the Rx switch just in view. **17:** The pilot's hand on the throttle. I'm not kidding! **18:** A luggage locker was de rigeur on aircraft in the 1930s. Fairchild's primary trainer was no different. **19:** Metalwork and woodwork meet for the inside of the luggage compartment hatch. The starting handle has been removed in this shot.

between leading edge and the Freijo main strips, with a glued metal tube inserted to receive main legs. The strength of the assembly is achieved through the outer 3/32" skin. *Sig Koverall* and dope was

applied again, like the fuselage. Flaps are scale but not so the ailerons. This is because it would have been too much trouble to remove them during the 'scale up' period.

### Detailing

The dummy internal structure was fitted after the aeroplane was already finished and flying to bring it up to competition







20



21



22



23



24



25

**20:** The landing leg features a working oleo strut and dummy brake line, as well as data plates and locking wires. **21:** Close-up of the data plate on the landing leg. **22:** Nicely detailed and weathered venturi. Original would have been made of brass, hence the colour. **23:** Lovely bit of detail on the prop hub adds hugely to the scale effect when viewed from the nose. **24:** The starting handle is in place located through the cowling. Awesome! **25:** The ZDZ 60's exhaust exits just next to the scale one. Unless you view the model from this angle, you can't see it. **26:** Sharply defined numbers on the cowling are set off nicely on the blue. The whole cowl is a fibreglass moulding.



26



level, as mentioned earlier. This posed several problems for Octávio, as you can imagine! The metal structure needed to be replicated - it is visible through the large open cockpit from every angle. On top of this there were instrument panels to be made and installed, as well as all the fine details, such as seats, placards, accelerator quadrants, etc.

The landing gear was designed to collapse in a disastrous 'landing' instead of destroying the inside of the wings, which is much harder to repair. They are fixed to the tube in the wings with one 1/8" Allen screw. Nice and easy to disassemble for maintenance, too. A fibreglass fairing conceals the unit to a scale-like shape. The full-size has an aluminium casting to support the legs. External details complete the assembly.

There is lots of details on the lower surface of the wings, as well as scale damage to the surface caused by stones on the runway! The oleo legs were designed with dampers with a long stroke action and soft springs. The weight of the model brings the shocks to a half of their full travel. The tail wheel is sprung, with a leather offcut used for the boot, and of course it's steerable. The whole model was painted with the traditional regular blue and yellow automotive colours. There was no varnish applied.

A 60cc ZDZ engine was fitted and it has a special feature. It has an additional compression ring to improve consumption and power but even without this improvement the engine has lots of power for the scale performance of this model.

This is the third and last model of three PT-19s built. All three are still flying happily; one of them received a ZDZ 80cc, but it was really too big for this model.

Having enjoyed watching the model on several occasions, and standing next to Eduardo when he's flying it, I can vouch for the extremely docile flight characteristics. The '19 is fully aerobatic, and just glows in those lovely colours. Although large and detailed, it's basically a simple model to operate, and that's the key to this model. ■





#### Specifications

<b>Scale:</b>	27%
<b>Wingspan:</b>	118"
<b>Length:</b>	93"
<b>Weight:</b>	33.7 pounds
<b>Engine:</b>	ZDZ 60
<b>Prop:</b>	Xoar 24 x 8
<b>Radio:</b>	JR 9303 2.4 MHz

The prototype of this Fairchild PT-19 is based in California, USA.

**27:** With the large cowl removed, we can see the engine installation clearly. **28:** The throttle and choke servos, battery and ignition system are located above the tank bay. Nice short runs for the engine servos. **29:** The tube bearers for the engine allow maximum room for the plumbing behind.





## R/C SCALE ELECTRICS *by Peter Rake*



# The Quiet Zone

As a follow-on from last month, Canadian modeller Frank Jaerschky offers more details of the models in his electric fleet

**W**ell, I really don't know what's gone wrong; it appears that you may have to endure two consecutive columns without my usual waffle! It's a poor old state of affairs, I know, but can't be helped sometimes. Much as I appreciate that the waffle content is what many of you read the column for, just occasionally it has to make way for more mundane stuff, like talking about models.

However, even without my meandering, I still think you'll find it worth sticking with the column this month. You may recall that,





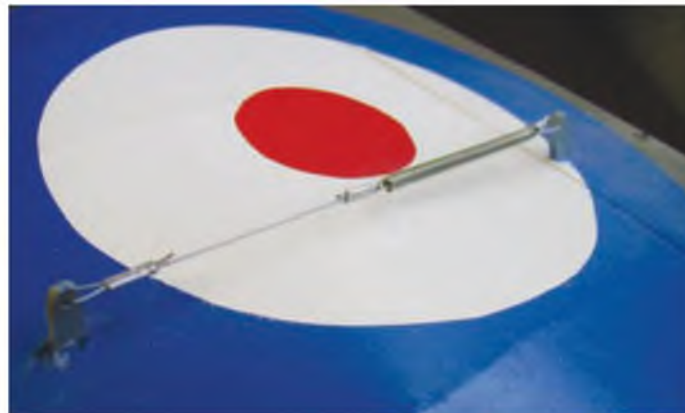
**MAIN IMAGE:** Frank's Twin Otter just about to touch down for a water landing (water-  
ing?) It must be landing because there doesn't  
appear to be enough wake for a takeoff.  
**INSET:** Originally using brushed power, a  
change to brushless and LiPo lightened the  
model and vastly improved performance.

at the end of last month's epistle featuring Frank Jaerschky's fine Gotha IV, I made mention of there being more to come from Frank. Well here it is, so over to Frank.

### Hello again

With the Gotha G.IV article out of the way, Peter asked me if I would like to write a few words about some of my other models. I of course immediately agreed. It now strikes me that Peter has mastered the number one skill of a monthly column editor - get someone else to do the work for you! (Oh, I'm hurt. Unkind, Frank, very unkind. I wonder if I can get others to waffle as much as I do? PR.)

I first began radio-control modelling in 1982 with the typical .40-size trainer. I was immediately hooked, (Isn't it funny how often that happens? Very addictive, this little hobby of ours. PR.) and although



**TOP:** Close-up detail of the aileron setup on Frank's Mike Roach-based DH2.  
**ABOVE:** The DH2 model, an FSM plan article design from a few years ago, was built from a set of laser-cut parts, from Turnkey R/C.

I have had to take extended breaks from modelling due to my Air Force career and children, it is still a passion for me. I do like to fly, but building, especially from scratch, is what I really find the most satisfying.

### De Havilland Canada Twin Otter

After 21 years of glow and gas power, I made my first foray into the world of electrics in 2003 with a scratch-built sport scale De Havilland Canada DHC-6 Twin Otter. The plans were published in the May 2003 issue of *Model Airplane News* and the scale is 1/12th, resulting in a wingspan of 65". Construction is quite light, with an open stick framework fuselage and built up tail surfaces. I originally powered the model with two Speed 600 motors driving 10 x 6 props through 2.3:1 belt drives and eight 3300mAh NiMH cells. Performance was okay, but not spectacular.

After one season of flying, I decided to upgrade to brushless power with a pair of Nippy Black 1812/100 outrunners with APC 9 x 7E props and a 3S 4200mAh LiPo pack. This change alone shaved well over a pound of weight from the model. Now she was a totally different machine, and the model had plenty of power for true Twin Otter STOL performance.

A set of floats was next, and the Twin Otter took to the water like, well, an Otter. I have the mixes on my DX 7 set up so that, for taxiing, left rudder increases power to the right motor and right rudder increases power to the left motor. This differential thrust makes water handling a piece of cake. I just need to remember to flick off the mixes prior to commencing the takeoff run, otherwise bad things could happen if I touch the rudder at high speed!

The model is so well trimmed out that, after alighting on the water and still moving, I can set the throttle to 75% and set the transmitter on the ground. The model will run on the water for 100 feet or so, then gently lift off and fly straight ahead, all without my input. Float flying this model has proven to be real fun. After seven years, this model is likely approaching the 1,000 flight mark, and shows no signs of slowing down.

### Airco DH2

I've always like WW1 models, and the DH2 with its unique configuration caught my eye quite some time ago. But the idea of reaching in amongst the wires and strutter in order to start a vibrating, messy glow motor always shelved the project. Then along came clean electric power, and a nice construction article in FSM on a 39" DH2, and the future was clear. I actually ordered a short kit for the DH2 from Turnkey R/C which included ribs and other bits and pieces, saving a few hours cutting.

I made a few changes from Mike Roach's original design. I used 1/8" carbon fibre tubing for the booms, and also decided to add ailerons. I decided to opt for a scale aileron linkage. The aileron servo sits in the fuselage, and a single cable runs through the leading edge of the lower wing exiting at the bottom and is fastened to the lower aileron. Another cable connects the lower aileron to the





**ABOVE LEFT:** Nice front end detail on the Albatros C.III. **TOP RIGHT:** Looking very effective in its 'Dragodile' scheme (the other side shows a dragon). Stained wood fuselages always look good. **ABOVE RIGHT:** Just to prove the point, the model does a fly-by to reveal the dragon emblem.



top aileron. And then, in a totally scale manner, another cable runs from the top of the upper aileron to a coil spring fastened to a small post on the upper wing. My thought was that for a slow flying model, this should be fine.

And it is! It took some trial and error to find a spring that was just the right tension to allow easy servo movement and also provide enough return force. The springs are tensioned when the ailerons are neutral, so that helps in balancing the forces. In flight the ailerons are very effective, and they have proven very useful for picking up a low wing when on short finals. The rudder and elevator cable routings are also scale, as is the elevator bellcrank arrangement that exits the fuselage sides. Control cables are from Spiderwire brand fishing line. Power comes from yet another Nippy Black 1812/100, but this time with only a 2S 1200mAh pack. Originally I used a 10 x 7 APC electric prop, but last summer I made a four-blade 10 x 6 wooden prop from a pair of 10 x 6 Zingers, and that certainly looks better than the grey plastic two-blader.

I added a fair bit of detail, including a dummy rotary which entirely hides the Nippy. In flight the model is a real sweetheart despite her rather ungainly appear-

ance. It is quite light, and floats along happily at low speeds and remains very manoeuvrable. The model is covered in Silkspan and dope. Rigging is 100% nylon thread. The pilot figure is from Pete's Pilots in the UK.

I am very excited to be hosting Mike Roach this spring as he and Trevor Hewson and his wife cross the pond to attend the Chilliwick event. You can bet that the DH2 will be there, too!

### Fokker D.VII

Well, I can't write an article for Peter and not include at least one of his many fantastic designs! After the DH2, it was time for some Teutonic machinery, and Pete's D.VII free plan caught my eye. My goal was to keep the aeroplane light and as scale as possible, so once again I opted for one aileron servo driving both ailerons with scale cable routings, except that rather than have a closed-loop system, there would only be one cable to the aileron, and the return force would be provided by springs mounted internally in the wing with a cable to the aileron horn. Again, this has proven to work just fine.

The model is covered in Silkspan and dope. One of the problems with D.VIIs is the

likelihood that the dreaded lozenge paint scheme will need to be duplicated. I downloaded a lozenge pattern from the Web and printed it on the paper backing of some clear vinyl map covering material. I made patterns for each colour, carefully cutting out the appropriate polygons with a sharp knife. Then it was a matter of laying the pattern on the wing, airbrushing on the colour, moving the mask, and repeating. In total eight different masks were needed along with eight custom-mixed colours of dope. Time consuming yes, but the end result was worth it. One caution about lozenge camouflage - it works! The model seems to lose its harsh edges and the outlines seem to blend into the background when it is in the air. The markings were also masked and airbrushed. Power is an AXI 2808/24 on a 3S 1500mAh LiPo. The aeroplane flies beautifully light on its wings, like aeroplanes should.

### Albatros C.III

I always thought that the WW1 single-seaters seemed to get all the glory, so thought a two-seater would make a nice change. I particularly liked the Albatros C.III, especially the one with the 'Dragodile' colour scheme. I noticed Aerodrome R/C had a small C.III model, so I contacted Kay Bengtson at Aerodrome R/C and asked if it would be okay to scale up the plans. She went one better and offered to totally design a new C.III in a larger scale, complete with scale airfoil, and I could build the prototype kit! That was an offer that was too good to refuse, so I quickly agreed. Within a few months I had the prototype kit in my hands, and it was a beauty.

The wings have a scale undercamber airfoil, and use 1/8" carbon fibre tubes for spars. Although the plans show a servo mounted in the wing, I chose instead to mount the aileron servos in the fuselage at the lower wing root location, and actuate the ailerons with scale cables. The top and bottom wings stay fastened permanently together, and each pair of wings slide on and off piano wire joiners attached to the cabane struts and brass tube joiners in the fuselage. The servo arm is removed from the servo every time the model is taken



A shot revealing the structure of the Aerodrome RC Fokker Dr.1.



apart - a minor inconvenience well worth bearing for the scale aileron cables.

This model is an absolutely beautiful flying machine. The undercambered airfoil performs beautifully at slow speeds, and long, slow touch-and-goes are a thing to behold. The model spans 57" and has 887 square inches of wing area. Power comes from an AXI 2826/10 on a 3S 4000mAh LiPo for nice long flights. Flying weight is just over 4lb for a 10.8 oz/sq. ft. wing loading.

The wings and tail surfaces are covered with Polyspan and painted with Brodak dope. The fuselage is balsa and stained, then coated with semi-gloss water-based polyurethane. The dragon and crocodile on the fuselage were done by first painting the entire shape using a mask and white paint, then all the black was done by hand. Rigging is nylon thread. All control surfaces are pull-pull, using Spiderwire fishing line. The wheels are built from balsa/ply discs and neoprene foam cord, and are included in the kit. Even though this is billed as a 'Short Kit', Aerodrome kits come with a lot in them. Wheel kits and 95% of the wood you will need. They are good value, I think. *(Having seen, and built examples of Kay's work, I can also confirm that they are very nice kits, too. PR.)*

### Fokker Dr.1

Remaining in the WW1 area, next I give you the AerodromeRC 1:6 scale Fokker Dr.1. This particular model is also a prototype for the AerodromeRC kit designed by Kay Bengtson. It is a very nice model of the famous triplane, with no concessions made to the scale outline; she is 100% scale, with the exception of the airfoil. Kay did a great job with the wings. The leading edge sheeting on all the wings is laser-cut 1/32" ply with the proper saw-tooth pattern. This wing construction looks absolutely fantastic on the completed model.

The centre and top wing hold down method is quite unique. The centre and top wing stay together as one unit. At the rear of the centre wing fairing there is a ply tab that inserts into a former just in front of the cockpit of the fuselage. The front of the wing fairing also has a tab. The cowl is built up from formers and sheeted with ply. The rear cowl former has a slot that fits over the wing tab. The cowl is then bolted to the fire-wall former using socket cap screws, accessed through the two holes in the front face of the cowl. When the model is assem-



A nice job of the awkward to get right streaky olive finish.

bled, there are no external screws or bolts to spoil the appearance of the finished model. Very clever.

Covering on this model is also Polyspan and dope. I achieved the streaky green finish by first spraying an overall coat of sky blue dope. Once that was thoroughly dry, I mixed up a very thin mixture of matt olive drab dope and thinners, and then used a wide brush to quickly apply thin coats until I had achieved the look that I wanted. It's important to make sure the brush is always moved in the same direction. Markings were once again masked and sprayed, with the exception of the fuselage weight placard and aircraft serial number, which are self-stick vinyl from Callie Graphics in the USA. Once the model was complete, a final coat of matt clear dope was sprayed all over. Once again, this is a very complete kit and includes the wheels.

Power comes from an AXI 2826/12 and a 3S 5000mAh battery. Being a triplane, some nose weight was necessary so I decided I might as well add LiPo rather than lead! Vital statistics are wingspan 46.7", wing area 737 sq. in., flying weight 72oz for a wing loading of 14.26 oz/sq. ft. I was a bit nervous about flying the tripe, as I had a

quarter-scale petrol-powered beast that was an absolute swine in the air and on the ground. I needn't have worried; this is a very nice-flying model. All control surfaces are very responsive. Ground looping on takeoff doesn't seem to be a problem as long as you get on the rudder early, as it is very effective.

In the air it is very manoeuvrable, as a triplane should be. Landings are not too bad either, as long as I always land directly into the wind, and I don't try and three-point the landing. Wheel landings are best. I think in a three-point attitude the middle wing blanks the elevator, causing a loss of effectiveness. But touch the wheels first, and then she sets down very nicely indeed. The model is certainly a crowd pleaser, as Dr.1s always seem to be.

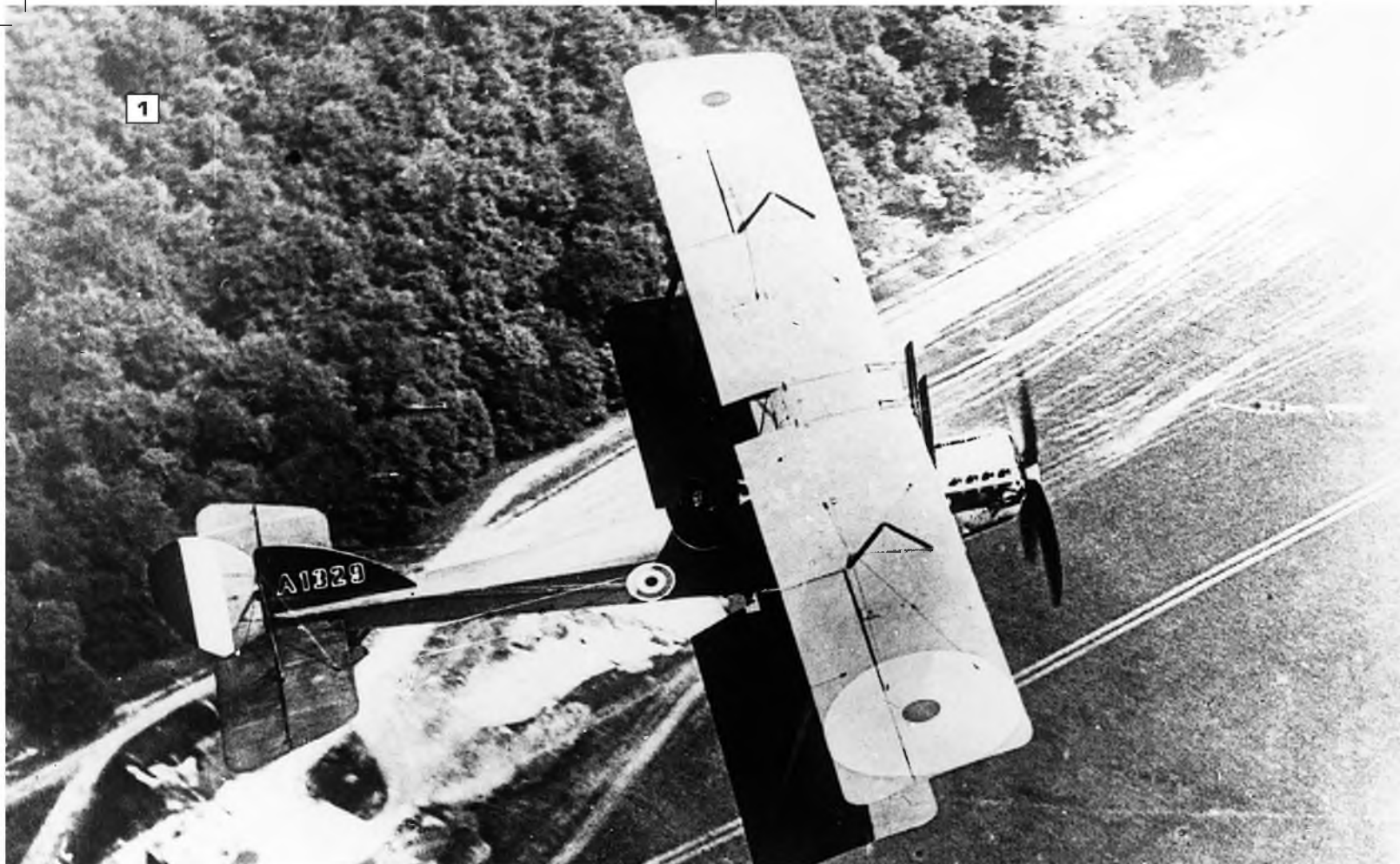
Frank Jaerschky

We'll leave Frank there, since I've run out of room, as usual. However, there is definitely more to come from him at a future date - just how far in the future depends on how quickly he writes it for me. Should you also fancy being co-opted into forced labour, I may be contacted at [PETERRAKE@aol.com](mailto:PETERRAKE@aol.com) ■

**BELOW LEFT:** Another FSM plan-built model, the author's Fokker D.VII design. Not content with painting lozenge wings, Frank insisted on a chequer tail, too. **BELOW RIGHT:** Panel detail, radiator grille and louvres all add to the scale effect. **BOTTOM RIGHT:** The cat's cradle of rigging and wooden prop on Frank's DH2. Prop is made from two commercial items.







## TYPE HISTORY *with photos from Harry Woodman*

# B.E.2e

**T**he history of the B.E.2e really begins in 1911 when Geoffrey de Havilland and F. M. Green designed the B.E. I, a two-seater tractor biplane powered by a 60 h.p. Wolseley engine. Later the B.E.I was much improved and engined by a 70 h.p. Renault and known as the B.E.2. In this form, its capabilities were quickly recognised and many notable flights were made in the two years before the Great War.

Subsequent developments, the provision of ailerons on staggered mainplanes in place of the old warping wings, a fixed fin, and a redesigned fuselage of improved aerodynamic form gave the Royal Flying Corps an aeroplane which became immortal (or maybe notorious) as the B.E.2c, the standard reconnaissance machine in the first two years of

hostilities on the Western Front.

Further modifications were the substitution of a Vee undercarriage in place of the twin skid type and the installation of the 90 h.p. R.A.F. la engine in place of the 70 h.p. Renault.

The B.E.2e, in principle an improved B.E.2c, was produced for the Battle of the Somme, 1916, but only one machine was in the field in time to participate in the opening stages of the battle. This aeroplane was on the strength of No. 21 Squadron at Fienwillers. Thereafter B.E.2es were used in increasing numbers until the close of hostilities.

More B.E.2es were built than any other variant in the B.E. series. From production totalling 1,320 aircraft (plus some B.E.2c and 2d conversions), B.E.2es were issued to 11



Home Defence squadrons of the R.F.C. (as well as many units on the Western Front and elsewhere). Like the B.E.2c, the 2e often carried a single Lewis gun in the front cockpit, for which assorted mountings were available. An alternative armament tried by some of the Home Defence aircraft for anti-Zeppelin

**1** BE2e serial A1329, one of a group built by Napier & Miller Ltd. of Old Kilpatrick, the entire group was transferred to the RNAS. **2** Among the several tasks allocated to the BE2e was that of Home Defence. The aircraft could hardly match a Zeppelin's speed, rate of climb or altitude. This sample carries swivelling brackets for two Lewis guns, two carriers for 100/112lb bombs and a pair of rocket tubes mounted on the interplane struts. **3** An unidentified BE2e fitted with a single Lewis on a Strange mounting. In service many BE2es flew without the underwing gravity fuel tank. **4** One of the most unlikely aircraft to be used as a night bomber some BE2es were employed in this capacity in France. No. 5844 was built by Bristol and after several makeovers, is seen here with No. 100 Squadron. Painted black or dark grey it carries a single 230lb RFC pattern bomb under the fuselage, a pair of Michelin flares to the rear and another pair of T.W.R. flares under the wings. To complete the set, Holt flare brackets are fitted as well as navigation lamps to wingtips and tail. **5** An unfortunate landing for a pair of training BE2es most probably belonging to one of the Schools of Aerial Fighting in 1918. Note the aluminium skinning fitted to the centre section to provide a firm base for the Lewis gun mounts (or fire hazard) and the shortened exhaust pipes. **6** One of the problems with the entire BE2 series was the difficulty of defending itself due to the arrangement of cockpits. Everything was done by the pilot in the rear seat whilst his gunner had little room for manoeuvre. In this case the single Lewis is mounted on a Strange mount and demonstrates the only area in which he had a moderately unhindered field of fire. **7** A BE2e of No. 47 Squadron in Macedonia illustrates the cluttered assembly of the equipment carried on an operational BE2e. Apart from the top Lewis on the Strange mounting, another Lewis is fixed to the fuselage arranged to fire at an angle to clear the propeller. Within reach of the pilot are two bomb release levers and a framework to hold a camera. **8** After the war vast amounts of aviation stores and aircraft were scrapped or sold. Among the miscellany of aircraft were a few BE2es which went to Russia. In this alien environment was this BE2e photographed with its well insulated crew at the Red Air Fleet base at Sarapul in 1920.





patrols comprised a quartet of Le Prieur rockets, the launching rails for which were attached to the interplane struts, two each side and angled upwards. Little success was achieved by the B.E.2e as a fighter, its performance being inadequate for aerial combat by 1916, and heavy losses were suffered by the R.F.C. squadrons flying the type in France. Retroactively, the designations B.E.2f and B.E.2g were applied to distinguish, respectively, between those B.E.2es converted from 2cs and those built as 2es or converted from 2ds, as their fuel systems and capacities were significantly different.

In design, the B.E.2e differed from the B.E.2c in the construction of the mainplanes. The '2c had two-bay wings, while those of the 2e were of the single bay type. Upper wings were of much greater span than the lower and braced by a system of kingposts and wires. The higher aspect ratio and simpler layout of the new mainplanes bestowed only a meagre increase in performance, while the huge extensions of the upper wings were not suited to aerobatics and were prone to col-

lapse if the aeroplane was held at the top of a loop. Many rumours circulated about the B.E.2e's extensions. Unless properly rigged they would flap alarmingly and it was said that if they did so in earnest, the aeroplane became an ornithopter, invested with miraculous lifting powers!

Attempts were made to produce a single-seater scout using a standard B.E.2e airframe. The 12-cylinder 150 h.p. R.A.F. 4A was fitted in place of the 90 h.p. eight-cylinder engine and a fixed synchronised Vickers gun was mounted on the port side of the fuselage. This version was known as the B.E.12Ae. Even in this form the aeroplane was far too unwieldy to prove of any real use as a fighting machine and it was quickly relegated to bombing.

Apart from action in France, the B.E.2e saw service in the Middle East and in India. During the attack on Jerusalem in General Allenby's Palestinian campaign, the aerodrome of No. 14 Squadron became waterlogged, but by manhandling the B.E.2es to the top of a small steep hill, it was found possible to take off to

bomb the demoralised Turks. B.E.2es were also employed on Home Defence duties, at the training schools and a number were used by the Royal Naval Air Service. At least one Zeppelin was intercepted by a B.E.2e.

Construction of the B.E.2e was quite orthodox and consisted of mainplanes of two spruce mainspars and ribs braced with wire. The fuselage was a rectangular wooden structure with four main wooden longerons and intermediate struts, wire braced with a semicircular turtle deck, stringered aft of the pilot's cockpit and ply covered forward. Main fuel tanks were in the fuselage and a gravity feed reserve tank was provided under the port upper wing. The engine was carried on tubular steel bearers which were extensions of the upper longerons. The undercarriage struts and centre section struts were also of tubular steel, faired with wood bound with fabric tape. The empennage was wood, wire braced, and the ash tail skid was mounted on a tubular steel pylon. Shock absorption of main landing wheels and tailskid was with elastic cord. ■

#### Dimensions

**Wing span:** 40 ft. 8 in.  
**Length:** 27 ft. 3 in.  
**Height:** 12 ft.  
**Wing chord:** 5 ft. 6 in.  
**Wing area:** 360 sq. ft.

#### Performance

82 m.p.h. at 6,500 ft.  
 75 m.p.h. at 10,000 ft.  
 Climb rates: 24 minutes to 6,500 ft;  
 53 minutes to 10,000 ft.  
**Service ceiling:** 11,000 ft.  
**Endurance:** 3 1/4 hours.

#### Weights:

Gross 2,100 lb. Empty 1,431 lb. Fuel and oil 239 lb.  
 Military load and crew 430 lb.

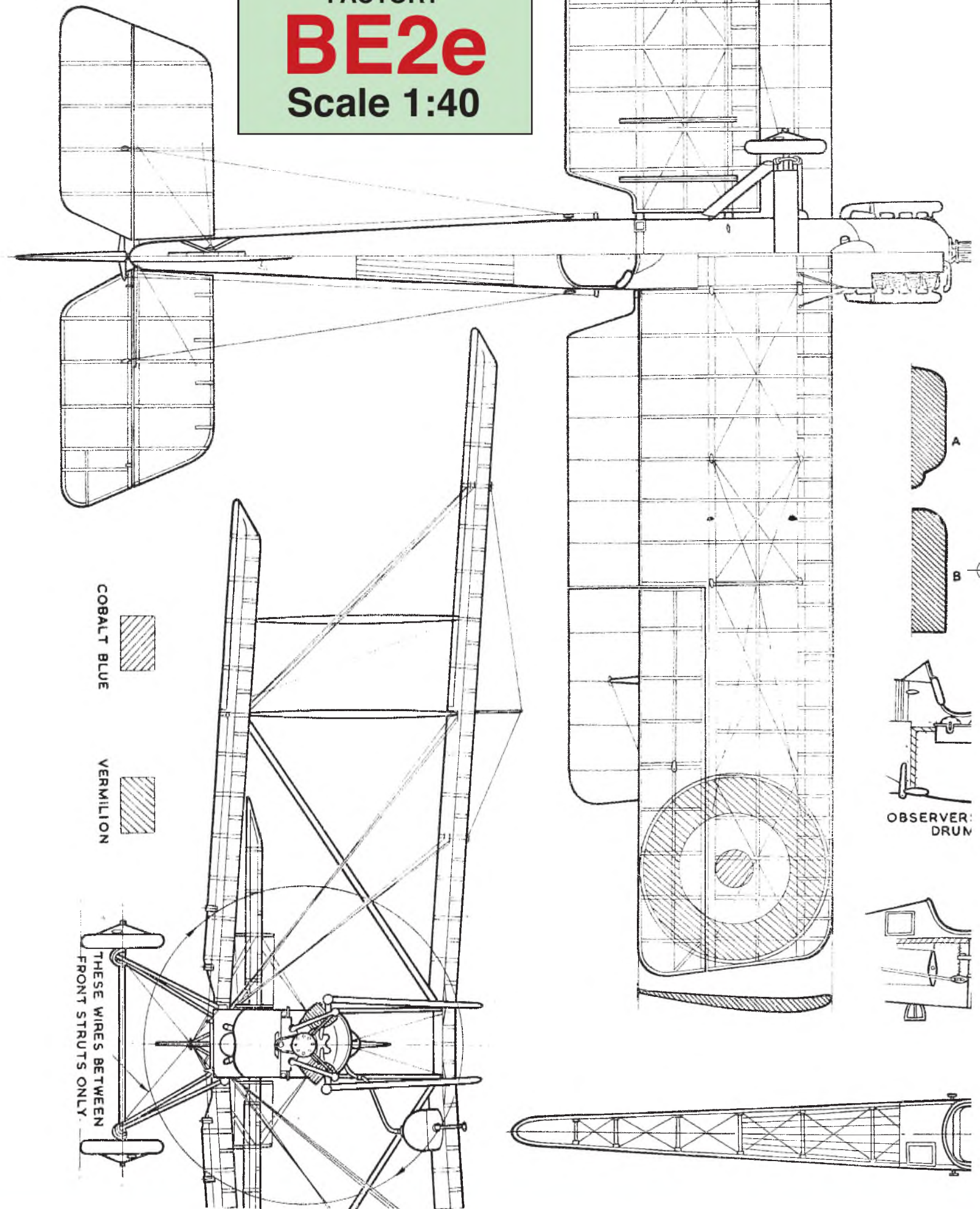




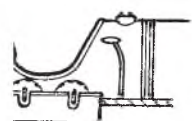
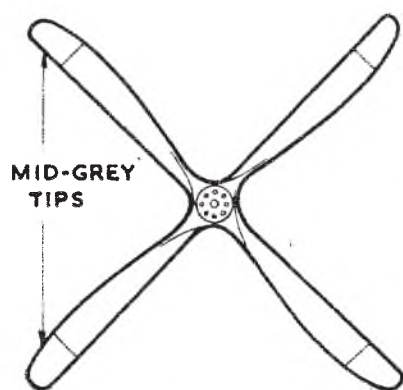
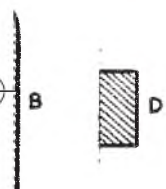
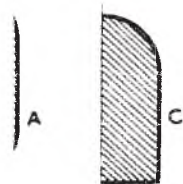
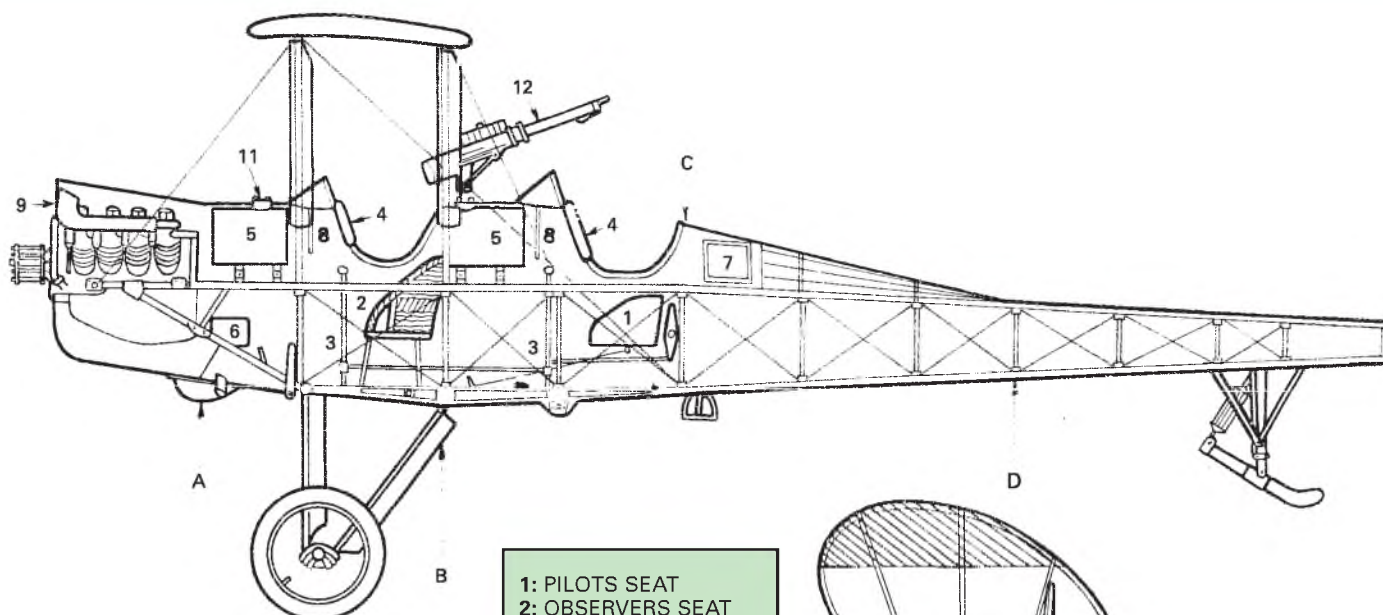
ROYAL AIRCRAFT  
FACTORY

**BE2e**

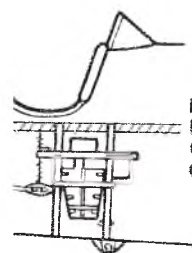
Scale 1:40



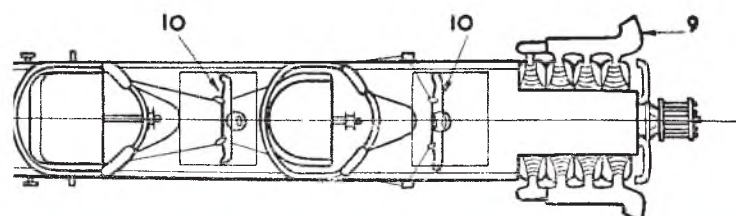




OVERS AMMUNITION  
RUM RACK



CAMERA -  
MOUNTED ON  
RIGHT SIDE  
OF PILOTS  
COCKPIT



- 1: PILOTS SEAT
- 2: OBSERVERS SEAT
- 3: CONTROL COLUMNS
- 4: LEATHER PADDING
- 5: PETROL TANKS
- 6: OIL TANK
- 7: LOCKER
- 8: INSTRUMENT PANELS
- 9: ALTERNATIVE EXHAUST MAINFOLD
- 10: RUDDER BARS
- 11: FILLER CAP
- 12: LEWIS GUN BETWEEN REAR C/S STRUTS

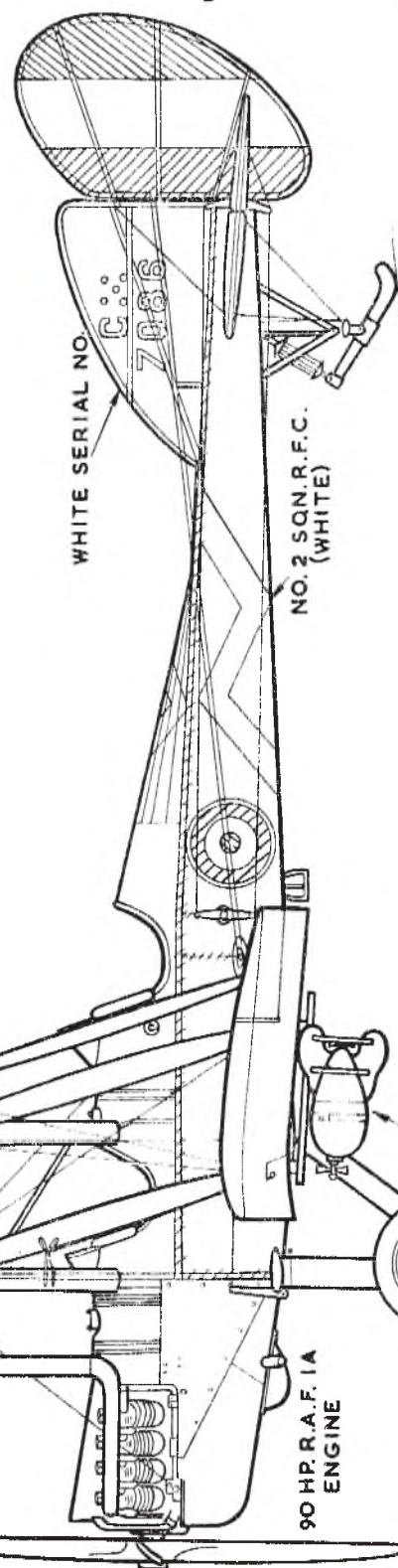
**COLOUR**  
WING AND TAIL  
UNDERSIDES: CLEAR  
DOPED.

REMAINDER: BROWN-  
ISH - KHAKI.

METAL COWLS: MID  
GREY OR UNPAINTED.

U/C STRUTS/GRAVITY  
TANK: MID GREY.  
OTHER

STRUTS/AIRSCREW:  
VARNISHED WOOD



2X 112 LB. R.L. 6 BOMBS  
AEROPLANE FLOWN  
SOLO WITH THIS LOAD









## CONSTRUCTION FEATURE

# BE2E the Model

Roy Scott's 1/6th scale masterpiece  
for .60 size engines

**R**oy Scott was one of those exceptional scale modellers - the kind with an enormous capacity for scale model construction, at a pace that few of us can ever hope to match.

His talent for scale modelling blossomed during the late 1960s to early '70s, when 10cc (.60 cu. in.) engines were all that were allowed (legally, anyway - or at least, without special insurance). Yet Roy, as a professional model-maker DID make some very big models to order, at a time before the arrival of the LMA and before so many of the aids to modelling that, nowadays, we take entirely for granted.

One of Roy's most successful creations for his own personal purposes was his B.E.2e of which he was rightly proud. This one was built down to the confines of the power available from a 'normal' .60-size two-stroke - the ubiquitous O.S.60 (there were few nicer engines of that period).

The B.E.2e here is to a nicely manageable 1/6th scale. It spans 79.75" (2025 mm) and with an overall length of 54.5" will fit comfortably into an average size car for the journey to the flying field.

### Construction

To kick off the construction, it's never a bad idea to start with the tailplane. Quite apart from giving the impression of being 'one-third done', it gets you into the swing of the thing. Roy's plan shows an open structure tailplane with definitive trailing edge, but an alternative would be the much-copied 'Eric Coates' technique of a flat-plate core, with aerofoil ribbed structure built up around it. That way, you get a sharper trailing edge that more closely replicates the full-size.

Wings can be built next, so it's out with the scalpel for a serious wing rib cutting session - or you can take advantage of our laser-cut parts set. There are two servos shown in the centre-section of the

lower wing - one for the ailerons and one for the bomb-release if you're going for this animation option. Go on, give it a try! As an alternative to one centre-mounted aileron servo, two super-slim types could be used, for port and star-board controls, but if you go that route, be sure to select servos that will deliver the drive power necessary to reliably move the ailerons on both upper and lower wings which are linked by adjustable drive struts.

Dihedral on the upper wing is set by the plywood dihedral braces, while for the lower wing, 8 s.w.g. piano wire braces are epoxy glued to the spars. These are not man enough to withstand in-flight loads on their own and it is vital to remember that this model is designed so that the rigging wires take the strain - they're not just there for the scale effect!

The plan shows the wing tips in 3/16" balsa sheet, cambered to follow the centre-line of the aerofoil section. To get that curvature, it might be a good idea to make the wing tips in three laminations of 1/16" sheet.

### Fuselage

The 'character' of this rather quaint looking aeroplane lies in the fuselage with its twin open cockpits, big engine cowl and external elevator control wire running along the sides of the fuselage. The undercarriage, particularly the tailskid, also adds to that 'character'.

As a preliminary to fuselage construction, it is a good idea to prepare and bend to shape the combined piano wire main-undercarriage-cum-cabane-strut assembly.

Given the boxy lines of the fuselage, it's no surprise that fuselage construction starts with the basic box based on spruce longerons, but with balsa spacers and cross pieces, plus 1/4" sheet balsa sides back as far as the rear cockpit and 1/16" ply doublers. Beyond that, it is a matter of adding the top deck





NB: Laser-cut components shown here are only representative examples of the work - not specific to the BE2E offered.

## PLANS 'N' PARTS

# For the B.E.2e

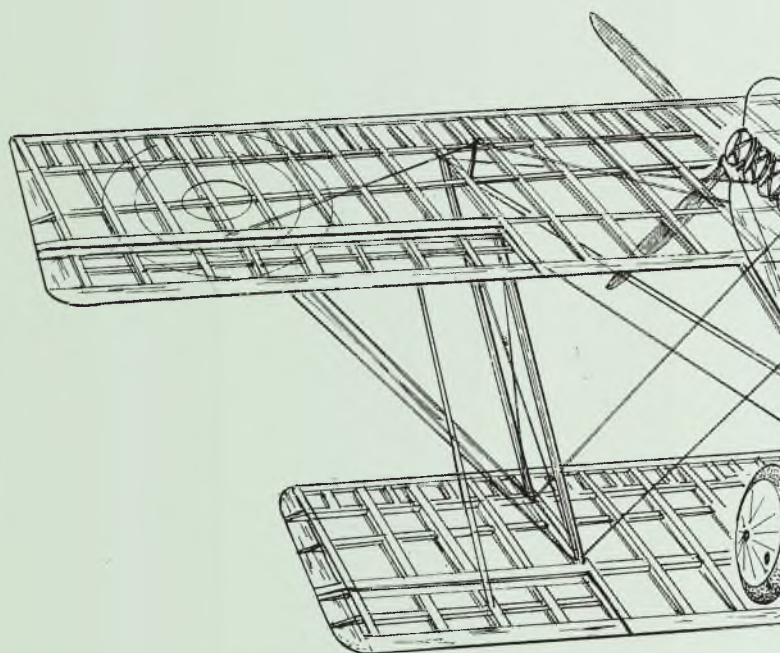
**FULL-SIZE COPIES** of the two-sheet plan set for the B.E.2e are available from Flying Scale Models Plans Service, Model Activity Press Ltd., Unit 5, Chiltern Business Centre, 63-65 Woodside Road, Amersham, Bucks, HP6 6AA, Great Britain.  
Price £19.50 plus post & packing - UK £5.00; Europe £5.95; Rest of world £9.00.

### BE READY TO START BUILDING AS SOON AS YOU UNFOLD THE PLANS!

**ALSO AVAILABLE** is a set of laser-cut airframe components that include wing ribs and leading edge riblets, fuselage formers, fuselage sides and doublers, engine bulkhead, tailplane, fin & rudder centre cores; tailplane/fin & rudder ribs and scalloped ply trailing edge strips. Altogether, a set of parts that eliminates much of the initial cutting work so that the building task can commence immediately.

**Prices £130.00 plus £9.50 UK postage.**

(Overseas customers: postage charged on individual country basis - please enquire).

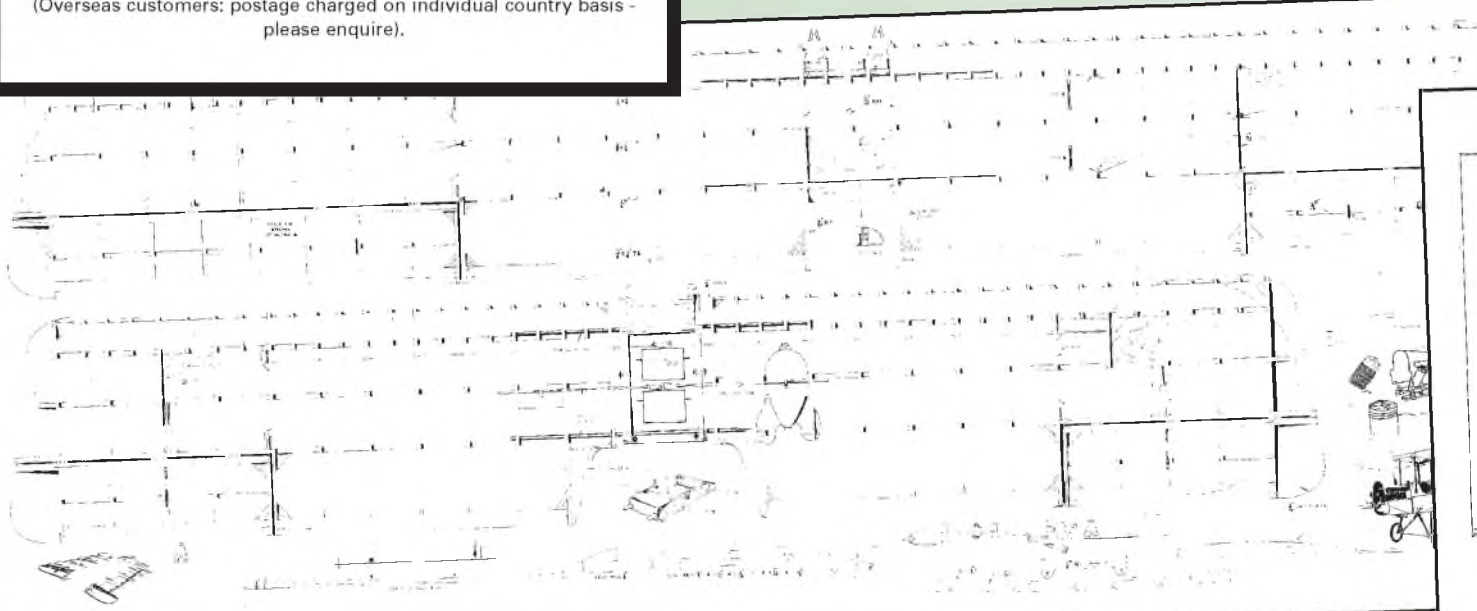


formers and 1mm ply decking to achieve a complete basic fuselage.

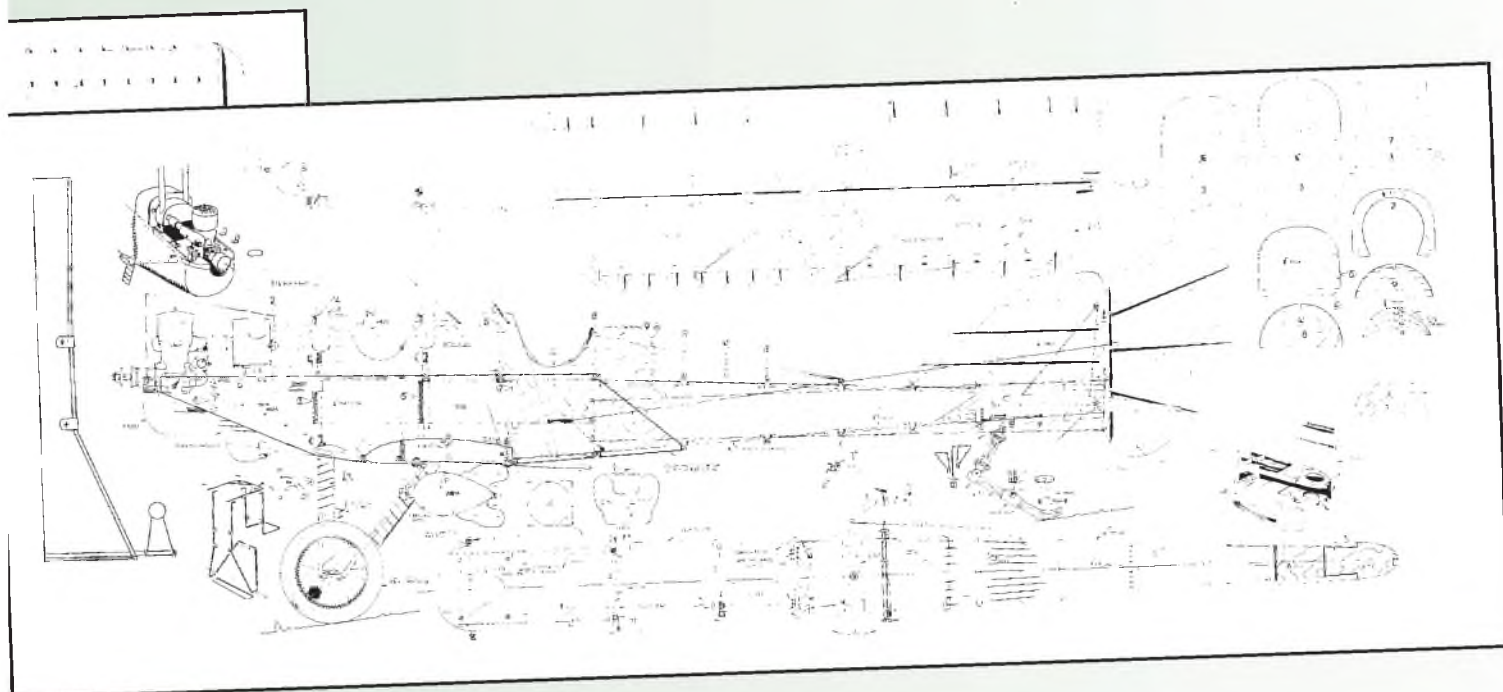
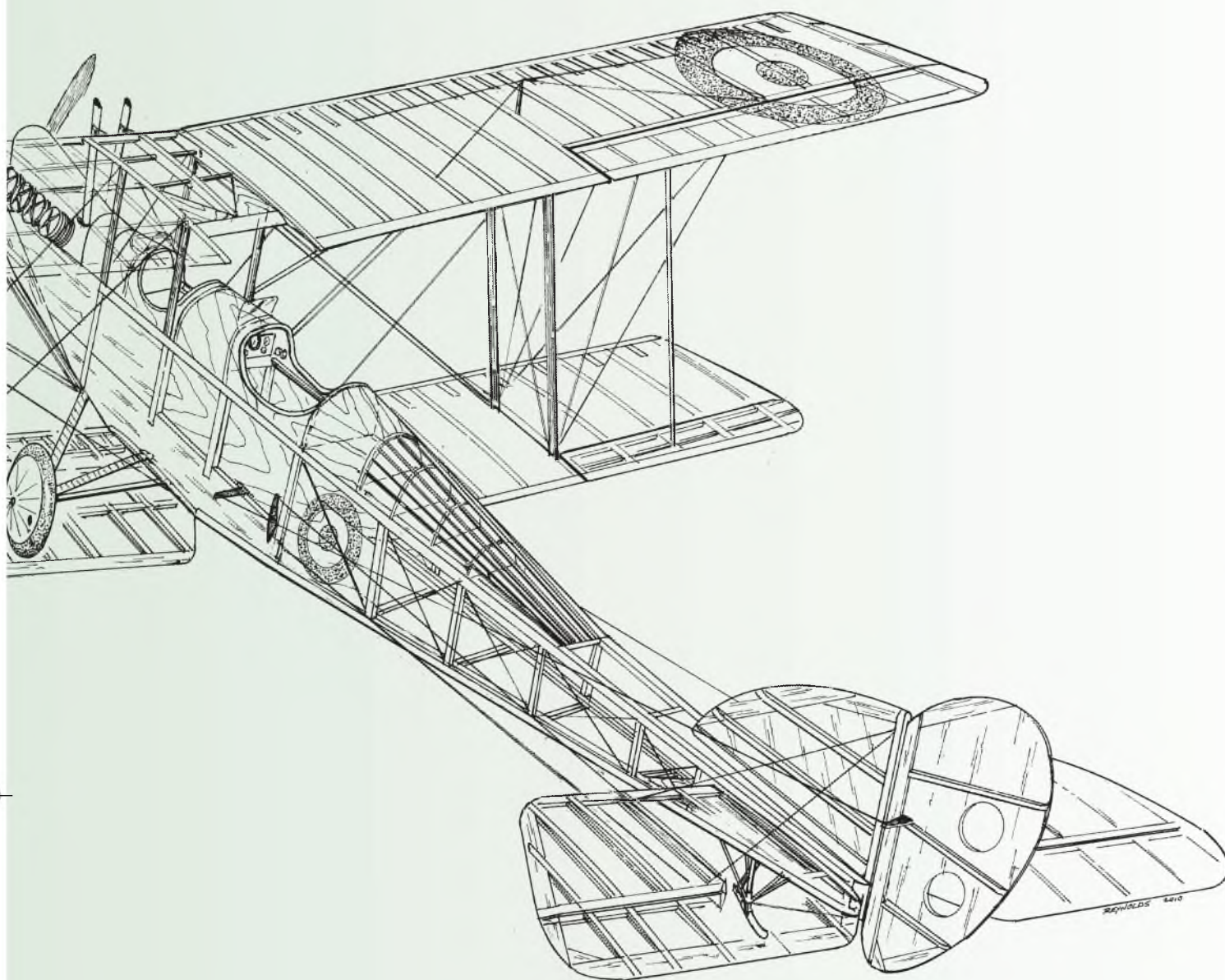
Once the airframe is complete, and the radio and engine installation done, it is time to face the task of all those rigging wires. The plan shows the full layout and anchor points. Just remember what has already been said ... that the brac-

ing wires are not there just for decoration. They do the work, as per the full-size, in preventing the wings from clapping hands above the cockpit! So be sure that all wire terminations are fully secure - and adjustable!

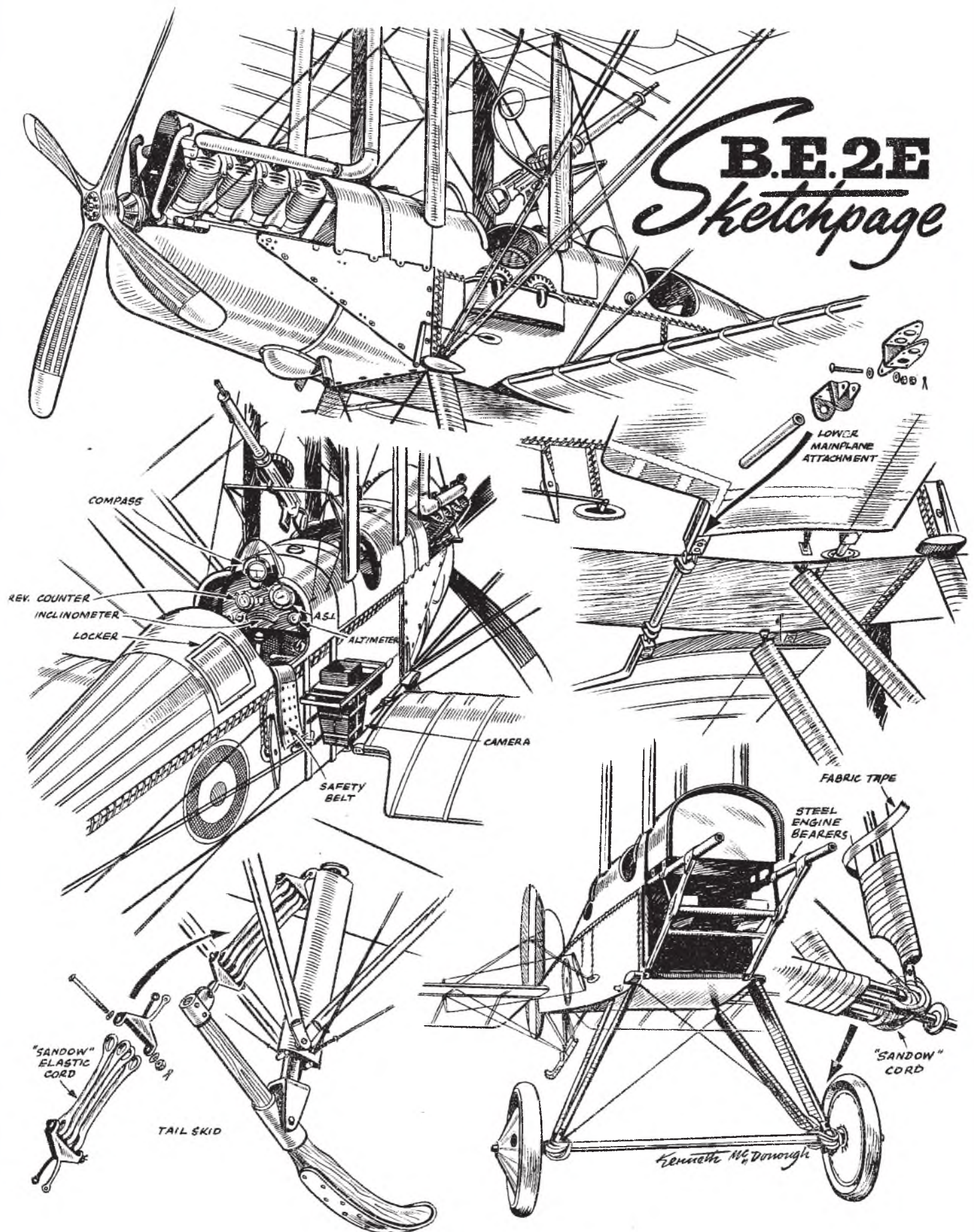
Covering? Well Solartex, or maybe Koverall are the standard for an open framework type like this. ■















## **DETAIL STUDY** *with photos by Paul Butler*

# B.E.2f Restoration

Not quite a B.E.2e, but externally, the 'f' version is near enough for Paul Butler's collection of detail photos presented here, to be a good source of surface detail

**T**he B.E. 2f is very similar to the B.E.2e, and is basically a B.E.2c with 'E' wings, although there are some other less apparent carry-overs from the 'C'. The world's only airworthy and genuine example of the type flew again in New Zealand in April last year after a very lengthy 25-year restoration that spanned the world, the project having previously been worked on by several different organisations both in the UK and in New Zealand. Initially this project was thought to be a B.E.2e.

It was believed to be part of a batch of delivered to Norway by the RFC in 1917. How it made its way back to UK is not know, but It was eventually donated to the Mosquito Museum in the UK (the type being an early De Havilland design), and after several years, it found its way into private ownership - and was put up for sale.

It was acquired by the NZ-based *1914-18 Aviation Heritage Trust* over ten years ago. The fuselage was in great condition, with a lot of original timber in airworthy standard. A set of reproduction wings

had been made for it in the UK (not entirely accurately, as it turned out), and it arrived in New Zealand with an original RAF 1a engine in very poor condition.

April 2nd 2009 was a landmark day for this painstaking restoration, when the aircraft took to the air again. Since the 'F' is so similar to the 'E' version, this collection of close-up detail pictures taken by Australian Paul Butler provide an excellent basis for piling on the detail to Roy Scott's 1/6th scale model feature in this issue. ■















**SEIDEL ST-7-35**  
Prop- 16x8,18x6  
18x8,20x5  
**£895.00**



### SEIDEL RADIAL ENGINES

**SEIDEL ST-7-70**  
Prop- 24x8,24x10  
3 Blade- 22x8  
**£995.00**



**SEIDEL ST-9-90**  
Prop- 26x10,28x8  
**£1495.00**

**SEIDEL ST-7-250B**  
Prop- 32x14,38x12  
3 Blade- 30x12  
**£2500.00**



### SP RANGE

**120SP**  
**£289.00**

**90SP**  
**£249.00**

**60SP**  
**£199.00**



2 blade - 20x12  
3 blade - 15.75x13  
4 blade - 15.5x12

2 blade - 18x12  
3 blade - 15.75x13  
4 blade - 15.5x12

2 blade - 16x12  
3 blade - 15x13.5  
4 blade - 14.5x11

**Recommended prop sizes**



### Genesis in-cowl exhaust for SP range

60SP **£69.99**  
90SP **£79.99**  
120SP **£89.99**



**91CD**  
**£189.00**  
**58CD**  
**£149.00**



### CD RANGE

**westonuk**  
**www.westonuk.co.uk**

84-88 London Road, Teynham, Sittingbourne  
Kent, ME9 9QH England.  
Tel:- 01795 522020 or 01795 521030

## EVERYTHING *Airbrush*

Everything you need for all your airbrushing and painting requirements in one shop. Visit our website at [www.everythingairbrush.com](http://www.everythingairbrush.com)  
**Superb range of equipment to suit all budgets.**



### Huge Range of:

- Top Brand and budget Airbrushes & accessories
- Pinstriping Brushes and Fineline tapes
- Golden, Createx & AutoAir Paints
- Huge range of Compressors, Books & DVD's
- Sprayguns and Spraying accessories

### Special readers offer:

Enter the code MM0409 into the checkout on our website or mention this advert when you order and receive a **5% discount!**

**Find us online at [Everythingairbrush.com](http://Everythingairbrush.com),  
or call our order hotline 01202 622 579  
during office hours**

Everythingairbrush  
C5-C6, 46 Holton Road, Holton Heath Trading Park  
Poole, Dorset, BH16 6LT

## Teesside Model Airshow



A family event that everyone can enjoy. Bring a folding chair and relax. Refreshments are available but please feel free to bring your own. We hope to see you there.  
Flying Saturday 10am - 5pm  
Sunday 10am - 4pm

Limited camping spaces available so book early.

**June 5th-6th**

Redmarshall near  
STOCKTON-ON-TEES  
Signposted from the A66



TMFC hope you have a brilliant day. Visit [www.tmfc.co.uk/directions](http://www.tmfc.co.uk/directions) for directions and more information.

Prices: Adult £5  
Child £2

Pay  
on the  
day





# AeroDetail series

**What makes a good scale model GREAT? It's the detail of course!**

But finding all the detail needed to finish a scale model can be difficult - it's not always at all practical to get at the full size machine and record all the close-up detail you'll need.

This range of **DETAIL PHOTO COLLECTIONS** provides extensive close-ups of a wide range of popular aircraft all on CD in RGB J-peg (jpg) format for you to look at in large format on your computer screen.

## Look through the lens on your home computer...

### **AERONCA SEDAN** - (80 images)

The last and most graceful of the Aeronca line of light/sports aircraft in fine detail.

### **AVRO 504K** - (140 images)

The Shuttleworth Museum's superbly maintained machine, in full detail.

### **NEW... ARROW ACTIVE II** - (50 images)

Sole remaining example of this 1930s racing and aerobatic biplane restored to pristine condition.

### **BEECH STAGGERWING** - (45 images)

The distinctive back-staggered 1930s biplane with retracting undercarriage.

### **BELL P-39Q AIRACOBRA** - (130 images)

Superbly restored example of this much maligned WW2 fighter aircraft, that was used with great success by Russian forces in the ground attack role and with saw much action in the south Pacific, from where this restored example was recovered.

### **BLERIOT MONOPLANE** - (74 images)

The Shuttleworth Museum's machine, the oldest original example still flying. Much close-up detail showing all the exposed rigging, structure and the 'bedstead' main undercarriage, plus Anzani engine.

### **BOEING PT-13/17 STEARMAN** - (54 images)

Subject aircraft is a current British civil register example used for airshow displays.

### **BRISTOL BULLDOG** - (60 images)

This collection depicts the example assembled from two donor airframes and restored to superb standard by Skysport Engineering. It can now be seen at the Royal Air Force museum, Hendon.

### **BRISTOL F2B 'BRISFIT'** - (28 images)

Full close-up detail, including photos of engine cowls, for both Rolls Royce Falcon and Hispano-Suiza engines.

### **NEW... BRISTOL M.1c** - (100 images)

Early WW1 fighter monoplane. Example depicted is the faithfully authentic replica built by the Northern Aero Works and operated by the Shuttleworth Trust museum.

### **BUCKER BESTMAN** - (43 images)

Authentic example as exhibited at the Fantasy of Flight museum in WW2 Luftwaffe colour scheme.

### **BUCKER JUNGMEISTER** - (79 images)

Radial engine version. Example from Fantasy of Flight museum.

### **CHANCE VOUGHT F4U-1D CORSAIR** - (132 images)

The famous 'bent wing bird' and super detail.

### **NEW... CHILTON DW1** - (90 images)

Original upright engined version of this diminutive British low wing sports/racer.

### **CHRISLEA SUPER ACE** - (123 images)

Late 1940s civil light aircraft with distinctive twin fins and nosewheel type undercarriage. A fully restored example.

### **CHRISTEN EAGLE** - (90 images)

The spectacular, stylish aerobatic biplane revealed in close-up. Example shown is the two seat version.

### **CIERVA C.30 AUTOGIRO** - (35 images)

A study of the example hung in the Fantasy of Flight Museum, finished in RAF WW2 colours.

### **COMPER SWIFT** - (91 images)

1930s racing aircraft. Example depicted is the radial engined example at Shuttleworth Museum.

### **CURTIS HAWK 75** - (130 images)

The 'export' version of the Curtiss P-36 that saw service in during WW2 with Finland and during the 'Battle of France' in May/June 1940. Example shown is a combat veteran.

### **CURTIS JN-4 'JENNY'** - (130 images)

An authentic, restored example in full detail

### **NEW... CURTIS P-40B TOMAHAWK** - (130 images)

Rare, full restored example of the early version of the Curtiss fighter aircraft that was at Pearl Harbour on Dec. 7th 1941 - and survived the attack!

### **CURTIS P-40N** - (100 images)

One of the later versions of the famous Curtiss Warhawk, the WW2 fighter aircraft that saw service in just about every combat theatre of operations.

### **De HAVILLAND DH84 DRAGON** - (40 images)

Forerunner of the more famous DH 89 Dragon Rapide, this collection depicts a superbly restored example.

### **De HAVILLAND DH89 DRAGON RAPIDE** - (100 images)

Graceful twin engine biplane airliner that saw service from pre-WW2 through to the mid 1950s. Several are still flying and three are shown in this picture collection.

### **NEW... De HAVILLAND DH 53** - (60 images)

1920s lightweight low wing sports aircraft designed to a low-power specification. Machine illustrated is the sole remaining example.

### **NEW... De HAVILLAND DH 60** - (140 images)

The aircraft that set the British 'club' flying movement on the road to success during the 1930s.

### **DH TIGER MOTH** - (110 images)

Much close-up detail of civil register example, plus further detail of the IWM Duxford's example in Royal Navy trainer colours, showing the blind flying hood.

### **DHC CHIPMUNK** - (70 images)

A bumper bundle of images that provides a vast array of detail pictures, plus photos of examples in both RAF trainer and civil colours.

### **ERCO ERCOUCPE 415 & AVALON ERCOUCPE** - (115 images)

The elegant twin finned light/sport aircraft. Both original Type 415 and later Avalon resurrection examples.



**FAIRCHILD RANGER** - (60 images)

Elegant U.S. high wing light aircraft in full detail. Two examples shown.

**FIESELER STORCH** - (90 images)

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

**FOKKER D.VIII** - (69 images)

The Fantasy of Flight museum's example of the late WW1 Imperial German Air Service monoplane fighter, in full detail.

**NEW... FOCKE WULF FW 190A** - (90 images)

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

**GLOSTER GLADIATOR** - (50 images)

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.

**GRUMMAN F3F** - (34 images)

A study of the faithfully replicated example of the 1930s US Navy biplane fighter as seen at the 2001 Flying Legends Show.

**GRUMMAN F6F-5 HELLCAT** - (95 Images)

The US Navy's most effective WW2 fighter.

**GRUMMAN F7F TIGERCAT** - (63 Images)

Late WW 2 long range patrol fighter.

**GRUMMAN F8F BEARCAT** - (96 Images)

Hottest Navy piston engined fighter of them all!

**GRUMMAN FM-2 WILDCAT** - (95 Images)

WW2 Naval Fighter, served with the escort carriers.

**HAWKER FURY** - (55 Images)

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.

**HAWKER HART & HIND** - (115 images)

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

**HAWKER HURRICANE MK.1 & MK.IV** - (170 images)

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'.

**HAWKER SEA FURY FB.XI** - (140 images)

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

**NEW... HAWKER TOMTIT** - (140 images)

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

**KAWASAKI KI100** - (62 images)

The elegant late 1940s US light aircraft. Several examples provided, with much close-up detail for modellers.

**LUTON MINOR** - (32 images)

Just one example of this light aircraft, to which the owner has applied many mods and variations.

**LVG C.VI** - (110 images)

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

**MARTIN B-26 MARAUDER** - (100 images)

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

**MESSERSCHMITT ME 410A-1/U2** - (79 images)**MILES MAGISTER** - (100 images)

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

**MORANE SAULNIER MS406** - (92 images)

French WW2 fighter that fought in the Battle of France, 1940. Swiss restored example.

**NORTH AMERICAN AT-6 HAVARD** - (76 images)

AT-6, SNJ, Texan, Harvard - call it what you will. 55,000 were built - this example is in US Army colours, with comprehensive close-up detail, nose to tail.

**NORTH AMERICAN A-36 INVADER/APACHE** - (69 images)

The ground attack variant of the Allison engined P-51A. Photos, in detail, of the world's only airworthy example.

**NORTH AMERICAN P-51B MUSTANG** - (102 images)

First of the Rolls Royce Merlin engined Mustangs, this collection depicts the Fantasy of Flight Museum's restored example, with overly polished plain metal surfaces. Much detail.

Also, 41 images of The Fighter Collection's P-51C in bare metal restoration, showing much surface and internal airframe detail. A real bumper bundle! (over 100 images)

**NORTH AMERICAN P-51D MUSTANG** - (102 images)

The definitive, bubble canopy Merlin Mustang. In detail, showing several restored examples. This is the Fantasy of Flight Museum's over-polished example, but the close-up detail is all there.

**NORTH AMERICAN B-25 MITCHELL** - (74 images)

Fantasy of Flight Museum's example. Photographed soon after superb restoration. Full nose to tail detail.

**NORTH AMERICAN T-28** - (118 Images)

US Air Force & Navy basic trainer.

**NEW... PERCIVAL MEW GULL** - (35 images)

Famous 1930s racing and record setting aircraft that will forever linked with the achievements of British aviator Alex Henshaw.

**PERCIVAL PROVOST** - (30 images)

Airworthy, preserved example of the RAF piston-engined basic trainer used in the 1950s. Full detail.

**PIPER L-4 GRASSHOPPER** - (80 images)

Military version of the famous Piper J-3 Cub used during WW2 and close reconnaissance and spotter aircraft and for many other tasks.

**PIPER SUPER CUB** - (80 images)

The later, 'cleaned-up' version of the famous Piper J-3, with more elegant engine cowl. Two examples shown.

**PIPER TOMAHAWK** - (54 images)

Cranfield Flying School example of this civil ab-initio trainer aircraft.

**PITTS S.1** - (36 images)

Homebuilt example by Bob Millinchip, as seen at 2002 PFA Rally. Complete detail study

**POLIKARPOV I-15** - (100 images)

The ultra agile Russian biplane fighter aircraft that saw widespread service prior to and in the early years of WW2 and during the Spanish civil war. Example illustrated is a superbly restored machine.

**POLIKARPOV PO-2** - (170 images)

The world's most numerous produced aircraft of all time, the PO-2 was a great maid-of-all-work used by both military and civil groups in the old Soviet Union and its satellite states. Example depicted is pristine, and now in storage at IWM Cosford.

**REPUBLIC P-47D THUNDERBOLT** - (105 images)

Bubble-canopy version of the much loved 'Jug'; photographed in fine detail.

**RYAN PT-22** - (92 Images)

American primary trainer.

**S.E.5a** - (100 plus images)

Shuttleworth Museum's airworthy example presented in full detail.

**SOPWITH PUP** - (50 images)

The charismatic Sopwith Scout (to give its correct designation) is a great scale modellers' favourite. Example depicted is the one preserved and regularly flown at the Shuttleworth Collection, Old Warden.

**SOPWITH TRIPLANE** - (120 images)

The last example of the 'Tripehound' is the one built (during 1980s) from original Sopwith drawings by Northern Aero Works and given sequential manufacturer's number by Sir Thomas Sopwith himself in recognition of the outstanding workmanship. Extensive detail.

**STINSON 105** - (75 images)

Light, private aircraft of the 1940-50s era, with lots of character.

**SUPERMARINE SEAFIRE MK.XVII** - (64 images)

The Seafire 17 was no navalised Spit. A true ground-up naval fighter.

**SUPERMARINE SPITFIRE MK.XIV** - (58 images)

2nd of the Griffon-engined Spits (Mk.XII was first), the bigger engine forced a change of the classic Spitfire shape.

**SUPERMARINE SPITFIRE MK.XVI (BUBBLE CANOPY)** - (116 images)

Last of the Merlin-engined Spitfires. This collection depicts the 'cut-down' fuselage, bubble cockpit canopy later version.

**SUPERMARINE SPITFIRE Mk Vc** - (160 images)

Shuttleworth Museum's airworthy example presented in its latest form with classic rounded wingtip planform.

**SUPERMARINE SPITFIRE MK.IX** - (90 images)

The most numerous version of the classic Spitfire that turned the tables on the Luftwaffe's Focke Wulf Fw 190.

**STEEN SKYBOLT** - (89 images)

Attractive US aerobatic biplane, presented in full detail.

**NEW... THULIN TUMMELISA** - (55 images)

Swedish 1919-era fighter trainer that served the Swedish air arm for many years. Example depicted is a faithful reproduction.

**TIPSY BELFAIR** - (35 images)

Highly attractive Belgian low wing light aircraft from the era of simple, open cockpit private flying. Machine offers scale modellers pleasant lines and simple shape.

**VICKERS SUPERMARINE WALRUS** - (80 images)

The famous 'Shagbag' biplane seaplane, used during WW2 as an air-sea rescue craft and fleet gunnery spotter.

**WACO YMF-5** - (130 images)

Beautiful and graceful spatted undercarriage biplane of the 1930s 'golden aviation era'. Example photographed is an accurate-in-every-detail modern replica.

**WESTLAND LYSANDER** - (39 images)

The Shuttleworth Museum's airworthy example shown in both camouflage and Special Operations black finishes. Full close-up detail.

**WHITMAN TAILWIND** - (62 images)

Two examples shown, of this US homebuilt lightplane, with boxy shape ideal for modellers. Complete close-up detail.

# Only £12.99 each including P&P

(Allow up to 28 days for delivery)

For all credit card orders please call or fax: **01493 377267**. Between 9-30am - 14.00pm  
or email: [jackie@modelactivitypress.com](mailto:jackie@modelactivitypress.com) After 2pm please call our main office

**Tel:** 01494 433453 **Fax:** 01494 433468



**Model Activity Press Ltd.**



5 Chiltern Business Centre, 63-65 Woodside Road, Amersham, Bucks, HP6 6AA.



## FULL-SIZE FREE PLAN FEATURE

# Albatros D.III

A 1/8th scale model for electric power and four-function control, designed by Peter Rake and built and described by Brian Allen. **Part 1**

**T**his design came about by accident really. During an electronic conversation with Pat Lynch, he decided he'd had enough British types for the moment, but wanted an in-line engine subject. I suggested either the Albatros D.II, or the D.III.

While Pat made up his mind, I jumped the gun and drew up both types. Pat opted for the D.II, which has already appeared as a free plan in FSM Nov./Dec. 2008 issues, leaving me with the D.III design doing nothing. At this point Brian Allen volunteered to build the later version and the day was saved. The result is the model you see here, so I'll waste no more time before handing you over to Brian for all the details.

**Peter Rake**

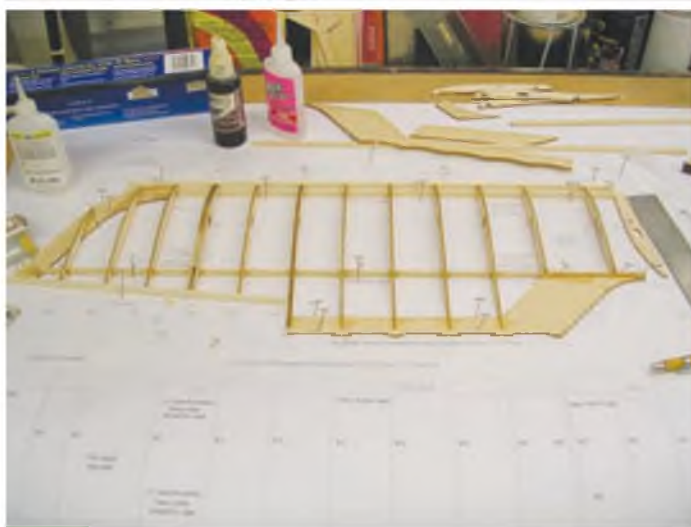
**O**ne of the most readily recognized WWI fighters, the Albatros D.III was a development from the earlier D.II version. The D.III differs from the D.II mainly in adopting the narrow chord, shorter span lower sesquiplane wing similar to that used on the Nieuport fighters of the period. It also adopted the single 'V'-type wing strut in place of the two separate fore and aft struts used on the D.II. It was an attempt to increase the manoeuvrability of the Albatros to match that of the new Allied fighters and to provide better downward visibility.

While the design change was successful in those aspects, the sesquiplane wing suffered from structural problems as did that of the Nieuports. The wing could be over stressed easily, resulting in loss of the leading edge,

All set for another sortie, Brian Allen's Albatros D.III looks very colourful.







**TOP LEFT:** Lower wing construction begins. The bass trailing edges add durability. **TOP RIGHT:** A completed lower wing panel. Note the root bay sheeting, locating dowels and strut socket. **ABOVE LEFT:** Nothing too complicated about the top wings. Having no dihedral, they could be built with continuous spars and leading edge, but that wouldn't fit on the plan. **ABOVE RIGHT:** Revealing how the centre section is sheeted, has its rear built up with balsa and how it's shaped.

the upper surface covering or complete failure. Attempts were made to try to correct the problem but the redesigns were never completely successful up through, and including, the final DVa aircraft. DIII pilots learned to be careful to not overstress the airframe as the increased manoeuvrability was a big advantage. (Leading to the 'Bloody April' era of air combat. PR.)

### The model

Peter has designed a delightful version of this well known fighter. It follows his usual well thought out design criteria and produces a fine flying model of about a 44" span. The design requires a suitable outrunner in the 125 to 150 watt range spinning an 11" or 12" prop on two LiPo cells. Final flying weight should be in the 40 to 48 ounces range depending on motor and battery used.

A laser-cut short kit was supplied for the prototype build. It contained all the ribs, formers wheel kits, etc., and also included a vacuum-formed plastic spinner. (The plan actually shows a glassed foam spinner, for those preferring to make their own. This worked well on Pat's D.II. PR.)

Peter's design allows the builder to build the D.III using standard servo and pushrod installations or to use the scale cable-driven elevators and ailerons. Prior to start of construction I would advise that the builder study the plans carefully and mark all the cut parts to ease assembly. The builder will also have to make a decision as to what aileron setup he wishes to use (cables or pushrods) and whether the fuselage is to be the more common stained finish or a coloured finish. Most

of the Albatros fighters were delivered with the plywood fuselage covering stained and sealed. Some were painted so a number of colour schemes are available. If the builder decides to go with the more common plywood covered fuselage, the model fuselage can be sheeted with sections of 1/64" aircraft plywood that are stained appropriately. (As Pat did for the D.II. PR.) My model used standard balsa sheeting for the fuselage covering as I was using a fully painted scheme.

If the builder decides to use either the cable-driven ailerons and/or the ply covered fuselage, it is highly recommended that he review the excellent build thread on *RC Groups Ezone* scale electric forum by Pat Lynch of Peter's Albatros D.II design. Pat describes the cable ailerons and ply fuselage covering in great detail. (Or obtain the two back issues of *FSM* that contain the plans and article from MAP. PR.) My build thread on the *Ezone* covers the more standard balsa sheeted fuselage and servo/pushrod aileron setup.

### Getting started

Construction starts with the lower wings. One of the nice features of Peter's design is the use of a section of 3/32" basswood for the wing trailing edges and wing tips. This really helps strengthen these areas that attract hangar rash. The wing spars are 1/8" x 1/4" basswood for strength.

The trailing edge and wing tip pieces are pinned in place and glued together. Prior to pinning the wing spars in place, the ends where they go over the tip need to be notched so they will lie flat. The spars should also be tapered from the last rib to the tip. Pin

the spars in place and glue to the tip. The ribs are then added starting with R1 and working toward the tip. Ribs R2 and R3 are very similar so be sure to identify them correctly. R2 is 1/32" shorter in height, as is R1, to allow for the ply root sheeting. Rib R4 is cut from 1/8" balsa and has a notch for the wing strut.

Before gluing in place, add some scrap 1/8" balsa on each side of the notch and sand to the upper airfoil shape to form a pocket for the wing strut. When all the ribs are glued in place the 3/16" square balsa leading edge can be added. The wing sheeting is made from some 1/32" aircraft ply. Cut the sheeting to shape and pre-bend the sheeting by running it over the edge of a table to pre-curve it. This will help to prevent the sheeting from twisting the wing. When all the glue is dry, pop the panel off the board, sand the leading edge to shape and do a preliminary sanding on the panel. The 1/8" dowel alignment pins are then added and the second panel is constructed in the same manner.

### Top wing

The upper wing is constructed in a similar manner. It consists of two panels that are then joined at the centre using some ply dihedral braces. Construction of each panel is similar to the lower panels in terms of materials, ribs, etc. The only major differences are that the upper wing has 1/16" balsa sheeting for the centre section and the ribs that are used to form the strut pockets are laminated from a 1/8" balsa core with two 1/16" ribs on either side instead of the 1/8" rib with scrap to form the pocket. This is done to accommodate the cable aileron linkage setup.





**TOP LEFT:** Laminated edges and a sheet-covered fin lend a scale-like structure to the fin and rudder. **TOP RIGHT:** Note how the tailplane halves have capstrips added and are sanded to a scale-type section. The slots are for the carbon rod joiners. **ABOVE LEFT:** Brian opted for wing-mounted servos, using this type of mount, but cable-operated ailerons are also a proven (D.I.I model) alternative. **ABOVE RIGHT:** Here we clearly see how the crutch-style fuselage construction works. Having these assemblies firmly pinned to the board during sheeting minimizes the risk of warping.

Construction is similar to the lower panels. You start by pinning down the basswood trailing edge and wingtip pieces. The wingtip is made from two pieces of basswood that are glued together. There are two  $1/8" \times 1/4"$  basswood spars that are notched to clear the wingtip and then tapered as for the lower wing. They are then located on the plan and pinned in place. The aileron sub-spar is made from a section of  $1/8"$  sheet and is pinned in place and glued to the trailing edge and wingtip. The ribs are added one at a time. The strut rib is made from a  $1/8"$  centre piece and is glued to two  $1/16"$  balsa ribs, one on either side, ribs R6 and R7. This assembly, when completed is glued in place. When all the ribs are glued in place the leading edge is added. This is a piece of  $3/16" \times 1/4"$  balsa.

The other panel is then constructed in a similar manner. When completed, the two panels are joined together at the centre using the provided  $1/16"$  ply centre section braces. Good fitting joints are critical here, along with proper glue application. When dry, the laminated trailing edge piece is added and the  $1/16"$  centre section sheeting is added. When dry, the wing is popped off the board and the centre section trailing edge block and leading edges are sanded and rounded as required.

### Ailerons

The ailerons are constructed next. The leading edge is made from a piece of  $3/16"$  balsa. The rest of the construction is straightforward. Make sure the aileron horn mounting block is glued in place securely. (*If using the scale, cable-operated system, do not fit the horns until after the aileron is removed from the board - they protrude below its lower surface. PR.*) When dry, the ailerons are removed

from the board and sanded to shape as needed. The leading edge is bevelled (*Rounded looks more scale-like. PR.*) for the hinges. Hinge using the hinges of your choice; I used CA-type hinges. (*Those fluffy looking strip hinges. PR.*)

Next up is the aileron servo installation. I like to make my servos accessible and removable as every time I design something that is permanent or inaccessible, it has to be removed, usually after all covering and detailing is done! I just hate cutting into a fresh covering job. Details are shown on the plan for a  $1/32"$  ply servo plate, screwed to hardwood rails.

The servo leads are extended using two cut down 24" servo extensions. The servo is plugged into the end of the extension and run through the wing. The two leads are joined in the centre section and then an extension is added and made about 12" long (no connector on the end at this time). The plan is to run the servo lead down through the dummy coolant pipe from the upper wing radiator to the dummy engine on the fuselage. A connector will then be added after the lead has been run into the fuselage.

### Tail surfaces

Next step is to make up the tail surfaces. The fin and stabiliser (tailplane) leading edge and the elevator trailing edge are made from three laminations of  $1/16"$  balsa. The fin is made from one piece of cut balsa and some strip stock. When done, the fin can either be covered or, since the full-size model had the fin plywood covered, you can sheet the fin with some hard  $1/32"$  balsa. When done, sand and round the leading edge. The rudder is built up using a laminated trailing edge and

some stick stock. The rudder is covered so no sheeting is required. Hinge using your hinges of choice.

The elevator is made from a laminated trailing edge and some stick stock like the rudder. When done, the trailing edge is rounded off and the leading edge is bevelled for your hinges of choice. (*Once again, rounding, rather than bevelling, looks more correct. PR.*)

The horizontal stabiliser is done in a similar manner; however, it has some additional pieces to form mounting pockets for two mounting pins. It is framed up in a similar way to the fin and rudder. There are two cut pieces of  $1/8"$  balsa in each stab half. These form the sockets for the  $1/8"$  O.D. carbon fibre stabiliser mounting tubes that run through the fuselage. Alignment here is critical in order to insure that the stabiliser mounts properly so make sure everything lines up. The stabiliser leading edge is made from three laminations of  $1/16"$  balsa as per the fin and rudder. I used a single piece of  $1/8" \times 1/4"$  balsa for the stabiliser halves trailing edge. This made alignment of the two halves easier and will be cut when they are popped off the board. After popping the halves off the board add some  $1/16"$  balsa strips to the framework and sand to an airfoil shape.

### The hard bit

Fuselage construction is next in line. The basic construction is based on an upper and lower half built up on horizontal crutch pieces with formers and stringers and the requisite sheeting. The two halves are built separately and are joined after each has most of the sheeting fitted. Doing this sheeting while the



shells are still pinned to the board reduces the risk of distortion.

The lower fuselage half is built first. The crutch pieces are pinned over the plan, the formers, lower wing mount pieces FS1B (note proper orientation of wing dowel holes) and the tail pieces FS2B are glued in place. The corner stringers are then added along with the remaining formers and the two centreline keel pieces. The tailskid mount is added along with the two liteply landing gear mount plates. The upper fuselage half is built in a similar manner. Make sure that the cabane mounts, FS1T, are orientated properly and add the tail pieces FS2T. The corner stringers, keel pieces and liteply cabane mounts are added as per the lower half. Two pieces of 5/32" O.D. aluminium or brass tubing are cut to provide the guide tubes for the 1/8" carbon fibre stab mount pins. They can be added now or later, as desired.

The next thing to do is to bend up the landing gear struts from some .078" piano wire. I used a 3/32" axle. Sections of brass tube that the landing gear wire plug into are cut to length and are added to the landing gear plates, laced in place with some Kevlar thread and epoxied in place. The landing gear pieces are then plugged into the tubes, the axle added and the whole mess fiddled with until it is aligned properly. The joints are wrapped with some fine copper wire and soldered using silver bearing solder. When cool, the gear assembly is removed from the lower fuselage, cleaned as required and balsa strips are epoxied to each leg and the axle and sanded to an airfoil shape.

The bottom side of the lower fuselage can now be sheeted using 1/16" balsa. (If using 1/64" ply to skin your model please note that the chain lines indicate the scale position of individual panel lines. It is strongly recommended that you pre-shape the panels before gluing them in place. PR.) I used four pieces for the nose section and two for the rear section. Note that the bottom section between F3 and F4 is not sheeted; this is the lower hatch and is made from a section of balsa block. After the bottom sheeting is completed the liteply battery tray can be glued in place.

The cabane struts are made up in a similar manner. The pieces are bent up from some 1/16" and some .047" piano wire. The brass tubes are installed in the upper fuselage using Kevlar thread and epoxy, as the landing gear tubes were.

The upper fuselage half is then pinned to the board. I made up a jig to hold the cabane wires in the proper alignment - see the accompanying photograph for details. Once the cabane wires are plugged in and the .047" brace wire added and checked for proper alignment, the joints are wrapped with copper wire and silver soldered. The opposite side cabane is done up in the same manner. The assemblies are then popped out of the tubes, cleaned up and balsa fairing pieces added and sanded to shape.

Once the cabanes are made up, the top side of the upper half can be sheeted with 1/16" balsa. Use pieces that span from former to former as this makes the sheeting easier. Once the top sheeting is done the cockpit opening can be cut out.

Next step is to make up and install the wing mount tubes on the upper wing. First step is to cut four pieces of 3/32" O.D. brass tube each about 2" long and clean up the ends so a piece of 1/16" music wire goes through cleanly. The top half of the fuselage is then pinned to the building board and checked to make sure all is level and straight. Two pieces of 1/8" piano wire (or similar) about 12" long are installed in the stabiliser hold down tubes to provide a reference. The cabane wires are plugged into the fuselage and the ends are greased with a bit of Vaseline or similar to keep the hold down tubes from sticking to the wire. The tubes are then slid onto the cabanes and the wing is placed on the tubes (the wing spars sit on the tubes).

The wing is then checked for proper placement, angles etc. Some minor re-bending of the cabanes may be required, along with some shimming of the wing tubes. When all the angles and dangles are set up properly, the wing tubes are tack glued to the spars using medium CA. Each tube is then laced to the spar using some Kevlar thread and re-glued. When dry, the wing is popped off the cabanes and the tubes securely glued to the spars. Some scrap 1/16" balsa is added around each side of the tubes to provide some covering attachment points.

With the wing set, the two fuselage halves can be glued together. They are clamped together making sure they are aligned properly and glued along the seam of each horizontal crutch piece and each former. (If desired, and to make life a little easier, the servos may be fitted while the fuselage is still two, separate shells. It saves fiddling around through the access hatch. If the rudder horn is fitted at this stage, that linkage can be made up and fitted too. PR.)

Next is to get the fin set in place and the fairing blocks (to the back end of the fin only) made up. I made a mounting base for the fin from some 1/8" balsa glued in place. The fin was located in place and aligned and then pinned in position. Balsa blocks were then cut to shape and tack glued in place, the fin removed and the blocks carved and sanded to shape. When done, they can be popped off and hollowed out and then glued finally in place.

### Next time

We'll have to leave Brian's detailed description there, and take up the story again next month. Yes, I know it's a pain but, since you still only have half a plan, it's no great hardship!



NB: Laser-cut components shown here are only representative examples of the work - not specific to the Chipmunk offered.

## PLANS 'N' PARTS

For the

# ALBATROS D.III

**BE READY TO START BUILDING AS SOON AS  
YOU UNFOLD THE PLANS!**

To get you started with the least possible delay we have set of laser-cut airframe components includes wing ribs and leading edge riblets, fuselage formers, fuselage sides and doublers, engine bulkhead, tailplane, fin & rudder centre cores; tailplane/fin & rudder ribs and scalloped ply trailing edge strips. Altogether, a set of parts that eliminates much of the initial cutting work so that the building task can commence immediately.

**Price: £89.00 plus £9.50 UK postage.**

(Overseas customers: postage charged on individual country basis - please enquire).





## **SUBJECTS FOR SCALE**

# **Piel CP-30 Emo**

A really pleasing shape, plus airframe construction like an overgrown model make this Fr





**A**mong the select names of aircraft designers responsible for the flow of popular home-built designs emanating from France since 1948, Claude Piel has perhaps appeared under a dimmer spotlight than some others like Gardan, Druine, Joly and Delemontez.

Yet perhaps of all the French light aircraft that have been built from plans approved by the R.S.A., those from Claude Piel have been the most attractive in line and among the most conventional in their forms of control and proportion. Immediately after

WW2, Piel constructed the small, single-seat 'Pinnocchio' for a Volkswagen engine, the main feature of which was its appearance as a mini-Spitfire with curved wing outline. Although popular with the local pilots, the design was not produced by other constructors and Piel developed his CP-30 Emeraude as a side-by-side two-seater using a similar wing planform.

This was soon adopted by the home-builders and a number of small companies became interested in serious production, but it seems an unfortunate fact that everyone connected with the Emeraude in some

way or another became so commercially embarrassed that production ceased, through no fault of the design at all. This even extended to the 'Super' version produced by Scintex with more powerful engine, large blown transparent canopy and full instrumentation.

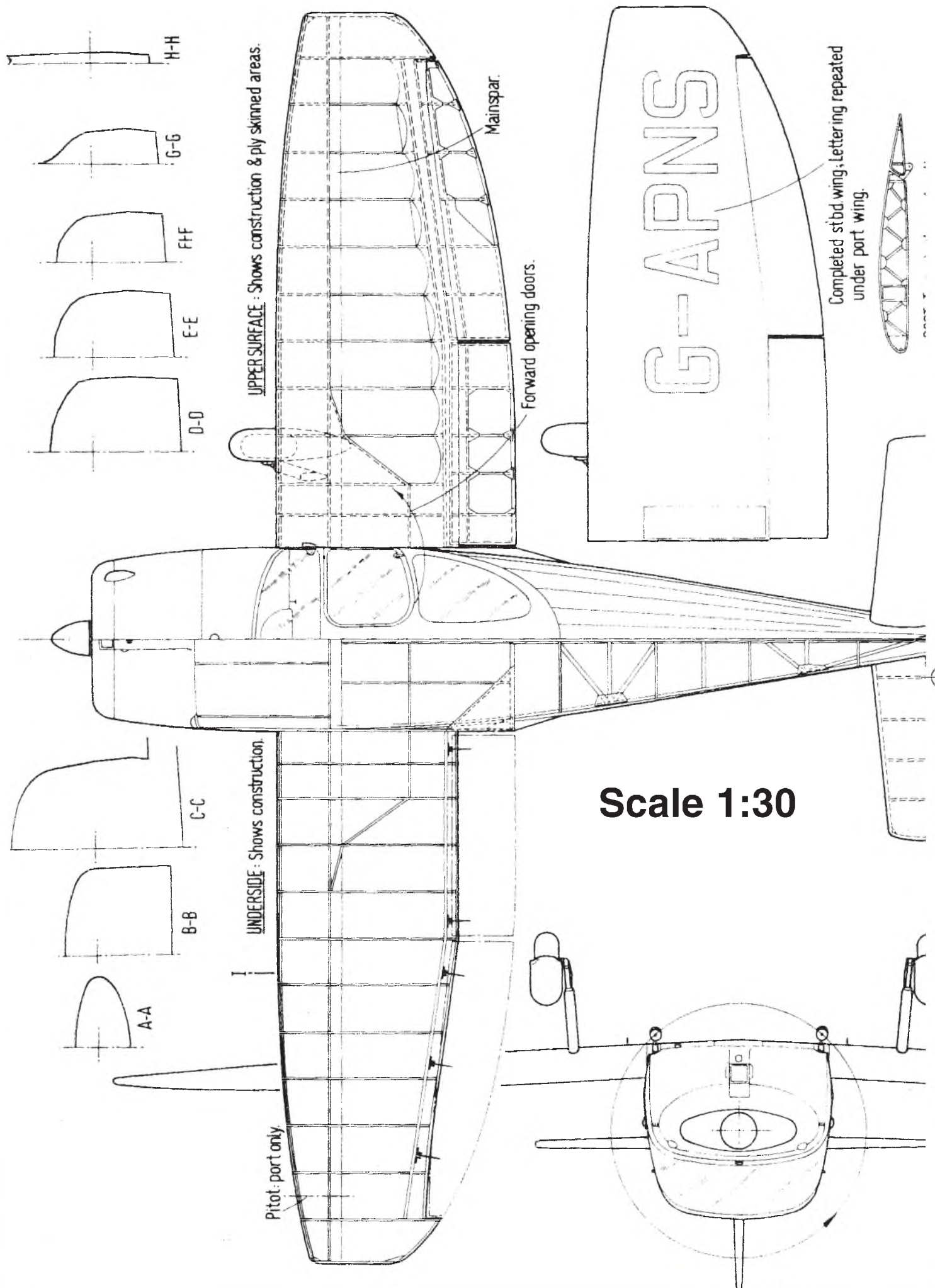
The Emeraude was produced to a limited extent in Britain by Messrs. Garland-Bianchi at Maidenhead, Berkshire, for the (then) very competitive price of £2,200. The name was changed to 'Linnet' and reports of test-flights were glowing with approval. The aircraft was demonstrated during 1958

# Emeraude

French light aircraft a compelling subject for scale modelling









R001 Typical rib construction.

Section at pitot.

Section I-I.

N.B Wing/aileron gap.

ST'BO SIDE ELEVATION.

Instrument panel.

Tailplane position.

PORT SIDE ELEVATION. Shows construction.

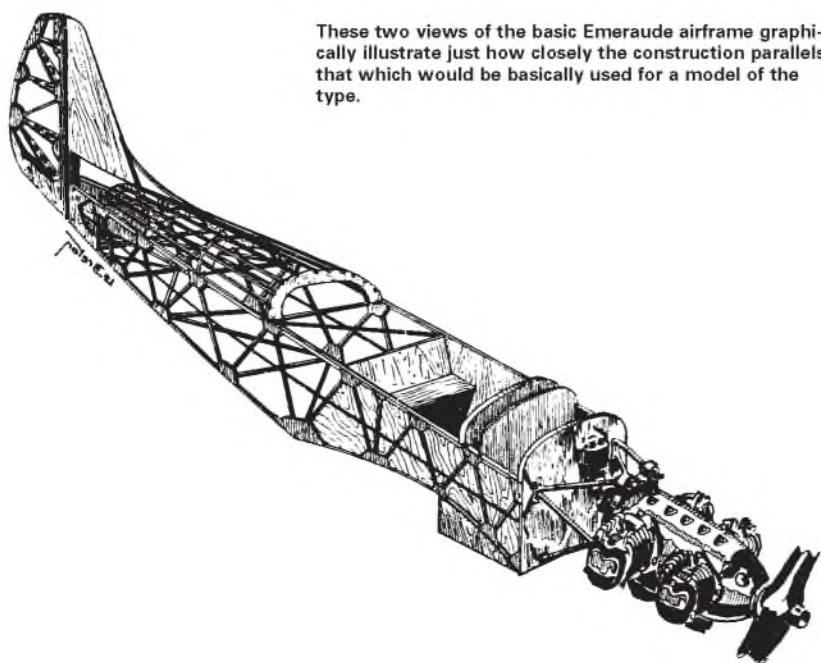
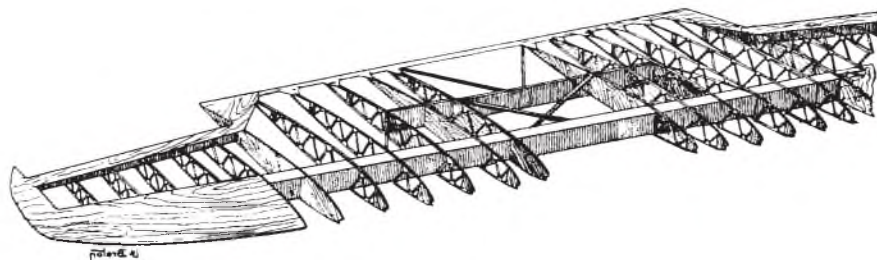
Traced by: A.P. LLOYD.

Scale: FEET.

0 1 2 3 4

# Piel CP-30 EMERAUDE





These two views of the basic Emeraude airframe graphically illustrate just how closely the construction parallels that which would be basically used for a model of the type.

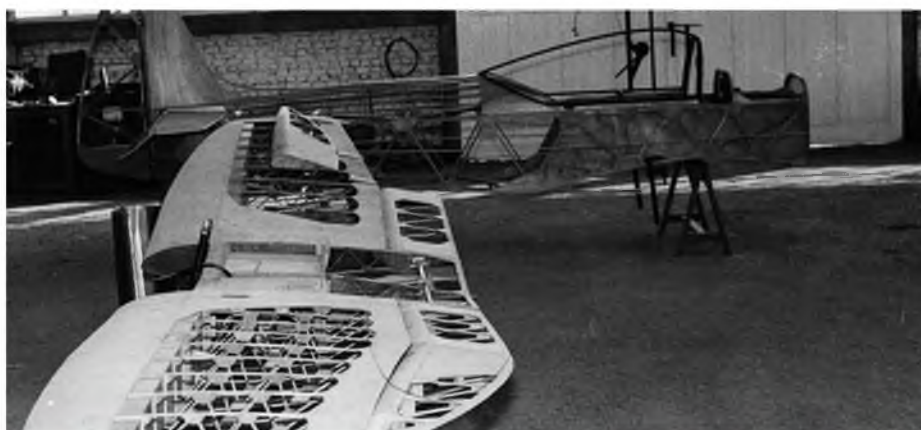
by Neville Duke, the well known test pilot who will always be associated with the development of the Hawker Hunter jet fighter. But production and sales of the 'Linnet' only extended to three examples.

In every respect, the Linnet (Emeraude) behaved as prettily as it looked. Reviews have referred to it as a 'thoroughbred'. Its descendants have maintained the reputation, but it is the Emeraude which remains the most favoured of the Piel designs for home-builders. Many were produced by home-builders in Canada and the U.S.A., where involved colour schemes added extra glamour.

Construction was all wood and an empty weight of 802 lb. is a good reason for the sprightly performance on a 10 h.p. Continental. Strictly a two-seater, it has a top speed of 130 m.p.h., cruises at 115 m.p.h., and a range of over 700 miles. Span is 26 ft. 4 in., length 20 ft. 9 ins. ■









# Scale Scene

## Techno Scale

Mike Evatt walks the web for more Techno Scale topics



Team Duster Designs provides the R/C flyer with scale crop-duster designs.



Thorjet Online for all your ducted-fan needs.

**T**eam Duster Designs at <http://www.teamduster.com> continues to provide the R/C flyer with scale crop-duster designs. They are now offering 100" and 72" wingspan versions of the full-scale Air Tractor 502B. They have computer-drawn plans, and laser-cut short kits available for each model. The Construction Photo CD, together with well-defined construction manuals makes building the Air Tractor fun, and a very rewarding experience.

<http://www.thorjet.co.uk> is the web address of Thorjet Online. Here you can find videos, pictures and information about Thorjet and what they do. They've been at it longer than most! The Thorpe brothers, Peter and Paul, have probably been responsible for more ducted-fan enthusiasts getting their models safely into the air (in the UK) than any other individuals or groups. Back in the 1970s and early '80s it was an achievement to fly D/F models weighing around 4 to 5lb and the performance was

hardly jet-like. The Thorpes changed all that! Take a look at their latest offerings in terms of advice, fan units and kits such as that for the BAe Hawk shown in the screen-shot.

The **A2Z Corp E-Commerce Store** is online at <http://www.a2zcorp.us/store> and will provide quality products for your hobby pursuits. Why not give them a click? What I liked here was the Dumas SPAD XIII 35" span R/C scale model. Here is a beautiful model of the SPAD XIII, designed by Pat Tritle. This 35" wingspan beauty features laser-cut balsa parts, covering tissue, decals, vacuum-moulded parts, and more. This model is designed to use stock off-the-shelf flying hardware for easy, affordable flight.

<http://www.aireeves.com> is the website of 'Reeves 2000'. This is the new name of A. J. Reeves & Co. (Birmingham) Ltd., and the company is still widely accepted as being the world's largest stockist of model engineering supplies. From humble origins, just after the Second World War, the company progressively developed its business at

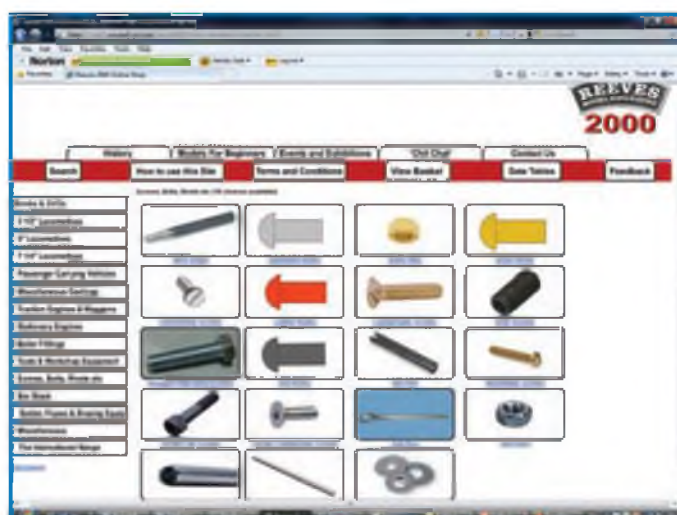
Moseley Road, Birmingham. Their web pages feature a plethora of bar stock, fixings and fastenings and even a section of useful data tables.

Staying with metal providers for a little longer, whether you are starting a new model engineering project or simply need specialist metals, **M-Machine** can offer a huge range of metals in tube, bar, flat plate, sheet and various sections to allow you to complete your project. They are based in Darlington, UK, with a web presence at <http://www.m-machine-metals.co.uk> and offer a huge range of model engineering metals. Export orders are their specialty. Use the downloadable catalogue to view the range of materials on offer and call or email them with any queries you may have on materials for your projects.

The **Blackpool and Fylde Radio Control Model Society** maintains a website at <http://www.blackpoolmodellfliers.org.uk>. Their website contains information about the Blackpool & Fylde RCMS, its location, its



The A2Z Corp E-Commerce Store will provide high quality products for your hobby.



'Reeves 2000' claims to be the world's largest stockist of model engineering supplies.





**FAR LEFT:** M-Machine can offer a huge range of metals in tube, bar, flat plate, sheet, etc.



**LEFT:** The Blackpool and Fylde Radio Control Model Society have superb photo galleries.



**FAR LEFT:** A Gee Bee R2 from Carf-Models.



**LEFT:** Cine-Scale Helicopters designs and builds R/C scale model helis.

flying site and much more, including an excellent photo gallery of members' models. The idea of forming a new model club was first thought of in 'Sharpe's Paint Shop', Church Street, Blackpool, by Peter Sharpe, Derek Hammond and Les Childs in the late 1950s. In those days about 90% of the members were primarily interested in model boats. How times have changed - judging by the current web page content it contains 90% model aircraft at least!

aircraft. Their Gee Bee even has the same airfoil - and that is just one of the reasons why it flies so well.

**Cine-Scale Helicopters** designs and builds functional radio-controlled scale model helicopters. Their workshop speciality is to make their models achieve an unmatched level of finish, and to handle tailor-made projects for their clients. Each model is unique, and built exactly in accordance with customers' requirements. They

gearbox inside the engine. The gearbox is completely maintenance-free providing the most reliable direct drive for small helicopters.

In keeping with the **Brodak** tradition of designing new kits, they have designed the Ryan PT-21 Recruit. This model is from their control-line sport scale series. It was designed and drawn by Frank W. Beatty in 1999. This interesting C/L model has a wingspan of 45", a length of 34" and is suit-



**Jakadofsky Jet Engines** design and make superb turbo-jet power units.

"The best flying models on the planet. There's no reason to settle for anything less". Well that's what **Carf-Models** claim! Check them out at <http://www.carf-models.com> What caught my imagination here was their Gee Bee R2. The mere mention of a Gee Bee conjures up nicknames like 'killer bee', 'widow-maker' and 'flying coffin'... Oh, really? While this Gee Bee is definitely not for the inexperienced, it is easier to fly than you might think. The key to success is that, unlike many other Gee Bee models which have come and gone, the CARF Gee Bee R2 is a faithful scale reproduction of the full-sized



**Brodak's Ryan PT-21 Recruit** is designed for control-line.

do not sub-contract the manufacturing of their parts, and they guarantee a fully hand-made product. Take a look at their website at <http://www.cine-scale.com>

**Jakadofsky Jet Engines** at <http://www.jakadofsky.com> has been in the aviation business since 1985. With a background of thousands of hours piloting turbine aircraft, they complete maintenance, repairs and inspections of full-scale helicopters like the Alouette, Lama and Gazelle. As of 1996 Jakadofsky Jet Engines has been producing smaller jet engines for UAVs and R/C models and in 2000 they developed a turbo-shaft version that integrates a small



**www.helicrazy.com** is a must-visit website.

able for a 0.32 to 0.40 engine. The kit is quite comprehensive and may be viewed at <http://www.brodak.com>

If you are interested in scale model helicopters then a visit to <http://www.helicrazy.com> is a must! Although the website is currently in French it has a vast collection of truly amazing photographs and videos. If you wish to read the text then Google Translator will do the job at the click of a mouse.

That's all there is time for from me this month so push the power button and if you find something out there of interest that might be good to share, email me at [mikeevatt@hotmail.com](mailto:mikeevatt@hotmail.com)



# CLIFF CHARLESWORTH SCALE GLIDER PLANS

**NEW**
**NOW ALSO AVAILABLE WITH LASER-CUT COMPONENT PACKS**
**KAISER Ka-8**

 Plan price **£22.00** Plan No.098

 Component Pack **£125.00**

1/4 scale 147.6" (3750mm) wing span Class 1 scale model of the most popular Club glider. Very docile and a joy to fly. Two large sheet plans.


**MU13-D3**

 Plan price **£20.00**

Plan No.125

Component Pack

**£125.00**

1/4 scale 157.5" (4000mm) span, super-lightweight model of a famous German Soarer. Three sheet plan.


**KAISER Ka6E**

 Plan price **£20.00** Plan No.220

 Component Pack **£125.00**

1/4 scale 147.6" (3750mm) wing span model of a highly elegant high performance sailplane. Two large plan sheets.


**LO 100**

 Plan price **£15.00** Plan No.217

 Component Pack **£125.00**

1/4 scale 98.4" (2500mm) span model of a famous aerobatic sailplane. Two sheet plan.


**SF28A TANDEM FALKE**

 Plan price **£22.00** Plan No.176

 Component Pack **£125.00**


Two seat version of the T61, scaled to 1:4 with a wing span of 157.5" (4000mm). For 60-90 cu.in.motors.

**OLYMPIA 2B (DFS MEISE)**

 Plan price **£20.00** Plan No.139

 Component Pack **£145.00**

147.6" (3750mm) span of a really lovely soarer of the pre-glass fibre 'hotship' era. 1/4 scale model on two large plan sheets.


**ASK-13**

 Plan price **£22.00** Plan No.004

 Component Pack **£135.00**

147.6" (3750mm) span replica of the most popular club two seater glider and trainer in Europe, with a first class performance. Plans on two large sheets. 1/4 scale.


**ASK-18**

 Plan price **£20.00** Plan No.006

 Component Pack **£130.00**

A 1/4 scale 157.5" (4000mm) span replica of one of the best and most elegant pre-glass fibre era club single seat sailplanes. A great flier. Two sheet plans.


**GRUNNAU BABY**

 Plan price **£20.00** Plan No.83

 Component Pack **£125.00**

A superb example of the machine which is the epitome of pre-WW2 vintage open cockpit gliders. 1/4 scale model plans 133.5" (3390mm). Two sheet plan.


**T61 FALKE**

 Plan price **£22.00** Plan No.223

 Component Pack **£135.00**

A 1/4 scale model with a wing span of 147.6" (3750mm). Suits 60-90 cu.in.motors.


**DFS REIHER II**

 Plan price **£20.00** Plan No.158

 Component Pack **£135.00**

1/4 scale replice of the famous pre- WW2 vintage gull-wing German sailplane. This is one for the enthusiast who loves building. Three large sheet plan


**KAISER Ka-7**

 Plan price **£22.00** Plan No.101

 Component Pack **£125.00**

1/4 scale 157.5" (4000mm) wing span model of the famous German two seater glider. Performance is superb and simulates the full size very nicely. Plans on two large sheets.


**HUTTER H-17**

 Plan price **£18.50** Plan No.081

 Component Pack **£130.00**

1/3 scale 129.9" (3300mm) span replica of a lovely vintage scale 'floater'. Light yet tough. Two sheet plan.


**WHAT DO THE CUT-PARTS SETS CONTAIN?**

All the components, in balsa and ply that you would otherwise have to trace off the plan onto the wood and then tediously cut out prior to commencing building! Be ready to start building as soon as you unfold the plans!

**P&P CHARGES FOR PLANS**

Total Order Value	UK	Europe	W/Wide
Up to £10.00	£2.50	£2.95	£5.75
£10.01-£20.00	£5.00	£5.95	£9.00
£20.01-£50.00	£7.00	£8.50	£16.50

**CARRIAGE CHARGES FOR LASER CUT COMPONENT SETS**

UK Charge: £9.50  
Overseas: Freight rates vary widely, please enquire at time of ordering

**MODEL ACTIVITY PRESS LTD**, Unit 5 Chiltern Business Centre,  
63-65 Woodside Rd., Amersham, Bucks, HP6 6AA.

**Tel:** 01494 433453 **Fax:** 01494 433468 **email:** [jackie@modelactivitypress.com](mailto:jackie@modelactivitypress.com)



# Flying Scale Models PLANS SERVICE

Choose your next building project from our huge range!

## R/C SCALE IC POWER

**LVG. C.VI** FSM Nov 2004  
Plan price £25.00. Plan No.263



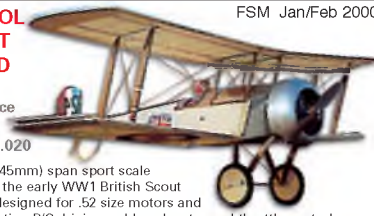
1/6th scale model of the German WW1 two seat reconnaissance aircraft. Prototype model won 'Best of Show' at the 2000 Toledo Weak Signal Expo in USA. 85.3" span (2166mm), for .51-.65 cu. in. two stroke engines or equivalent four strokes and four function radio. Five sheets of plans.

**BAC TSR-2** AMI Dec 1995  
Plan price £18.50. Plan No.011



Few aircraft ever created such political furore as did the enigmatic TSR-2. Now ducted fan jet model enthusiasts can put this distinctive shape back in the air with this scale-like design by Reg Smith. 42.5ins. (1080mm) span, 81 ins. (2507mm) long model suits .9/100 t wo stroke motors and 4-5 function radio gear. Prototype model used Ramtec fan unit.

**BRISTOL SCOUT TYPE D** FSM Jan/Feb 2000  
Plan price £12.50. Plan No.020




A 49" (1245mm) span sport scale replica of the early WW1 British Scout biplane, designed for .52 size motors and three function R/C driving rudder, elevator and throttle controls.

**FOKKER DVII (SMALL)** FSM July/Aug 1999  
Plan price £11.75. Plan No.071



Small, sport scale model of the famous German WW1 fighter for four function R/C equipment and .15 cu.in motors. 38" (965mm) wing span.

**SOPWITH CAMEL** FSM Oct 2005  
Plan price £14.50. Plan No.188



1/6th scale replica of the famous RFC WW1 fighter biplane, for .24-.40 size motors and four function R/C. 56" (1422mm) wing span.

**SOUTHERN MARTLET (1/7th scale)** AMI June 1996  
Plan price £12.50. Plan No.171



A 44" (1118mm) span replica of the attractive 1930s biplane to 1/7th scale. .20 size motors and three function R/C.

**FOKKER D.VII** FSM Feb 2004  
Plan price (either scale) £26.50. 1/4 scale Plan No.241 1/5 scale Plan No.242



1/4 scale spans 82.5" (2095mm) for 30cc (1.8 cu.in.) two stroke engines. 1/5th scale spans 65.7/8" (1673mm) and suits 15cc (.90 cu.in.) four stroke engines. BE SURE TO QUOTE SCALE REQUIRED WHEN ORDERING!

**KAWASAKI Ki61 'HEIN' (SWALLOW)** FSM Oct 2003  
Plan price £12.50. Plan No.240 Cockpit canopy £15.50 Cowl £15.50



Japanese WW2 fighter aircraft, 60" (1524mm) span, near 1/8th scale model suits .45-.60 size two stroke engines or .52-.72 four strokes. Plan shows both foam and conventional structure wings and the fuselage makes use of foam for the rear upper structure. Retractable positions are shown. Minimum four function radio.

**CAUDRON 270 LUCOILE** AMI Nov 1999  
Plan price £14.50. Plan No.028



66" (1676mm) span scale model of an attractive French light biplane, for .60-.80 motors and four function R/C.

**CURTISS P-40 KITTYHAWK** FSM March 2002  
Plan price £11.75. Plan No.037



54" (1370mm) span sport-scale replica of the American WW2 warbird, designed for .52 size four stroke motors or .40 two strokes. Both foam core and conventional balsa built-up wing constructions shown. Model designed to take off from simple wire drop-off dolly, shown on the plan.

**COMPER SWIFT 1/6 SCALE** FSM April 2004  
Plan price £14.50. Plan No.244



The delightful 1930s British light-sport and racing aircraft, built to 1/6th scale by electric R/C expert Chris Golds. Wing span is just 48 ins. (1219mm) and model is designed for 400 brushless or 480 brushed type motors running from 10 x 1850 NiMH cells.

**PIPER CHEROKEE 140** FSM Nov/Dec 1997  
Plan price £12.50. Plan No.145




A 39" (991mm) span scale model of the famous Piper light aircraft for four function R/C and .15 size motors.

**VOUGHT OS2U-3 KINGFISHER** AMI May 1998  
Plan price £15.00. Plan No.211



Sport scale replica of WW2 seaplane scout aircraft for 4/5 function R/C and .60-.90 motors. Wingspan 60" (1524mm).

**COMPER SWIFT 1/4 SCALE**  
Plan price £17.50. Plan No.246




An enlarged version of Chris Gold's 1/6th scale R/C electric scale model for I.C. power, using a .60-.90 cu.in four stroke engine or equivalent two-stroke engine. This is a straight blow-up of Chris' original and no proving prototype has been built, but it is a perfectly workable enlargement, showing increased wood sizes as appropriate. Wing span 72" (1835mm).

**ANTONOV AN-2** AMI April 1997  
Plan price £12.50. Plan No.012



Aprox. 1/14th scale replica of the Russian civil workhorse, now seen in western skies. 50.5" (1283mm) span R/C design uses 3 or 4 function systems and .19-.25 size motors.

**GRUMMAN F6F-3 & 5 HELLCAT** FSM Nov/Dec 1997  
Plan price £19.50. Plan No.085



A 1/6th scale 86" wingspan (8625mm) scale replica. Construction method makes use of carved foam for fuselage and features foam core wing construction. Flaps and retracts featured. For 30-45cc motors. Three sheet plans.

**YAK 3** FSM May 2004  
Plan price £12.50. Plan No.248 Canopy £10.00. Vac.formed cowl £10.00. Accessory pack: Gun troughs, gun breaches & blast troughs £10.00



Russia's WW2 fighter replicated to 50" (1270mm) wing span. Plan shows foam wing, flaps and retract U/C positions. Suits .50 cu.in four stroke engines.

**SE5a** FSM May/June 1998  
Plan price £24.00. Plan No.183



Practical 1/5th scale 64" (1626mm) wingspan replica featuring accurate rib-for-rib airframe structure. A good size model, without being too big for transport. Four function R/C required. (Three sheet plan set).

**DAVIS DA-9** FSM Sept/Oct 1997  
Plan price £15.50. Plan No.048



A 38.5" (978 mm) wingspan scale model of an unusual U.S. home-built aircraft, with butterfly tail configuration. Suits four function radio control systems and 35-.40 cu.in. motors. Two sheet plan.

**SOPWITH PUP** AMI Jan 1996  
Plan AMI No.177 price £16.50. G/F Cowl £17.50



Superb, true-to-scale 1/5th scale replica, features accurate outlines and rib-for-rib reproduction of the full size wing structure. 63 ins. (1600mm) span model is of manageable size for transport and offers realistic flight performance. For .60size motors and 4 function radio. Glass fibre engine cowl available.

**EXTRA 300S & L** AMI May 1997  
Plan price £14.00. Plan No.056 Cowl £22.50. Canopy £17.00. Complete set £50.00



56" span sport scale replica of the spectacular full size competition and display aerobatic machine for .60-.75 engines and four function radio. Cockpit canopy and glass fibre cowl available.



FSM Sept/Oct 1998

**EFA EUROFIGHTER (Tornado)**

Plan price £11.75. Plan No.055

Two channel R/C controlled ducted fan powered model of the new European Fighter Aircraft, for .049 power. 24.5 (550mm) wing span.



AMI Sept 1996

**AERIAL TARGET**

Plan price £11.25. Plan No.002

Original 1917 pilotless aircraft, first attempt to produce a 'flying bomb'. Two versions: 31" span F/F for 0.5cc diesel and 44" span for .15-.19 motors with or without R/C.

**BOEING****PT-13  
STEARMAN**Plan price £19.50.  
Plan No.243

FSM Jan 2004



A 58" (1473mm) wingspan replica of the famous biplane radial engine trainer aircraft of the WW2 era. Designed for 700 size electric motors, but with option of i.c. engine power using a .52-.60 four stroke engine, with modifications shown on a separate plan sheet. (Ready-cut wing ribs and fuselage formers available - see below) Three sheet plan

**BOEING PT-13  
STEARMAN  
COMPONENTS**Parts set price £99.50  
incl postage (available  
UK only)

Take the tedium out of building our Boeing PT-13 with this set of precision laser-cut wing ribs and fuselage formers. It takes the hard graft out of preparation, while leaving all the fun of the building!



FSM

Jan/Feb 2001

**HEATH SUPER PARASOL**

Plan price £17.50. Plan No.086

75" (1905mm) span quarter-scale model of the delightful American homebuilt lightplane for .60 cu.in. size motors. Plans show conventional wheel undercarriage and floats for operation from water.



AMI Feb 1997

**STAACKEN Z-1 FLITZER**

Plan price £12.50. Plan No.190

Scale model of a full size homebuilt biplane designed to capture the air of the WW1 era, this 43.5" span (1105mm) replica suits .35-.48 size motors and four function R/C.



FSM

Nov/Dec 1999

**SPAD 7**

1/4 Scale

Plan price £24.00.

Plan No.181

1/5 Scale

Plan price £24.00.

Plan No. 180

Accurately detailed replica of the French WW1 fighting Scout available in either 1/4 (85.8"/2180mm span) or 1/5th (68.6"/1743mm span) scales. Larger model is designed for 20-25cc (1.2-1.5 cu.in) motors, while the smaller version would be best on a good .90. Four function R/C gear required.



FSM Aug 2008

**CURTISS JN4 'JENNY'**

Plan price £19.50. Plan No.038

81 in. wingspan 1:6.4 scale replica of the classic American biplane. Easy to fly with all the character of the full size. Suits 52-.75 motors and 4 function radio.

**NIEUPORT 11  
(ELECTRIC)**

Plan price £11.75.

Plan No.130

FSM  
May/June  
1999

A 33" (838mm) wing span sport scale model of the French WW1 fighting scout, designed for geared 400 size electric motor power and three function radio operating rudder, elevator and speed controls.

**MONOCOUCÉ  
C90**

AMI Aug 1996

Plan price

£11.50.

Plan No.121

Pretty, 48" (1219mm) span replica of the American 1930s light aircraft, designed for 2-3 function R/C and .10 (1.5cc) motors. Prototype was Mills 1.3 powered.

**R/C SCALE ELECTRIC**

AMI Nov 1997

**CAUDRON 1912 MONOPLANE**

Plan price £12.50. Plan No.033

A sport scale replica of the early French aircraft, designed for 400 size motors, geared 4:1. Three function R/C. Wing span 45" (1143mm).

**REARWIN  
SPEEDSTER**

Plan price

£11.50.

Plan No.155

AMI  
Apr 1999

46" (1168mm) span sport scale replica of the highly attractive American 1930s light aircraft, designed for geared 400 motors size electric power and three function R/C gear. Rudder, elevator and throttle controls.

**D.H. 103  
HORNET**

Plan price

£22.50.

Plan No.052

80" (mm) wingspan sport-scale replica of the hottest production piston engine fighter ever. Suit engines .40-.53. Original retracting undercarriage unit included with the plans.



FSM

Mar/Apr 2001

**MORANE  
SAULNIER  
TYPE L**

FSM July 2004

Plan price £13.50.

Plan No.259

72" (1828 mm) wing span Sport-Scale model of the early WW1 French two-seater aircraft, designed for 600 size motor power. Three function radio required.

**AIRCO DH2**

FSM Jan/Feb 2001

Plan price

£11.75.

Plan No.003

Sport-scale model for the early British WW1 fighting scout aircraft. 1/9th scale model spans 37.5" (953mm) and is electric powered using 400 size motor and three function controls on rudder, elevator and speed control. One-piece airframe.



FSM May/June 2001

**MORANE SAULNIER TYPE 'N'**

Plan price £22.50. Plan No.124

1/3rd Scale. Big sport scale model of the early WW1 French fighting scout for 25-30cc size motors. Wing span 107" (2717mm)



FSM Sept 2004

**B.Ae NIMROD**

Plan price £19.50. Plan No.258

The R.A.F.'s maritime recon/ anti-submarine patrol aircraft, modelled by renowned electric scale expert Chris Golds. 96" (2185mm) span model flies on four Speed 400 electric motors, driving pusher props. Full step-by-step written building instructions.

**GLOSTER METEOR MK.4**

Plan price £14.50. Plan No.079

Twin ducted fan electric powered model of the RAF's first jet fighter aircraft. Uses Speed 400 or 480 size motors and needs four function R/C. Wing span 42.5" (1080mm).

FSM  
May/June  
1998**FREE-FLIGHT SCALE**

AMI JAN 1998

**LOCKHEED C-130 HERCULES**

Plan price £13.50. Plan No.111

Four engine free flight ... and it works! A54" (1393mm) span electric powered model for four KP01 motors. Basic fuselage is foam block.



FSM July/Aug 2001

**ALBATROS D.III**

1/4 Scale

Plan price £22.50.

Plan No.007

1/5 Scale Plan

No. 009

Plan price £22.50.

Designed by Australian R/C Scale expert Gary Sunderland, plans for this classic German WW1 fighter are available in 1/4 and 1/5th scales. Larger model spans 83.7" (2125mm) and suits 25cc motors, while the 1/5th scale version spans 66.9" (1700mm), for .90-1.08 cu.in. motors.

FSM Nov/Dec  
1998**SUPERMARINE ATTACKER**

Plan price £12.50. Plan No.162

Electric ducted fan model of the Royal Navy's first squadron service jet fighter for 480 size motor. Spans 37.4" (950mm). Aileron and elevator primary controls.



AMI June 1996

**BUCKER Bu180 STUDENT**

Plan price £26.50. Plan No.015

A big, but manageable scale model of the German pre-W.W.2 trainer, designed for .90-.120 four stroke motors and four function radio systems. Four sheet plan shows conventional wooden structure for airframe, plus alternative foam core wing.

FSM Mar/Apr  
1998**De HAVILLAND VAMPIRE**

Plan price £17.50. Plan No.041

Electric powered ducted fan replica, 930-6 size motors and fans such as Wemotec/RK720/ Turbo 1000 etc. Wing span 59" (1500mm) for 4/5 function R/C. (Two sheet plans).

FSM JAN/FEB  
1998**BUCKER 133  
JUNGMEISTER**

Plan price £11.75.

Plan No.017

Free flight scale replica of the radial cowled version of the classic biplane aerobatic aircraft 23.5" (600mm) span model suits Cox.020 motor or similar.



FSM Sept/Oct 1998



**BRISTOL M1C MONOPLANE**  
Plan price £11.75. Plan No.019

A 46.5" (1181mm) span free flight scale model of the British WW1 scout aircraft for 1.5cc motors. Can be converted to R/C.

AMI Sept 1996



**VOUGHT F4U CORSAIR**  
Plan price £12.50. Plan No.210

A 48.5" (1232mm) wingspan PSS glider model for aileron / elevator radio control

## DE HAVILLAND CLASSICS

**De HAVILLAND DH6**  
Plan price £14.50. Plan No.043



64" (1626mm) wingspan, 1:6.6 scale model of the Airco D.H.6 1917 Royal Flying Corps elementary trainer. Model is designed to take four function R/C systems and suits .45-.61 size motors and features simple, boxy construction. Two sheet plan.

FSM Nov/Dec 1998


**BLERIOT XI 1913 MONOPLANE**  
Plan price £14.50. Plan No.016



FSM Aug 2002

A 1/8th scale, 47" (1193.8mm) wingspan scale model of the 1913 military version of Louis Bleriot's famous machine. Two-sheet plan includes scale three-view and features accurate replication of the full-size structure. Designed for free flight, with 0.75-1cc motors.

**WOODSTOCK**  
Plan price £12.50. Plan No.239. Canopy £12.50



AMI March 2004

A quarter scale replica of a distinctive Australian high performance sailplane. Model features totally conventional balsa/ply construction. Features two-panel plug-in wings and removable tailplane. Wing span 116" (2960mm). Moulded cockpit canopy available.

**De HAVILLAND DH51**  
Plan price £16.50. Plan No.050



AMI Sept 1998

A 66 in. (1676mm) wingspan scale model for four function R/C systems and .40-.50 size motors. Two sheet plan.

## SCALE GLIDERS

**BERGFALKE**  
Plan price £17.50. Plan No.025



FSM Sept/Oct 2001

Quarter-scale 165" (4191mm) wingspan replica of the classic German sailplane from the pre-glass fibre glider era. An accurate-outline design by Chris Williams for rudder, elevator and aileron controls, plus spoilers.

**DFS - 230 A-1**  
Plan price £16.50. Plan No.049



AMI Dec 1997

A quarter-scale replica of the German WW2 troop carrying glider. Requires, rudder, elevator and aileron controls. Two sheet plan.

**De HAVILLAND DH60 MOTH**  
Plan price £19.50. Plan No.054



FSM Sept/Oct 1997

An 80 inch (2032 mm) wingspan, 1:4.33 scale replica for .90 - 1.20 cu. in. motors and four function radio control systems. Two sheet plan.

## PLANS ORDER FORM

FSM JUNE 10

Name.....  
Address.....  
Postcode.....

Please return this completed coupon together with your cheque made payable to:

Model Activity Press, 5 Chiltern Business Centre, 63-65 Woodside Road, Amersham, Bucks HP6 6AA



### Postage & Packing charges

Total Order Value	UK	Europe	W/Wide
Up to £10	£2.50	£2.95	£5.75
£10-£20	£5.00	£5.95	£9.00
£20-£50	£7.00	£8.50	£16.50

Allow up to 28 days for delivery

Overseas payments by credit/debit card please

MODEL NAME	PLAN NO.	PRICE

☐ I enclose a cheque for £..... made payable to MAP Ltd

☐ Charge my credit card for the total amount of £..... ☐ Visa ☐ Delta ☐ Switch ☐ Mastercard

Cardholder's Name:.....3 Digit security No.....

Card Number:...../...../...../..... Expiry Date:.....

Signature:..... Date:.....

P&amp;P

TOTAL



ORDER ON-LINE THROUGH OUR SECURE WEBSITE: [www.modelactivitypress.com](http://www.modelactivitypress.com)

# What happens when your business is not advertised?



# Nothing!!!

## To find out how advertising can help your business contact:

Lisa Dawson 01684 311514 email: [adverts@modelactivitypress.com](mailto:adverts@modelactivitypress.com)



# Flying Scale Models BINDERS

www.flyingscalemodels.com



(Allow up to 28 days for delivery)

**Archive your copies of FLYING SCALE MODELS magazine, in these top quality binders. Each holds 12 issues (1 year)**

Please send me.....FSM binder(s) at £9.50 each inc. postage and packing (overseas add £2 for surface mail) Please make cheques/PO orders made payable to  
**MODEL ACTIVITY PRESS LTD., 5 Chiltern Business Centre, 63-65 Woodside Road, Amersham, Bucks. HP6 6AA.**  
 Name:.....Address:.....  
 .....Postcode:.....  
 Credit Card  
 No.....  
 Expiry date/Issue no..... 3 Digit Security No.....

## FSM READER

**Send us a good colour photograph of your model and we will print it with your advert at no cost. Just complete a coupon and we will insert it in the next available issue(s)**

### FOR SALE

**CAP 24, 54"**, Irvine 40, red, white and blue scheme, v.good condition £105 ono.  
 Flair Magnatilla 60", OS40, antique & red solartex, maltese crosses, v.good condition £85 ono.  
 Cambrian Spitfire fun fighter 42", OS20, elevator, aileron, throttle, camouflage, good condition, super fun

machine, complete £60 ono. F4U Corsair 62", Irvine 60, retracts, navy blue, pilot, complete, immaculate, unflown, cost £500+, bargain £225 ono.  
 Tel: 01132 581292 (W.Yorks)

FSM3618

**MICRO FLAME MINI 30 COMPRESSOR**  
 and Badger 200 airbrush £65. Minicraft MB750 power supply £35. 12v jigsaw



### P-36 HAWK

Black Horse ARTF P-36 Hawk plus SC91 9 servos (separate retract batt) complete just fir 6ch Rx and fly.  
 Cost £315 give away bargain £140 collect only.  
 Newcastle.  
 Tel: 01912 527218



### SCHEIBE MU-13-D

1/4 scale 150" span lightweight scale sailplane from the Simon Pearce plan.  
 Little flown as new condition.  
 Any reasonable offer.  
 Tel: 07950 336104 (Staffs)



# @your service!!....WEB DIRECTORY

**Brentford R/C Centre**  
MAIL ORDER HOTLINE 020 8540 4804

2.4Ghz Radio  
Spare  
Brushless Motors  
Brushless ESC  
Lipo Batteries  
Chargers  
Trainers

**FREE**  
Delivery on  
ALL SPECTRUM  
RECEIVERS

**NEW**  
HELICOPTER SETUP  
SERVICE

ORDER ONLINE [www.brentfordrc.com](http://www.brentfordrc.com)  
FOR ALL THE LATEST RC MODELLING PRODUCTS

**MODEL ACTIVITY PRESS**

[www.modelactivitypress.com](http://www.modelactivitypress.com)

**Pegasus Models**

Norfolk's No1 Model Shop for  
R/C Planes, Helicopters & Boats

UK's LARGEST DISTRIBUTOR FOR BALSA USA & SIG KITS

Contact us on: Tel: 01603 419515  
Fax: 01603 484466, 88 Catten Grove Rd, Norwich, Norfolk, NR3 3AA

[www.pegasusmodels.co.uk](http://www.pegasusmodels.co.uk)

## TO ADVERTISE YOUR WEBSITE HERE...

**CONTACT: LISA DAWSON. TEL: 01684 311514**  
**EMAIL: [adverts@modelactivitypress.com](mailto:adverts@modelactivitypress.com) Skype: lisa.dawson1**

**Classifieds**

**JMP BALSA**  
Tel/Fax: 01692 692270, Mobile: 07798 008744  
[sales@jmpbalsa.co.uk](mailto:sales@jmpbalsa.co.uk)

You are a small order company, servicing the modeller with building materials in a large selection of metric ribbs, sheet, 5/16" & 5/8" balsa, plywood, glue, glue, glue and hardwood dowel

[www.jmpbalsa.co.uk](http://www.jmpbalsa.co.uk)

### CLASSIFIED ADVERTISING RATES:

Mono £12.00 Per column centimetre. Series discounts available on request. (Minimum 2cm),  
Trade Lineage 25p. per word, (Minimum 20 words) All advertisements are subject to VAT.  
Private Lineage (For Sale/Wanted etc) FREE OF CHARGE.

**CONTACT: LISA DAWSON. TEL: 01684 311514**  
**EMAIL: [adverts@modelactivitypress.com](mailto:adverts@modelactivitypress.com) Skype: lisa.dawson1**

## R EXCHANGE

£15, drill 4-6 £15. All plus post.  
**Tel: 0151 728 7293**

### WANTED

**ANY UNMADE PLASTIC KITS**, Airfix,  
Frog, Revell, Tamiya etc. Also Aviation/air-  
line books and collectables.

Write: 27 A, The Grove, Biggin Hill, Kent.  
TN16 3TA.

FSM0510

**GRAUPNER KIT** C/L Focke Wulf TA152  
or plans, also Kookaburra plans, Me109  
Dornier 335 C/L.  
Tel: 02476 382113. Richard.

FSM0510

**1/4 SCALE DB SE5a** airframe + 1/4  
scale Flair Fokker DR1 Triplane. Also for  
sale 2-4 seater light aircraft kit.  
Tel: 07875 822520 or 07501 140544.

FSM0510



### HANGAR 9 B-25J MITCHELL

80", 2+52 FS engines, Robart main retracts,  
Springair nose, 11 servos, on board glow, 3300mah  
Rx battery, price reduction £495  
Tel: 01692 404216.



### TUCANO

Peterborough Model Centre 78" Tucano. SuperTigre  
3000 engine, internal silencer, large euro kits air oper-  
ated retracts, all servos, superb demo model. Price  
reduction £350.  
Tel: 01692 404216.



# THE POWER OF FUSION



## Vector NX81

The Vector NX81 is an easy to use mains operated charger capable of charging 4-8 cell NiCad or NiMH batteries with selectable charge rates between 0.5 and 5.0 Amps with an automatic delta peak cut-off. It is also supplied with a range of Tx, Rx and Battery charge leads.

SRP £21.99



## Ethos LX41B Pro

### Integrated Balancer

The Ethos LX41B Pro is the perfect entry level AC/DC balanced charger, capable of charging 1-12 cell NiCd/NiMH and 1-4 cell Lithium packs.

SRP £49.99

40W



## Typhoon L50B Pro

### Integrated Balancer

The Typhoon L50B Pro is a small lightweight field charger for up to 5 Lithium cells and 14 NiCd/NiMH cells with integrated Lithium balancer.

SRP £44.99

50W



## Elysium LX60B Pro

### Integrated Balancer

The Elysium LX60B Pro is ideal for the club flyer. With both mains and 12V inputs, the Elysium is capable of charging up to 14 cell NiCd/NiMH packs and up to 6 cell Lithium packs with balancing and also includes discharge and cycling functions.

SRP £69.99

50W



## Eclipse LX61B Pro

### Integrated Balancer

The newly released Eclipse LX61B Pro is a high power charger giving 120 watts of power (90W mains), which is ideal for charging the new 5C charge rated lithium packs.

SRP £99.99

120W  
90W AC



## Emperor L702B Pro

### Twin Charger with Integrated Balancers

The Emperor L702B Pro is the ultimate choice for the professional modeller. With twin 300 watt chargers, the Emperor can charge two separate packs at up to 20 Amps per output!

SRP £199.99

600W  
300W Per Output

	Ethos LX41BP	Typhoon L50BP	Elysium LX60BP	Eclipse LX61BP	Emperor L702BP
Ni-Cd/NiMH	1-12 Cells	1-14 Cells	1-14 Cells	1-14 Cells	1-18 Cells x 2
Lithium-Poly-LiFe	1-4 Cells	1-5 Cells	1-6 Cells	1-6 Cells	1-7 Cells x 2
Lead Acid	-	2-12 Vols	2-12 Vols	2-72 Vols	2-24 Vols x 2
Charge Rate	0.1-4A	0.1-5A	0.1-5A	0.1-8A	0.1-20A x 2
Max Power	40W	50W	50W	120W	300W x 2
Discharge Rate	-	-	0.1-1A	0.1-5A	0.1-10A x 2
AC Input	100-240V	-	100-240V	100-240V	-
DC Input	11-15V	11-15V	11-15V	11-15V	11-20V

All Balanced Chargers have JST-EH Output (JST-XH & TMRP boards included)



## PS100

The PS100 is ideal for smaller chargers requiring up to 100 watts.

- Output Voltage: 13.8V DC Regulated
- Current Rating: 0-8A

SRP £16.99

100W



## PS200 Twin

With twin outputs, the PS200T has an LCD readout showing the current being supplied.

- Output Voltage: 13.8V DC Regulated
- Current Rating: 0-15A

SRP £34.99

200W



## PS600 ADJ

For those people requiring some serious power, the PS600 adjustable delivers 5-15 volts at up to 40 Amps!

- Output Voltage: 5-15V DC Regulated
- Current Rating: 0-40A

SRP £99.99

600W

LOGIC RC

Sold through all good model shops. Prices correct at time of printing E&OE.  
Distributed by Logic RC Limited, 14 Hartham Lane, Hertford SG14 1QN, United Kingdom  
Tel: 01992 558 226 • Fax: 01992 554 032 • Email: mail@LogicRC.com