

**FREE  
PULLOUT  
R/C PLAN  
WORTH £11.99**



**E-SHARK** EASY BUILD TAILLESS  
FOR FAST FLYING FUN!

www.rcmodelworld.com

OCTOBER 2015

# RC **MODEL WORLD**



## **GOING LARGE AT COSFORD**

**BIG JETS AND Warbirds SEEN AT THE LMA SCALE AIRSHOW**

**PLAN  
FEATURE!**

**DH BEAVER**

**OUR LATEST DE HAVILLAND  
FEATURES AN EXTRA STRONG FUSELAGE**



**The R/C Modeller's Magazine**

# Put Yourself in the Pilot's Seat

You don't have to be an electronics expert to see the world from an RC aircraft. Horizon Hobby FPV (First Person View) aircraft and systems make it easy.



## ADD THE THRILL OF FPV TO ANY MODEL

**Spektrum® VS1100 UMX™ FPV System**

- **Exclusive** Fat Shark Teleporter V4 headset with digital head tracking
- Spektrum® VA1100 Ultra Micro Camera
- LiPo headset battery, charger and lens cloth
- Y-harness power connector

## GRAB-AND-GO FPV FUN

**E-flite® UMX™ FPV Vapor™ RTF**

- **Exclusive** Fat Shark Teleporter V4 headset with digital head tracking
- Spektrum™ VA1100 Ultra Micro Camera, installed
- Compatible with all Fat Shark 5.8GHz FPV headsets
- Aircraft transmitter with Spektrum 2.4GHz technology
- Bind-N-Fly® version without transmitter and headset also available



**FPV**  
FIRST PERSON VIEW

**HORIZON**  
H O B B Y . U K

[horizonhobby.co.uk](http://horizonhobby.co.uk)

Find Your Local Store Online  
at [horizonhobby.co.uk/shopfinder](http://horizonhobby.co.uk/shopfinder)

**SERIOUS FUN.™**

Spektrum products are available from all good model shops. For details of your nearest dealer look on our website [horizonhobby.co.uk](http://horizonhobby.co.uk), contact us by telephone: 44(0)1279 641097, or by email: [sales@horizonhobby.co.uk](mailto:sales@horizonhobby.co.uk).

©2014 Horizon Hobby, LLC. E-flite, UMX, Vapor, Serious Fun and the Horizon Hobby logo are trademarks or registered trademarks of Horizon Hobby, LLC. The Spektrum trademark is used with permission of Bachmann Industries, Inc. All other trademarks, service marks and logos are property of their respective owners. 46888

**NEW!**

# F3A

# OLYMPUS

**A year in the making!**  
Introducing the new FMS  
F3A Olympus, the latest  
creation in the FMS  
Aerobatic line of models.

**With its elegant and graceful lines  
and superb flying qualities,  
the F3A Olympus is a must for the  
aerobatic pilot to add to the hangar.**  
**Working with RC Hobbyists  
worldwide, FMS have  
developed this aircraft  
to meet all the precision flying  
requirements needed to compete in  
F3A aerobatic competition.**

#### **SPECIFICATION:**

- Wingspan: 1400mm/55.1 in
- Overall length: 1548mm/61 in
- Flying weight: around 2400g (5.3lb)
- Motor size: Brushless 4258-kv550
- ESC: 60A with 5A SBEC
- Servo: 17g metal gear servo
- Radio: 4 channel (not included)
- Prop size: 15x8
- Recommended Battery: Li-Po 5S or 6S 3200mAh 30C
- Functions: Ailerons, Elevator, Rudder, Flaps
- Flying duration: approximately 6 minutes
- Required assembly time: 45 minutes
- Material: Durable EPO
- Recommended experience level: Intermediate

**FS0195 F3A Olympus £249.99 RRP**  
w/o TX/RX/Batt

**See the F3A Olympus in action:**



**Beautifully Crafted Foam ARTF Models**

**Fms**

**CML**

CML PRODUCTS ARE AVAILABLE IN ALL GOOD MODEL & HOBBY SHOPS. CHECK OUR WEBSITE FOR FULL DETAILS  
[WWW.CMLDISTRIBUTION.CO.UK](http://WWW.CMLDISTRIBUTION.CO.UK)

**E&OE**



# CONTENTS

**RC** **MODEL**  
**WORLD**

OCTOBER 2015 • ISSUE #381



## FRONT COVER

Steve and Matt Bishop amazed the crowd at this year's LMA model airshow at RAF Cosford with their Red Duo synchronised aerobatics using Hawk jets. Neil Hutchinson amazed us too with his pin sharp flying pics from this top summer event - see more in his report starting on page 82

## REGULARS

- 6 PRE FLIGHT**  
Introducing this issue
- 8 TAKE OFF**  
Latest R/C model flying news
- 12 SHOP WINDOW**  
A look at the latest R/C products
- 28 SCALE SOARING**  
This month Chris Williams goes aerotowing with the Ghost Squadron at Middle Wallop
- 77 LIGHT FLIGHT**  
John Stennard talks servos, German rocket planes and the indoor shenanigans at the recent South West Hobbies and Model Show



**28**

- 93 SOARERS' SLOT**  
Mike Proctor ponders the demise of the electric winch in favour of electric motors in competition gliding and then hops the channel to attend a French F5K event
- 110 DIARY DATES**  
End of season summer model flying events
- 113 THE SPORT CHANNEL**  
Gray writes on another selection of sport model topics

## REVIEWS

- 16 SPORTSMAN S+**  
Kevin Crozier tests the latest R/C trainer model technology from HobbyZone
- 34 THUNDER TIGER F75-S**  
Frank Skilbeck puts this smooth running four stroke engine through its paces by flying it in his Wots Wot biplane
- 46 GO FLY KITE**  
Bruce Corfe visits Singapore and discovers a whole new R/C regime - flying electric powered kites fitted with dazzling LEDs
- 98 LARK FPV**  
We flight test Udi's answer to on-screen aerial photography
- 106 IN PRINT**  
A review of the latest full size aviation books to add to your collection



**34**

## FEATURES

- 22 SCALE MODEL BUILDING FOR FUN**  
Whilst building his Fokker parasol plane, Peter Maw passes on some silver soldering, wing joining and attachment, and final finishing tips
- 38 WARBIRDS GALORE**  
Neil Hutchinson grabs his camera and jets state-side to visit the Military Air Museum, one of the best aviation museums in North America
- 52 DH BEAVER**  
Terje Gimming takes advantage of the Beaver's spacious fuselage to build in a box cage to help absorb the stresses and strains of heavy landings
- 58 E-SHARK**  
Build Graham Dorschell's simple to build 1030 mm span sports flying wing from 5 mm Depron. Suits a 1500KV outrunner and 3-function R/C



**16**



**77**

## 66 **BMFA HEAVY LIFT**

Bruce Corfe attends this annual model design and flying challenge for student engineers

## 72 **SPORT MODEL WING DESIGN**

In part two of his model design article, Bob Davis explains why shear webs are important and why dihedral might not be

## 82 **LMA AT RAF COSFORD**

Camera in hand, Neil Hutchinson reports on one of the best LMA events yet

## 90 **LADY IN RED**

In our new Model Spotlight feature, Mark Beacham turns his camera on a very unusual subject - a bright red Grumman Hellcat

## 102 **WOODSPRINGS WINGS 2015**

The Somerset club's annual model air show is another highlight on the yearly calendar. Vaugh Entwistle reports

## 111 **INTRODUCING THE HOBBY HUB**

All the background to Traplet Publication's new modelling website



52



102



90



38



58



82

# PRE-FLIGHT

**W**elcome to the October issue of RC Model World.

Following my review of the fabulous Wot 4 Foam-E Mk2+ kit in the August issue, I have been enjoying some great flights with this mini version of one of my all-time favourite sport models. In my review I recalled how I had enjoyed a spot of thermal soaring with the original Mk2 kit before its untimely demise, but that I hadn't managed to repeat the feat with the latest version.

Well last week that all changed and I managed to gently spiral this short span foam fun-flyer upwards in a big boomer. Once again a large raptor was my guide, and I only became aware of its presence from the shadow that swept past the ground in front of me as I was performing my usual repertoire of club aerobatics. Throttling back to let it cross my flight line, I was thrilled to catch it, out of the corner of me eye, starting a graceful thermal turn over the adjacent field. Needing no further prompting I directed the Wot 4 over to the same area, still at low throttle, and sure enough the wings started to bobble. And so, with the motor fully off, I started to ease her into a wide, slowly climbing turn. By this stage the elegant bird was way up high, and after another turn or two I called of the chase and brought the Wot 4 in for landing. A fabulous experience though, and even better than the time before.

Right, enough of my rambling. Let's take a look at what we have prepared for you this month. On review we have the intriguing Sportsman S+, a foam trainer that can literally fly itself from take-off to landing. We also flight test a smooth running Thunder Tiger F-75S four-stroke engine, and Ripmax have sent over one of their Udi Lark FPV drones for us to shoot some eagle eye views of the new Traplet offices.

Our features this month include the continuation of Peter Maw's short series on scale model building, and Bob Davis concludes his two-parter on designing and building a super strong sport model wing. Bruce Corfe reports from the BMFA's own university challenge, where students build and fly weight carrying model aeroplanes, and he also catches up on some unique R/C kites on a stop over in Singapore. Top photographer, Neil Hutchinson has been busy; first he reports from the Military Air Museum, one of the best aviation museums in North America before switching back to what he does best – photographing large scale models, this time at the LMA Cosford model airshow.

Our Free Plan this issue is the E-Shark, the latest in Graham Dorschell's range of foam sheet fun-flyers that can be built on a small kitchen table. And for our Feature Plan we turn to Terje Gimming, who has designed a sport-scale DH Beaver fitted with a fuselage cage for increased strength and durability.

There's lots more besides, and a few regular columns too to enjoy, so please sit back and enjoy. Until next time...

Happy flying!

Kevin

**Kevin**

Have you seen our other modelling magazines?



Find out more at [www.trapletshop.com](http://www.trapletshop.com)



## Kevin Crozier

Editor | Radio Control Model World

Contact me either by post:

RCMW Editorial Office,  
Traplet Publications Ltd  
Willow End Park, Blackmore Park Rd,  
Malvern, WR13 6NN. UK  
or email: [rcmw@traplet.com](mailto:rcmw@traplet.com)



### Digital Edition

Scan the code with your Smartphone to download your favourite magazine or go to [www.pocketmags.com](http://www.pocketmags.com)

CHECK OUT  
PAGE 32  
FOR OUR LATEST  
SUBSCRIPTION  
DEALS

## RC MODEL WORLD

### Group Editor

Kevin Crozier [rcmw@traplet.com](mailto:rcmw@traplet.com)

### Editors

Tony van Geffen Vaughn Entwistle

### Contributors

Peter Maw, Chris Williams, Frank Skilbeck, Neil Hutchinson, Bruce Corfe, Terje Gimming, Graham Dorschell, Bob Davis, John Stennard, Mark Beacham, Mike Proctor, Vaughn Entwistle, Gray

### Managing Director

Tony Stephenson

### Operations Director

Tom Stephenson

### Design and Production Manager

Nick Powell

### Designer

Nick Powell

### Advertising Sales

Mel Penkoks Tel: 01684 588510

email: [melanie.penkoks@traplet.com](mailto:melanie.penkoks@traplet.com)

### Marketing

email: [marketing@traplet.com](mailto:marketing@traplet.com)

### Advertising Copy Controller

Cindi Griffiths Tel: 01684 588517

email: [adc@traplet.com](mailto:adc@traplet.com)

### Trade Sales Executive

Angela Price Tel: 01684 588568

email: [angela.price@traplet.com](mailto:angela.price@traplet.com)

### Printer

Warners plc

### Newsstand Distribution

Seymour Distribution Ltd. (020 7429 4000)

### US Distribution

Traplet Distribution USA Ltd, 806 Parkland Ct,

Champaign, IL 61821, USA.

Tel: (001) 217-355-2970

Email [info@traplet.com](mailto:info@traplet.com)

### Australian Distribution

Traplet Publications & Hobbies

P.O. Box 501, Engadine,

NSW 2233, Australia.

Tel: (02) 9520 0933

Fax: (02) 9520 0032

email: [sales@traplet.com.au](mailto:sales@traplet.com.au)

### South African Distribution

Traplet Publications South Africa, PO Box

1067, Oudtshoorn, 6620, South Africa

Telephone: (044) 272 5978

Email: [southafrica@traplet.com](mailto:southafrica@traplet.com)

### Published by

Traplet Publications Limited,

Traplet House,

Willow End Park, Blackmore Park Road,

Malvern, WR13 6NN. UK

Tel: 01684 588599 Fax: 01684 578558

email: [info@traplet.com](mailto:info@traplet.com)

### Subscription

Ally Alldritt email: [ally.alldritt@traplet.com](mailto:ally.alldritt@traplet.com)

1 Year subscription prices:

UK £54.00 W/Wide £77.40

USA & Canada US \$163.32

Europe £77.16

2 Years subscription prices:

UK £108.00 W/Wide £154.80

USA & Canada US \$326.64

Europe £154.32

### BACK ISSUES

UK £4.30/US \$9.99

Order Hotline: 01684 588599

Online Ordering: [www.trapletshop.com](http://www.trapletshop.com)

**TRAPLET**

PUBLICATIONS  
©2015 Traplet Publications Limited. All rights reserved.



This magazine is sold subject to the following conditions: that it shall not without written consent of the publishers be lent, resold or otherwise disposed of by way of trade in excess of the recommended maximum retail price. All rights strictly reserved. No part of this publication may be reproduced in any way without the prior agreement of the publisher. All letters must be accompanied by the sender's full name and address. The publisher cannot accept responsibility for unsolicited correspondence nor some of the opinions expressed. All material and artwork originated by Traplet Publications Ltd., photographs, drawings, plans used in this magazine become the publishers copyright under Copyright law. Some photographs may have been digitally re-mastered. The Company reserves the right to suspend or refuse any advertisements without giving reasons. Whilst every care is taken to avoid mistakes, Traplet Publications Ltd. cannot be liable in any way for errors or omissions. Nor can the Publisher accept any responsibility for the bona fides of advertisers.  
© Traplet Publications Limited 2015 ISSN 0268-3342

# HIGH PERFORMANCE/FUEL EFFICIENT FOUR-STROKE GAS/PETROL ENGINES FROM **SAITO**

**SAITO**

SAITO HAVE PERFECTED FOUR-STROKE ENGINE TECHNOLOGY FOR RC MODEL AIRCRAFT. USING A UNIQUE ONE-PIECE HEMISPHERICAL HEAD DESIGN, THEY PRODUCE POWER-TO-WEIGHT RATIOS THAT ARE SUPERIOR TO ANYTHING ELSE IN THEIR CLASS.



## FG-11

BORE: Ø27.0MM  
STROKE: 19MM  
DISPLACEMENT: 10.9CC  
WEIGHT (APPROX): 725G



## FG-14C

BORE: Ø29MM  
STROKE: 20.4MM  
DISPLACEMENT: 13.8CC  
WEIGHT (APPROX): 528G



## FG-17

BORE: Ø29.0MM  
STROKE: 26MM  
DISPLACEMENT: 17.2CC  
WEIGHT (APPROX): 770G



## FG-21

BORE: Ø32.0MM  
STROKE: 26MM  
DISPLACEMENT: 20.91CC  
WEIGHT (APPROX): 1042G



## FG-30B

BORE: Ø36.0MM  
STROKE: 28.6MM  
DISPLACEMENT: 29.1CC  
WEIGHT (APPROX): 1140G



## FG-36B

BORE: Ø38.0MM  
STROKE: 32.0MM  
DISPLACEMENT: 36.29CC  
WEIGHT (APPROX): 1260G



## FG-40

BORE: Ø40.0MM  
STROKE: 32MM  
DISPLACEMENT: 40.2CC  
WEIGHT (APPROX): 1715G



## FG-57TS

BORE: Ø36.0MM X 2  
STROKE: 28MM X 2  
DISPLACEMENT: 57.0CC  
WEIGHT (APPROX): 2430G



## FG-19R3

BORE: Ø22.4MM X 3  
STROKE: 16.2MM X 3  
DISPLACEMENT: 19.18CC  
WEIGHT (APPROX): 950G



## FG-33R3

BORE: Ø27MM X 3  
STROKE: 19.2MM X 3  
DISPLACEMENT: 32.98CC  
WEIGHT (APPROX): 1730G



## FG-60R3

BORE: Ø32MM X 3  
STROKE: 25MM X 3  
DISPLACEMENT: 60.32CC  
WEIGHT (APPROX): 1800G



## FG-84R3

BORE: Ø36.0MM X 3  
STROKE: 27.6MM X 3  
DISPLACEMENT: 84.28CC  
WEIGHT (APPROX): 3528G

[WWW.MACGREGOR.CO.UK/SAITO.HTM](http://WWW.MACGREGOR.CO.UK/SAITO.HTM)

Saito Petrol Engines  
are available from all  
good MacGregor  
Stockists



MacGregor Industries  
World Class Products • Excellent Service



[www.macgregor.co.uk](http://www.macgregor.co.uk) • [www.hobbyplastic.co.uk](http://www.hobbyplastic.co.uk)

Find Us On:



# WESTON PARK IN THE DARK

A new night flying model spectacular, to be held in the grounds of the stately home, is set for Saturday night, 17th October 2015. Top display pilots will be flying both helicopter and fixed wing aircraft with laser/ strobe lighting and pyrotechnics attached, all flying to music. The supporting fireworks display will add to the entertainment. Daytime flying will start at 10 am, with general off the peg flying followed by two separate shows. The early show starts at 5.45 pm to cater for families with young children, followed by a late show, which starts at 7 pm. Hot food will

be available from the on-site catering.

After the show there will be a disco and bar in a heated marquee. On-site camping for Friday and Saturday will be on offer and includes the Saturday entertainment. A good trade line is also expected.

Weston Park is located at Weston-under-Lizard, near Shifnal, Shropshire, TF11 8LE.

For more information please contact Steve Bishop at: [stevenbishop@blueyonder.co.uk](mailto:stevenbishop@blueyonder.co.uk) or telephone: 01952 587298, 0775 8895068.

Alternatively, visit the show website: [www.westonparkmodelairshow.co.uk](http://www.westonparkmodelairshow.co.uk)



Picture courtesy Global Aviation Resource

# CONTRARIAN LOVES CONTRA-ROTATION

Colin Leighfield writes regarding Dave Chinery's article on contra rotating propellers in the September issue:

*"I was very interested in Dave Chinery's feature 'On the Contrary' because I have been interested in contra-rotating props and designed and built this 53" span own*

*design Douglas XB42 Mixmaster, 1/15.5 scale. I have used the HK 1550 kV coaxial motor combination that he shows in his feature, although mine uses GWS 7 x 3 1/2 blade props rather than 8 x 4 two blades. It works very well with these props and is a great flyer.*

*In recent years I have been in touch with*

*Chris Golds because he is always looking for photos to use in his Q&EFI feature 'The Light Fantastic' and I have copied these to him as well.*

*I met Dave a few years and gave him an almost completed Westland Welkin that I had designed and he finished and flew it."*



# YOU'VE GOT A FRIEND

Roger Wheddon, designer of the Marlin aerobat plan featured in the August issue, writes in with a small correction:

*"Hi Kevin*

*You made a good job of the Marlin article – thanks. I made a typo in crediting the electric setup. It should have been Ian Taylor, not James! A tiny correction next month would keep me out of trouble!"*

*Glad to help, Roger.*



# HUNT'S MODELS IN SOUTH CROYDON

Regular correspondent and Traplet plan designer, Mike White, based in the Isle of Man, also writes in about a topic covered in the August issue:

"Dear Kevin,

*In regards to the August issue's 'On with the Show' by Dave Bishop. Nostalgia indeed. He mentions a Flt. Lt. Hunt's five function R/C receiver. In the 1940s (1942 to late '40s, before I went into the RAF and later emigrated) there was a model shop in South Croydon named Hunts Models where I used*

*to get my supplies. I remember a rather large Hurricane model hanging in the window for many months – possibly a quarter scale? I was very envious!*

*I seem to remember that I heard mention of a Flt. Lt. Hunt as being the owner of that shop. Could that have been the same Flt. Lt. Hunt? I wonder if there are anyone in the Croydon Club who remembers the shop and that Hurricane?"*

The model shops of our youth, with practically one in every town, still have a

fond place in the hearts of many lifelong aeromodellers (my own was The Model Shop in Maidstone; a large Schlüter Cobra helicopter 'hovered' overhead as we waited patiently in the queue to buy a fresh can of diesel or a pot of dope). Sadly all but a very rare few are long gone now, and more modern model retailers are all too few and far between. If you have one nearby then thank your lucky stars and please try to give them some custom.

## MULTIPLEX ACQUIRE ROBBE POWER PEAK AND ROXXY

Subsequent to the insolvency of Robbe, Multiplex is to take over the Power Peak and Roxy brands. The move will ensure that this well-established range of electronic products continues to be available to modellers. And, of course, their products will continue to be expanded progressively.

Power Peak is a byword for modern, high-quality battery charging technology, while the Roxy brand is renowned for brushless motors, innovative speed controllers for

model aircraft and LiPo batteries.

Dieter Wörner, Managing Director of Multiplex Modellsport comments:

*"We are delighted to be able to maintain the presence of these successful brands in the marketplace and will do everything we can to make the entire range of products available again over the next few months. Naturally we will also continue the usual service arrangements for the Power Peak and Roxy products supplied by Multiplex."*

# SVANTEK SOUND METER EARNs ITS WINGS AT THE BMFA

The compact and ultra-lightweight SVAN 971 sound level instrument is helping to assist clubs and protect model aircraft flying sites.

Svantek, a world leading manufacturer of occupational health and environmental noise and vibration monitoring instrumentation, has supplied a compact, ultra-lightweight SVAN 971 sound level meter to the British Model Flying Association (BMFA), where it is being used to help assist clubs with environmental noise related issues and to ensure the long-term protection of model aircraft flying sites.

Andy Symons from the BMFA comments:

*"The purchase of the Svantek SVAN 971 sound level meter means we are now able to provide assistance to member clubs with noise related problems. We were recommended to Svantek by acoustics and noise control consultant, Gordon Brown MIOA. As we are mostly monitoring environmental noise impact of model aircraft, our main requirement was the ability to integrate the sound level meter with 1/3 octave real-time analysis. This means readings can be made quickly and none of the octave bands miss any of the noise during the measurement period. The SVAN 971 instrument fitted the bill perfectly."*

As well as the SVAN 971 sound level meter, Svantek has also supplied BMFA with a robust carry case with IP65 protection level, a five-metre microphone extension cable and outdoor windshield.

Svantek's well-proven SVAN 971 is a class 1 sound level meter (IEC 61672:2002) ideal for acoustic, occupational health and safety and environmental noise measurements. It is easy to use with predefined set ups and is operated using a simple Start/Stop mode. There are options for 1/1 or 1/3 octave real-time analysis.

Other key features include advanced time-history logging, microSD memory card with extensive logging capacity and OLED colour display with excellent brightness and contrast. It also offers noise dose measurements, voice comments recording, optional audio recording and self-vibration monitoring.

Andy adds:

*"Measurements are made as and when required by our clubs and reports are collated by me using Svantek's Supervisor software tool. The SVAN 971 has proved reliable and accurate, as well as extremely easy to use especially with the related software. The service from Svantek has also been very good."*



**If you have any news or special interest announcements to make, or even a recently completed RCMW plan design, then why not drop RCMW a line or email [RCMW@traplet.com](mailto:RCMW@traplet.com)**

hobbyzone®

GLASAIR SPORTSMAN S+ Ready To Fly  
with AutoLand Feature

£269.99



Version 1  
£239.99

**Loaded with  
Hi-Tech Features**

AutoLand  
Holding Pattern  
Instant Flight Recovery  
Virtual Fence  
HD Camera Ready  
Full Range DX4e radio  
1300mAh Li-Po  
Long Flight Times  
One Box Purchase

Learn at your own pace!

Take to the skies without hesitation  
and teach yourself to fly with the  
HobbyZone® Sportsman S+.  
The Sportsman S+ comes with  
everything you need to fly and SAFE  
Plus technology allowing anyone to  
take the sticks and learn to fly with  
confidence.



**HANGAR 9**

Corsair F4U-1A 20cc ARF

Authentic scale outline  
Jimmy radial engine  
Extensive panel line detail  
Top quality construction  
3-panel flaps  
Ready for optional electric rotating retracts  
Ready for Evolution™ 20GX gas/petrol engine  
Electric power ready  
Complete, high-grade hardware package included

£329.99



**J3 Piper Cub .40 ARF**

Accurate scale outline  
Authentic Cub colour scheme  
Aluminum undercarriage  
Scale "balloon" Cub wheels  
Bolt on "airfoil" wing struts  
Scale flying characteristics  
Two-piece wing  
for easy transport  
Bolt on rear stabilizer

£183.50

**HANGAR 9**



Hobbyzone Champ RTF

£49.99



E-Flite Night VisionAire BNF

£159.99



E-Flite UMX Yak 54 AS3X BNF

£54.99



E-Flite P-47D Thunderbolt BNF Basic

£159.99



**SPECIAL**

E-Flite Viking Model 12 BNF

£124.99



**OFFERS**

Limited Time Offers & Whilst Stocks Last

E-Flite UMX Whipit DLG

£64.99



E-Flite Carbon-Z Yak 54 3C PNP

£159.99



Hobbyzone Delta Ray RTF

£99.99



Hobbyzone F4U Corsair S RTF

£184.99



**Maxford USA**

Rumpler Taube EP 64"



£207.99

Globe Swift EP 56"



£154.99

Maxford USA have put together a highly desirable selection of Almost Ready To Fly scale models

Curtiss Pusher 50"



£175.99

Aircro DH.2 1/6 50"



£151.99

1/5 Scale PT-17 Stearman



£305.99

Nieuport 17 EP Electric 60"



£169.99

1/5 Albatros D.Va Electric 70"



£269.99

Piper Cub J3 ARF V2 1/6 71"



£124.99

Fieseler Fi-156C Storch 63"



£159.99

PT-17 Stearman EP 50"



£124.99



## ESC and Brushless Motors

8amp Brushless ESC With Bec  
**£9.99**

16amp Brushless ESC With Bec  
**£12.99**

14amp Brushed ESC  
**£8.99**

25amp Brushed ESC  
**£9.99**

50amp Brushed ESC  
**£12.99**

300 Breeze BL Motor RPM:1100  
**£9.99**

300 Gust MS BL Motor RPM:1820  
**£12.99**

400 Wind MN BL Motor RPM:930  
**£12.99**

370 Gust MN BL Motor RPM:1380  
**£12.99**

400 Wind MN BL Motor RPM:930  
**£12.99**

400 Wind MT BL Motor RPM:760  
**£12.99**



## High Quality Petrol Engines

26cc  
£119.99

45cc  
£123.99

62cc  
£149.99

**Hurry!**  
Limited Stocks



## All New TYPHOON Q500+

AERIAL AND GROUND IMAGING SOLUTION



Personal Ground Station



3 Axis Gimbal Camera

16 Megapixels still photos & Full HD Video



Includes 2 batteries charger, 8GB SD Card and Aluminium Carry Case

SteadyGrip

Carry Case

**£899.00**



## New Chroma AP Combo



Go Pro Ready Version available Call Now  
Flight-Ready Chroma Quadcopter with Stabilized CG03 4K Camera ST-10+ Controller, Long-Lasting 5400mAh Battery & Charger

USB Programmer Cable included

**£999.00**

Touch Screen Display

## DJI Phantom YOUR FLYING CAMERA

### PHANTOM 3 Professional



Flight Battery included

Other Versions Available. Call for Best Prices

Imagine capturing content fit for the big screen, with crisp images, beautiful resolution, and vivid colors. Integrated, stabilized camera, brings your imagination to life

4K Camera  
12 Megapixel Photo Camera

**£1150.00**

Live HD View  
Dedicated Remote



Each Evolution petrol engine is purpose-built for model airplanes with low operating costs

### EVOE10GX

10cc with CDI Electronic Ignition

**£152.99**

### EVOE15GX2

15cc (.91) with pumped carburettor

**£189.99**

### EVOE20GX

20cc with CDI Electronic Ignition

**£209.99**

### EVOE20GX2

20cc (1.20) with pumped carburettor

**£209.99**

### EVOE26GX

26cc Equivalent to 1.20 or 1.80 glow engines

**£249.99**

### EVOE33GX

33cc with CDI Electronic Ignition

**£289.99**

### EVOE40GX

40cc Side Exhaust Layout without muffler

**£296.99**

### EVOE62GXI

62cc with EFI Electronic Fuel Injection

**£494.99**

### EVOE50GX

50cc Rear Intake Design for High Power

**£467.99**

### RADIAL 4 STROKE PETROL ENGINE 160CC

Four Stroke 7 Cylinder

**£2160.99**

### RADIAL 4 STROKE PETROL ENGINE 260CC

Four Stroke 7 Cylinder

**£2299.99**



Extensive range of RTF and ARF Scale, Aerobatic, Trainer and Performance Models, Crafted to Exacting Standards

### Hangar 9 Inverza 62 ARF

**£617.99**

### 1/4-Scale PA-18 Super Cub ARF

**£514.99**

PNP Version £1099.99

### DHC-2 Beaver 30cc ARF

**£599.99**

### Cirrus SR22T 30cc ARF

**£599.99**

### Super Decathlon 100cc ARF

**£995.99**

### F4U-1D Corsair 60cc ARF

**£874.99**

### ASW 20 4.7m ARF

**£829.99**

### Spitfire Mk IXc 30cc ARF

**£574.99**

### P-51D Mustang 40 ARF

**£148.99**

### BF 109 F-2 .60 ARF

**£224.99**

We Accept PayPal and All Major Credit and Debit Cards



Al's Hobbies Stores open Monday - Saturday 10am - 6pm. Closed Sundays. On-Line Shopping 24 hours at [www.alshobbies.com](http://www.alshobbies.com)

# SHOP WINDOW

## UMX F-16 EDF



With this micro jet you'll enjoy four-channel control with an operational rudder and full-flying horizontal stabilisers that provide both pitch and roll control for this 295 mm wingspan model. A steerable nose wheel helps you manoeuvre on the ground and in the air and AS3X technology makes this small EDF perform like a much bigger jet aeroplane. The F-16 features a 13500 KV motor, a brushless Delta-V 180m electric ducted fan unit, removable landing gear and an officially licensed Lockheed Martin F-16 body design.

## HOBBYZONE ZUGO



The Zugo is a compact and durable drone that features auto flip functions, directional commands, integrated LED lights and three flight levels to

progress through. The Zugo also makes entering into the exciting world of aerial photography easy with an integrated camera that can capture 2-megapixel photos and 720p HD video. The Zugo drone comes with a 2.4 GHz Tx, 2 GB memory card and a USB card reader, rechargeable 380 mAh LiPo and four AAA batteries.

## E-FLITE ULTIMATE2



A high power-to-weight ratio, plus high-quality components are all part of this new biplane with an aggressive 3-D flight personality. The E-flite Ultimate2 biplane has a 954.4 mm wingspan and features four enormous ailerons that offer blinding speed in rolls, while the massive elevator and rudder surfaces make spin and snap manoeuvres wild looking but also predictable. The included Spektrum AR636A receiver adds a high level of flight precision due to the inclusion of AS3X technology that has been specially tuned for this model.

**For more info visit [www.horizonhobby.co.uk](http://www.horizonhobby.co.uk)**

## IMAX RC X400



The IMAX X400 Twin Touch Screen Charger is easy to use and utilises a 4.3" TFT touch screen with backlight. The IMAX

X400 is able to charge at up to an impressive 400 W (single battery only, two batteries 200 W max each). It is capable of charging/balancing up to 6 LiPo cells, 16 NiMH cells and up to 10 Pb cells (20 V). It has a high precision dual-core 32 bit ARM processor for smoother operation and also features a USB port (5 V, 1 A) specially designed to charge iPhones and other smartphones.

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

## ROBAN ART PHANTOM 2 FUSELAGES



These completely new airbrush painted hop up canopies are now available for the Phantom 2 series drone. Give your drone a new look and feeling by changing its skin. All you

need is a screwdriver and 30 minutes of patience to transfer the electronic components. The product comes with a detailed instruction manual, making it a simple task that anyone can do.

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

## SPARMAX SP-35C



The SP-35C is a dual-action airbrush for full control of air and fluid – press the trigger down for air and back for fluid. But the airbrush can be converted into a simpler single-action action airbrush by fitting the alternative valve, which allows the air through all the time and you only pull back to control the amount of fluid. Priced at £45, it comes with a two year warranty. Features 0.35 mm nozzle and needle set up, gravity feed with 0.7 oz fixed cup with lid. Extra Crown Cap and cleaning brush included.

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

# Our pick of the latest R/C kits and accessories

## DREMEL KITS



Available in Bronze, Silver and Gold options, each Dremel Christmas kit includes one of Dremel's best-selling 3000 Multitool alongside a range of versatile and interchangeable accessories. The Silver and Gold

kits also include a selection of Dremel's patented and high quality EZ SpeedClic accessories which can be changed easily in just three simple steps – Pull, Click, and Twist – without using any tools. The Gold kit also comes with a strong aluminium toolbox, which means you can keep everything ready to use when you need it. Bronze: £39.99, Silver: £79.99, Gold: £99.99.

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

## SEAGULL FUNKY CUB



The Funky Cub was designed with the beginner and sport flyer in mind and, as such, is a high-wing aeroplane that's easy to fly and quick

to assemble. The airframe is conventionally built using quality balsa and plywood parts to make it stronger than the average ARTF. The 1800 mm wingspan Cub is supplied Almost Ready To Fly so you'll find that most of the work has been done for you. Features a two-part wing, pre-applied Oracover film, painted glass fibre cowl and wheel spats and comes with all hardware.

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

## REVELL CONTROL MAGIC GLOW HELI



This beginner friendly 3-channel co-axial helicopter from Revell Control features glow in the dark painting and bright, built-in LED lighting making it easy

to track in flight. The Magic Glow comes with a built-in 3.7 V 120 mAh LiPo, 2.4 GHz Tx and a set of spare blades. Suitable for indoor and outdoor use. Tx batteries not included.

[www.revell-control.de](http://www.revell-control.de)

## NINE EAGLES GALAXY VISITOR 6 FPV QUADCOPTER



The Nine Eagles Galaxy Visitor 6 is a lightweight and versatile FPV drone with lots of the latest features. Armed with an onboard 720p HD camera, the GV6 transmits its image

directly to your smartphone or tablet via WiFi. The GV6 is very easy to fly and extremely stable thanks to the 6-Axis Gyroscope and the unique Altitude Sensor. The futuristic plastic shell makes this quadcopter very tough, making it an ideal drone for beginners. £119.99 RRP

## FMS SUPER EZ TRAINER



FMS has introduced a new multi-purpose trainer, the Super EZ. This all-rounder has a 1.2 m wingspan, low wing loading and light construction. With its metal landing gear

the Super EZ is claimed to have excellent trainer aircraft flight characteristics. It needs no glue during assembly, making it ideal to transport to and from the flying field. RTF £149.99 RRP, ARTF £119.99 RRP.

## DYNAM PBY CATALINA



The Dynam Catalina has been designed to be simple to assemble, operate and rewarding to fly. Sedate scale flight or much more aggressive aerobatics are made possible with the extremely potent twin 1100 KV brushless motor combination. The large battery compartment is easily accessed and will hold a 2200 mAh 4S LiPo with ease, but CML say it will also fly very well on the smaller 3S sized packs. The Catalina features high quality scale detail, high-strength EPO foam and a nicely sized 1.4 m wingspan. £154.99 RRP

For more info visit [www.cmldistribution.co.uk](http://www.cmldistribution.co.uk)



# This Plane Can **LAND ITSELF**



## THE HOBBYZONE<sup>®</sup> **SPORTSMAN S+**

You know the cliché, “the hardest part of learning to fly is landing”. Not anymore. The Sportsman S+ is rewriting the book on RC piloting with SAFE™ Plus technology. Flying the Sportsman S+ feels just like learning with an instructor thanks to enhanced features that give assistance when pilots need it most. When activated, Autoland will return the Sportsman S+ to its takeoff location and land the aircraft using GPS-enabled spatial recognition. You'll still be able to influence the Sportsman S+ controls to avoid obstacles and to counter the effects of wind while SAFE plus takes care of the rest.

- AutoLand actively assists with landing with minimal to no pilot input
- Holding Pattern returns aircraft to a fixed point and flies in a pattern
- Virtual Fence keeps aircraft within a comfortable flying range and eliminates fly-aways
- Instant flight recovery with Panic Recovery Mode
- AS3X™ automatically counters the effect of turbulence
- Beginner, Intermediate, and Experienced modes make learning to fly easy
- Compatible with the EFC™-720p HD video camera (EFLA801)

ENGINEERED WITH  
**SAFE<sup>®</sup>+**

### Available in:

**Ready-To-Fly (HBZ8400UK)**

**Bind-N-Fly (HBZ8480UK)**  
(Transmitter not included)

Wingspan: 1390 mm (54.6 inch)

Length: 908 mm (35.8 inch)

### Flying

Weight: 950g (33.5 oz)

Motor: 480 Brushless

Battery: 3S 1300mAh

Charger: DC Powered 3S Balancing  
with AC Adapter

# LX B-25 Mitchell Bomber

**NEW!!**

**Large 2m Wingspan**

**RTF (READY TO FLY) £618.00**

**ARF (ALMOST READY TO FLY) £538.00**



- Large Electric High Scale Model
- Radio Controlled 2.4GHz, 12 Channel Warbird (Aileron, Elevator, Rudder, Throttle, Flaps, Retracts with Doors, Bomb Drop with Doors, Disc Brake Control System)
- World's Largest and Most Scaled B-25 Mitchell Bomber on the market!
- Patented unique working landing gears with disc brakes
- Configured with reliable high performance 15g digital metal gear servos
- Durable reliable servoless heavy duty metal screw retracts
- Durable high scale rubber landing gear wheels
- Working high-scale flaps
- Working high-scale navigation lights
- Working bomb drop with doors
- Constructed of EPO Flex Foam for excellent impact resistance
- Excellent smooth flying characteristics, just like the real warbird



Available from your local model shop or you can order direct, Free delivery within UK Mainland.

Tel: 01276 857107 Email: [sales@surreymodels.co.uk](mailto:sales@surreymodels.co.uk) Check out our High Scale Jets and Warbirds at our New Website: [www.surreymodels.com](http://www.surreymodels.com)

SURREY MODELS, Unit 8, Bourneside Industrial Estate,  
Station Road, Chobham, Woking, Surrey, GU24 8AS UK.  
SURREY MODELS UK Sole Distributor for LX Models



# SPORTSMAN S+

*Kevin Crozier tests a new trainer from Hobbyzone that can literally fly itself!*



*A super looking semi-scale example of the full size. Picture by Kevin Crozier*

I had the pleasure of flying Horizon Hobby's original Glasair Sportsman trainer when helping to train a colleague in the Traplet customer service office how to fly. And I remember it as being a pretty darned good trainer and perfect for 'buddy box' style teaching, where the instructor's R/C transmitter (Tx) is linked to the student's Tx using a wire lead (or even wireless, if you share a pair of the very latest transmitters!).

Roll on a couple of years and the Sportsman is back in a new version, this time without the Glasair name and with S+ added as a suffix. S+ stands for SAFE+ and is the latest version of the Sensor Assisted Flight Envelope (SAFE) R/C systems

that Horizon have been equipping various model with in the past year or so. I first came across SAFE in the nimble Hobbyzone F4U Corsair S, in which it can be set to tame the foam warbird so that it is very easy to fly, even for novices, as well as being equipped with a Panic Button, which when pressed will return the aircraft to upright level flight, even if it is spiralling towards the ground! This works a treat and whenever I fly this model I always end up flicking the SAFE switch into Beginners mode and guiding the model around on low throttle and using rudder only, like a radio assisted free flight model, and leaving the SAFE tech to take care of the ailerons to keep the wings level – most relaxing...

Anyway, back to the Sportsman S+. In this model the SAFE system has evolved and is now combined with GPS sensors to offer AutoLand technology, Panic Recovery mode, a Virtual Fence and the ability to fly an autonomous Holding Pattern. It's all very intriguing and for the most part it works extremely well. But this is one model where it is absolutely imperative to RTFM (Read The Flippin' Manual) BEFORE you attempt to fly the model – even if you think you are the world's best, most experienced R/C pilot. Make that ESPECIALLY if you think you are the world's best, most experienced R/C pilot! If you pay little or no attention to the manual then you are asking for a very tricky first flight, as I was about to find out! But more on this later.



*Sportsman S+ is simple to fly, made even more easy by some clever GPS safety features. All flying pictures by Tony King*

### RTF Treat

Our sample was the Ready To Fly version, in which the airframe comes complete with a pre-installed Spektrum radio system and a matching, pre-bound DX4e transmitter. Tucked in behind the wing seat is the GPS Module, which is at the heart of the SAFE+ system. This four channel model is controlled with pre-installed PK1060 mini servos on the ailerons (two off) and a PK1090 controlling the rudder and steerable noseleg. The 480 brushless outrunner in the nose is rated at 960 KV and is powered by a 3S 1300 mAh LiPo battery via an 18 A speed controller. A 12 V cigar lighter style DC balance charger is also supplied, together with an AC adapter, so you are not just limited to charging the LiPo in your car.

If you already own a Spektrum transmitter then you can opt for the Bind 'N' Fly version, which also comes with all of the above, excluding the Tx. The comprehensive illustrated manual includes a set up page for other popular Spektrum radios and this worked well when I decided to swap over to my DX6 in order to benefit from a countdown timer. The only fly in

the ointment is that the trainer button is allocated to the Holding Pattern/Auto Land facility, so it is not possible to buddy box with this aeroplane, which seems a bit of a step back for a trainer, especially considering all the advances in buddy box systems (i.e. wireless) that are available with the latest Spektrum radios.

I appreciate that in an emergency all that the instructor (or a solo tyro pilot) has to do is to press the panic button to initiate the Holding Pattern and then grab the transmitter back, like we did way back when, but many club instructors will still prefer to be able to instantly gain control of a wayward model using a buddy box master Tx.

### Quick Assembly

Sportsman S+ assembles in four easy steps:

- Screw on the ready made main undercarriage, complete with spats.
- Slot in and secure the tailplane with the adhesive strips supplied. (Looks like it shouldn't work but it does!)
- Fit the elevator clevis to the elevator control horn.

- Band on the wing using at least three of the rubber bands supplied on each side, secured in an X fashion across the top of the wing. I used eight bands for safety. The ready made wing has plastic mouldings at the front and rear, where it matches the wing seat perfectly, so you can add another couple of wing bands without fear of crushing anything. The wing dowels are fitted with plastic end caps, which have a large diameter crown at their ends, so preventing the bands from slipping off.

Scale effect is provided by a pair of plastic wing struts, which are secured with self-tapping screws to the bottom of the wing, and held in place on the fuselage using plastic ball joints. The plastic balls are great for popping the struts on and off when rigging the model before and after flying. The only drawback is that the wing has to be transported and stored with the two struts attached; you could take them off but I'm not sure how long the plastic mouldings that the screws thread into would last.

All that remains to do is to centre all the control surfaces. This is best done with



Very few parts layout for quick assembly. Assembly pictures by Tony van Geffen



Quality accessories, with small parts bagged



Spektrum receiver and all servos are factory installed



The GPS module is mounted in the fuselage behind the wing

the trims on the transmitter set to neutral (middle position) and then adjusting the clevises, winding them in or out as necessary until the control surface is lined up with the wing/rudder/tailplane that it is attached to.

Last job of the build is to check the Centre of Gravity. As this model is really intended for newcomers to the hobby, who may not have any assistance when learning to fly (although I doubt if any retailers would sell one without recommending a local model club) it is not surprising that the C of G position shown is well forward, hence ensuring docile flight characteristics. But the battery bay is spacious, so there's plenty of leeway for moving the battery aft a bit for a more lively feel on the sticks.

Finally, if you own an E-Flite EFC-721 HD video camera then a clip-on mount is supplied with the model that secures the camera to the top of the wing with self adhesive tape. We don't, so I didn't!

### First Flight

After a quick read of the manual to swot up on the Virtual Fence and other GPS functions I thought I was ready to get this

pretty white bird airborne. After all, with almost forty years of R/C flying experience under my belt what could go wrong when flying a trainer? And playing with that new GPS tech would be a bit of fun on top, wouldn't it?

I was about to be proved wrong on both counts and what followed was 100% my own fault:

The take off went well and the Sportsman S+ climbed out in a spirited fashion. She responded well to the controls (set to High Rates and Experienced Mode) as I entered the first turn, then suddenly I had no control. I pressed the Panic Button (correctly known as the HP/AL switch) and to my relief I found I had full control once more. Moments later it happened again, so I hit the button to regain control. This cycle of events continued many times, but at least the model didn't seem in any danger of coming near to the ground – which was a bit of a surprise as I had the throttle shut right down! But every time she did her own thing the motor would open up and she would climb away and regain height.

I then remembered that you could disable the GPS functions by holding the HP/AL

button and flicking the Mode switch back and forth at least five times, which would have worked a treat if I had toggled the correct switch. Instead I was merely flicking the Rate switch, which had no effect at all!

Eventually I managed to tease her down, blipping the panic button to regain control for a few seconds between her attempts to fly off solo. The ensuing landing wasn't pretty but at least she was down, and the long grass she had settled in meant that she couldn't try to take off again while I trotted over to disconnect the battery.

Time for a much needed coffee and a good look at the manual to get a full and proper understanding of the GPS functions. It was soon evident where I had gone wrong.

The Sportsman S+ has a clever function called Virtual Fence. This is designed to keep the aircraft inside a safe flying zone, set by default to be a circle of approximately 650 feet (200 metres) radius from the point at which the model is powered up. Whilst climbing out I had hit this virtual fence, at which stage the GPS system automatically took control and attempted to put the model into a Holding



The saddle clamps are 'handed' to secure the undercarriage



Undercarriage in place. Note the large access hatch for the LiPo



The stabiliser slides into the fuselage and is held with small pieces of tape



Underside of wing shows spar and aileron servo. Note contrasting scheme for orientation



The descriptive manual includes plenty of information on how to use the transmitter controls



Top left hand view shows the Bind, Holding Pattern and AutoLand button, and the three position SAFE+ Mode switch



On the top right hand side is the High/Low Rate switch



Supplied 3S 1300 mAh 20C LiPo and 12V DC cigar socket balancing charger



The LiPo simply straps into the recess

Pattern over the centre of the flying circle. It does this by flying at half throttle at an altitude of 120 feet (36 metres). Full control can be regained at any time by pressing the HP/AL button.

So the poor Sportsman S+ had only been trying to do what it was programmed to do by attempting to fly back to the centre of the circular flying zone and entering the Holding Pattern. But in trying to perform a conventional rectangular circuit to bring her down for landing, I unknowingly kept trying to fly her outside of the Virtual Fence, so the GPS would constantly take back control and open up the throttle to try to get back up to 120 feet!

So apart from main lesson learned – to read the manual properly – I also discovered that the best way to avoid conflict with the clever GPS system is to simply trust it and let it fly the model back into a holding pattern, at which point you can regain full control by a quick press of the HP/AL button. In fact it is so reliable that I sometimes deliberately try to ‘crash the fence’ in order to see the GPS system in action. It’s fascinating to watch – once you stop trying to fight it!

My main point here is that this model is packed with clever GPS functions, so please read the manual thoroughly before attempting to fly it. This is actually more pertinent to an experienced model pilot, who may find themselves asked to test fly one of these models, rather than the actual owner, who is likely to thoroughly read the book due to the money they have invested when buying the model. If you do find that the model starts flying itself, just relax and wait for it to enter the Holding Pattern. Take a few deep breaths, relax and then

press the HP/AL button to start flying her again – simple!

### GPS Explained

The default circular ‘Virtual Fence: Park’ is not the only way to fly this interesting model. At a conventional model flying site it will be better to activate the ‘Virtual Fence: Airfield’ setting. This establishes a 1300 x 650 foot (400 x 200 metre) rectangular area in which to fly the model, which will allow you to fly normal circuits and simple aerobatic manoeuvres without flying into the ‘fence’ and triggering the Holding Pattern function.

To enter this mode you need to place the model on the edge of the runway at 90 degrees to the direction of take-off. Connect the battery and flip the model over on to its wheels (the battery hatch being under the nose) and you then have to wait a few seconds for the GPS system to obtain lock, denoted by a series of tones from the model. To enter the default ‘VF:Park’ mode you don’t need to do anything to the Tx, but to initiate ‘VF:Airfield’ mode you have to hold the aileron/elevator stick unit in the ‘full right/full up’ position while the GPS module is establishing lock.

When the model beeps you can release the stick and put the model on the runway, making sure that it is at 90 degrees to the position where it was switched on. The nice thing about this VF mode is that the virtual fence covers the area behind the pilot, i.e. the pit area, pilot box and maybe the car park. So with this mode selected the model is prevented from flying into the area where a conventional trainer could do most damage if the pilot lost control.

Also, in ‘Virtual Fence: Airfield’ mode the holding pattern moves to the far side of the runway, putting it in a more comfortable position should the Sportsman S+ be flown at the same time as other models, which is highly likely in a club scenario.

Sportsman S+ has another clever GPS trick up its sleeve – it can land itself! The ‘AutoLand’ function is initiated by pressing and holding the HL/AL (AutoLand) button for three seconds, following which it will fly to an altitude of approximately 65 feet (20 metres) and position itself 490 ft (150 m) downwind of the take off point. It will then turn into wind and begin a landing approach. When it descends to ten foot off the ground the power is cut and the model will land itself. You can assist the landing, either adding power to extend the approach or adding a touch of elevator or aileron to avoid obstacles and make small heading adjustments. Alternatively you can abort the landing at any time by pressing the HL/AL button, at which time the model will automatically head off and establish itself in the Holding Pattern.

This is pretty impressive to watch but I never managed to allow it to perform a full landing as it always wanted to land BEHIND the pit area! Which rather defeats the object of the Virtual Fence. A web search revealed that I am not alone in having this experience, and one of the solutions offered was to recalibrate the internal compass at the flying field, which in my case was different to the site where the model was originally set up. Full instructions are given on how to do this, plus there is a very good video on the Sportsman S+ page of the Horizon Hobby website that is well worth watching.



*It can take itself off too! Using Auto take-off the Sportsman S+ climbs away smoothly*



*Flying overhead the contrasting scheme is clearly shown, while the Sportsman S+ remains very stable*



*When the model reaches the ‘Virtual Fence’ it will automatically bank and turn away*



*Brian Cooper has reviewed the Sportsman S+ for Quiet & Electric Flight International, our sister magazine. Here he displays the AutoLand in operation as he holds the transmitter high*

Initially I couldn't get the model to enter the calibration routine (signalled by the ESC sounding and the ailerons moving up and down continuously). However, I eventually realised that the rate switch needs to be set High to calibrate the compass.

With the compass now calibrated for the local flying field, I pressed the AutoLand button and the model headed straight for the same patch of sky that it did before, behind the pit area. No change there, then! Which is a pity as I can see that this would be a great feature for anyone who is over-awed by landing an R/C model – and that's not just beginners, but sometimes more experienced pilots too, who may have lost a bit of confidence for one reason or another, maybe due to age or health related reasons. I am sure that Horizon will provide us with a solution, and when they do we will pass it on.

Finally, I should mention that all the GPS features can be turned off, but the chances are that you will have purchased this model in order to benefit from them, so I doubt if this would happen very much. However, if you are flying at a model club and either you or your clubmates are having trouble setting up or understanding these clever features then you may choose to switch the GPS off so that the model can at least be test flown and trimmed.

When you do fly the model on its own it behaves just as you would expect a modern foam trainer to do. It is easy to handle, has a gentle stall and boasts a lively performance from the supplied motor set up. Sportsman S+ will even perform basic aerobatics – loops are easy, but rolls are a

best done at a good height and with high rates, as they are quite sedate. Inverted flight is easy too!

### Other Features

Other safety features built in to this fine trainer are Panic Recovery and Low Voltage Cutoff.

Panic Recovery happens automatically when you release both sticks, and the model will return itself to straight and level flight – even if you let the sticks go when half way through a roll! It is available all the time that the Flight Mode switch is set to Beginner Mode, above 33 feet when in Intermediate Mode (which you will need to be in if you want self levelling and enough control movements to perform aerobatics), but is disabled in Experienced Mode.

Low Voltage Cutoff is built in to the ESC to protect the LiPo from being over-discharged. When the battery drops to a critical level the ESC will limit the power supplied and will pulse the motor. So when you detect a sudden drop in performance and hear the motor pulsing it is time to land.

### Conclusions

This is an easy to fly, good looking moulded foam trainer of semi scale appearance. But what makes it truly special are those excellent GPS features, especially 'Virtual Fence: Airfield' and 'Holding Pattern'.

'AutoLand' is a bit too wayward to use at small flying sites or those backed by trees and hedges, as are often found in the UK, but would be a potential model saver for

anyone lucky enough to be able to fly in wide open spaces and maybe where it is simply too far to drive to the local model club to have guided tuition. Although this is not so likely in the UK, I can see the benefit for someone who wants to learn to fly R/C models but who lives in an isolated community in a country as vast as the USA or Australia. Hopefully, Horizon will refine AutoLand so it can be used at typical UK flying fields too.

So we have here an excellent first R/C model that is equipped with some really clever flight aids that are aimed at helping novice pilots who may not be able to get tuition from an experienced pilot. But despite this I would hope that any purchasers of this aeroplane will be given the details of their local model flying clubs. And when they get there, I would implore anyone who steps in to help and maybe test fly the Sportsman S+ to sit down with the owner and to 'Read The Flippin' Manual'! If you do that, you will be amazed at what this little trainer can do. **RCMW**

## MODEL WORLD DETAILS

### MODEL INFORMATION

<b>NAME:</b>	Sportsman S+ RTF
<b>MANUFACTURER:</b>	HobbyZone
<b>DISTRIBUTOR:</b>	Horizon Hobby
<b>PRICE UK:</b>	£299.99 (RTF – HBZ8400UK) £269.99 (BNF – HBZ8480UK)
<b>MODEL TYPE:</b>	Semi-scale Trainer/Sports
<b>MOTOR:</b>	480 brushless outrunner, 960KV
<b>ESC:</b>	18 Amp
<b>BATTERY:</b>	3S (11.1 V) 1300 mAh LiPo (with 12 V car charger)
<b>PROP:</b>	9" x 6"
<b>CONSTRUCTION:</b>	Impact resistant, moulded Z-Foam
<b>RADIO SUPPLIED:</b>	Spektrum DX4e Transmitter, Spektrum A3172 DSMX Rx plus GPS Module

### R/C FUNCTIONS

1: Ailerons	3: Throttle
2: Elevator	4: Rudder/Nose wheel steering

### MODEL SPECIFICATIONS

<b>WINGSPAN:</b>	54 5/8 in. (1390 mm)
<b>WEIGHT:</b>	2.1 lb (950 grams)
<b>WING LOADING:</b>	13 oz/sq ft.
<b>WING AREA:</b>	360 sq in (2.5 sq ft)
<b>LENGTH:</b>	35 3/4 in (905 mm)

### DISLIKES

- AutoLand function keeps placing the model behind the pilot
- Allocation of HP/AL functions means that the Trainer button cannot be used for buddy box training. Assigning other switches to Trainer on the DX6 does not appear to work

### LIKES

- Scale looking trainer
- Gentle flight characteristics
- RTF version provides a complete package for a beginner
- Holding Pattern, Virtual Fence and Self Levelling are great safety features
- Comprehensive manual – a must read!



On short finals as the Sportsman S+ makes a perfect landing without any influence from the pilot



The complete package Ready To Fly. Picture by Brian Cooper



In this third part of our model build, Peter Maw passes on some silver soldering, wing joining and attachment, and final finishing tips

# SCALE MODEL BUILDING FOR FUN



## A New Skill

If you like biplanes and old timers it is inevitable that silver soldering will become a skill that needs developing.

It is surprisingly easy to do and there is no need to panic. Don't listen to the Old Wives Tales your club members will try to terrify you with. Buy a blowtorch that can create a flame that reaches at least 650 degrees centigrade and can give a fine point flame when needed.

Next, stroll down to an electrical wholesaler and buy as much fuse wire as you can. Most now only sell small cards with 5, 15 and 30 Amp wire costing about £1. The 15 and 30 Amp wire will be ideal for the sort of work we want to do. You will use this to hold the joints together as the silver solder is melted into the joints.

Look at the CupAlloys website (see Contacts) to sort out what is needed in terms of consumables. There is a mountain of information on the site, and small quantities of products can be ordered.

Quite a number of years' experience has led to finding out that the best silver solder for piano wire is their 455 grade

solder used in conjunction with HT5 flux. Make sure that flux is applied everywhere you would like the solder to run. The flux powder is mixed with a few drops of water and should resemble thick custard in consistency. For lower temperature joints use their 2207 ready fluxed solder.

As the following extract from the CupAlloys website shows flux is an essential part of silver soldering:

*"It is imperative that all joints are perfectly clean if an alloy is to flow properly and produce sound joints. It is, however, immaterial as to the cleanliness at room temperature, it is the state at soldering or brazing temperature that is all important. Excessive attention to joint cleanliness during assembly is unnecessary. No matter how much you clean the components, you are going to create more oxide from the heat source than you have so painstakingly removed. Oxide removal is the function of the flux!"*

*Certainly all parts should be free of oil and grease. If appropriate de-grease using warm soapy water, solvent, wire wool or a stiff wire brush. This is probably more*

*relevant to soft-soldering because the lower temperatures involved may not drive off or burn off grease from handling the components.*

*Do not use emery cloth or grit based products. These can leave deposits behind that the flux cannot remove leading to porous joints"*

(Extract courtesy of CupAlloys Ltd.)

## Soldering Knowledge Base

What else do we need to know about silver soldering?

The tip of the blowtorch flame is hotter than the base. Silver solder fills gaps and is stronger than the piano wire. Heat the joint, not the brazing rod, by heating from the underside and apply the rod from the top. That guarantees the joint is hot enough for the solder to flow everywhere in the joint. Loosely hold the joints together with the 15 Amp or 30 Amp fuse wire. Surprisingly this does not melt at 650 degrees centigrade, which does make you wonder what protection mechanical fuses ever offered?



*Cross piece added to the undercarriage axle will keep the under fuselage winglet in place in case of landing knocks*

### Undercarriage Aerofoil

The finishing line is in sight once the metal bashing has been done.

If you have been following the D.VIII build you will have noticed that many of the construction techniques that have been used can be used on most models of the early 20th century.

A number of designs from the period had miniature aerofoil sections under the fuselage (in the case of the real D.VIII this was also the fuel tank for the plane). Anyone who has flown a plane with this

feature from a grass-flying strip that isn't a bowling green will be able to tell you that the shape can easily get knocked about. Suddenly you find yourself flying a model with a barn door under the fuselage or a rotating aerofoil.

Unpredictable flying characteristics are the least of your worries in this situation. Therefore the addition of a cross brace, as shown in the picture close by, gives fore and aft stability for the aerofoil. Even if the aerofoil breaks it will stay in position, allowing a safe landing.

### Building Excitement

When you buy an ARTF the excitement evaporates as soon as the box is opened and you view a ready-made plane that used to be your pound coins. Apart from adding decals (sometimes) very little creativity is required.

On the other hand the more you do on a model built from a wood pack and plan the more it gets to look like a plane and you can start imagining how stunning it will look in the air.

Now we can start to see the final shape as the wings are joined and covered.

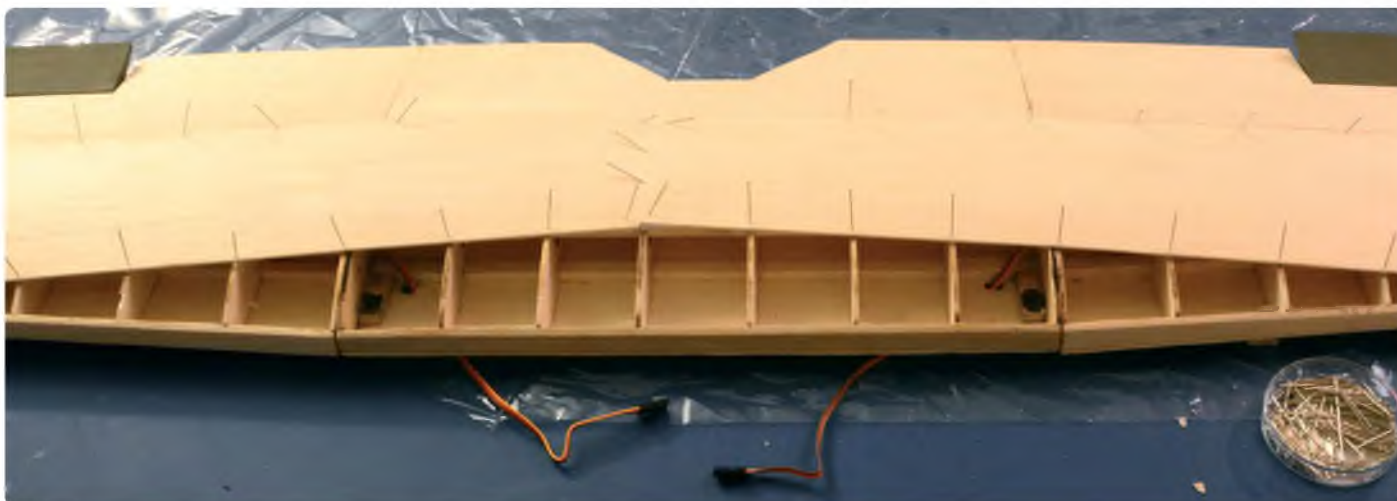
Before joining the wings make the support brackets for the wing struts and trial mount the centre section of the wing, as it is so much easier than using the whole wing. Once you are happy with the alignment tack the support brackets onto the struts with a bit of CA glue or some chemical metal. Then the wing can be removed and the brackets can be soldered to the struts, confident in the knowledge that they will be in the correct position.

It is always best to make sure that the wing joints are solid. Although all the bottom sheeting can be fitted it is best not

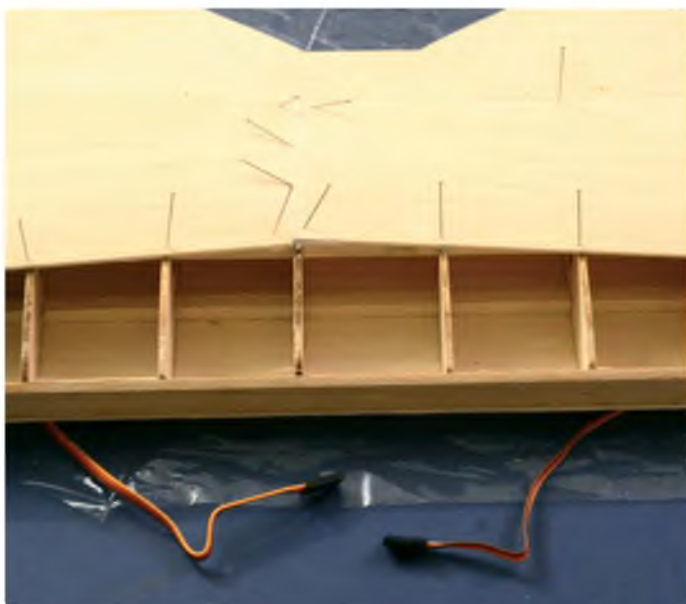
to add all the top sheeting until the wings have been joined to the centre section. The ribs can then be clamped together, giving the best possible join.

On this plane the dihedral braces are quite insubstantial. To help them out bring the wing sheeting on the top to the middle of the centre section. Do the same with the wing leading edges. Then just add wingtips, sand everything to shape and all of a sudden the wing is finished.

Including servos the wing built as per the plan comes in at 360 g (13 oz). Pretty good for a fully sheeted wing.



*Top wing sheeting can be extended to the middle of the wing, making people wonder how you managed to make such a complex wing shape so smooth, as well as increasing the wing joint strength*



*If you forget to make exit holes for the aileron leads major surgery will be needed in the lower sheeting to find them!*



*There is no substitute for weights when trying to keep a wing flat for joining. Use 30 minute epoxy to give time to sort everything out at this critical stage of the model build*



*Wing ready to cover. Note how the top sheeting has been taken to the centre of the wing to improve wing joint integrity*

**Not Much Left Now**

Specifically there is the cowl and the winglet. It doesn't matter which order you do these things. The cowl is very clever. It is built with spacers and a ply and balsa sandwich. The ply gives a beautiful finish

and plenty of strength, and the balsa keeps the weight down.

The winglet needs to be horizontal when the plane is in flight. Epoxy the underside of the winglet to the undercarriage assembly, making sure that the front and

back are both the same distance from the bottom of the fuselage. Then the top parts can be added and the whole lot can be sanded to shape confident in the knowledge that the assembly will be properly aligned to the rest of the plane.



*Spacers between the two cowl formers. Their length will be decided by the overall length of your power plant*



*1/64" ply is bent round the cowling formers and held in place until the glue is dry*



*Complete cowl sanded and ready for priming and painting*



*Completed metalwork and winglet*



*The winglet must be parallel with the wing as it is a significant part of the flying surfaces*

## Don't Touch

The colour scheme chosen is easy to create in Solartex. Two metres will be needed for the wing and winglet, one metre for the fuselage. Model shops such as Blackburn Models sell covering material off the roll, which is very convenient. The 'tex finish is very good tempered and will easily cope with compound curves if applied correctly. Which means tack it around all the edges at low heat. Then go around all the edges again at slightly higher heat (move the iron setting from linen to cotton or from 100 degrees C to 120 degrees C).

As long as you have not ironed in a crease to the material at this stage you are guaranteed a perfect finish.

Then increase the iron heat to around 140 degrees C and pass the iron over the Solartex surface without touching the Solartex. The iron should be 2 or 3 mm away from the material. Miraculously the material will shrink without creasing or distorting. If you put the iron onto the tex before shrinking it will crease and look horrid. Finally, do not overheat the material.

## TOP TIP

Heat guns are generally too hot for Solartex. If it gets too hot it loses its stickability and shrinkability, and will look horrible whenever the outdoor temperature changes.

The fuselage should only be partially covered (top of the fuselage only) until the power train, battery boxes and servos have all been hooked up and checked. The previously covered fin, rudder and tailplane assemblies will need to be glued to the fuselage before this can happen.

The elevator servo is connected by a virtually straight control rod. Usually when making solid straight control rods it makes sense to introduce a small bend into one of the threaded metal clevis rods used at each end of the rod. The kink will stop the whole assembly from rotating in flight, which can have disastrous consequences if a clevis drops off the end of its threaded rod. The rudder servo is connected using a closed-loop system, which is light and accurate.

The cowl is built from balsa and ply laminated together. Before adding the very front of the cowl it will be necessary to fix it to the F1 former along with the engine/motor. Then the front can be accurately positioned onto the rest of the cowl to take account of the side thrust built into the motor mount.

When dry paint the cowl with a couple of layers of Deluxe Materials Eze-Kote finishing resin, rubbed down between applications, and then spray paint to your heart's content. Three coats of Flair Spectrum paint produced the cowl you can see in the pictures of the finished model. The cowl is cleverly fixed to the F1 former with three screws and a twisting action.



*Solartex is a really good tempered covering material that easily copes with compound curves*



*If the control rod is made as a straight line it can rotate and eventually one of the clevises will drop off the control rod. This kink prevents rotation of the rod and subsequent disaster*

## Twiddling Around

The basic model is finished. When you want to go flying but the rain turns up it would be nice to add a few extra scale embellishments.

The footholds are simply produced by bending small sections of scrap control rod. And the handholds at the rear of the fuselage are made from heavy duty fishing wire. The undercarriage cross wires use the same material and can be soldered to the main undercarriage framework using the CupAlloys low temperature 2207 Silver Tin Flux Cored Solder Wire.

When the tailplane was made ply reinforcements were put into the edges of the stabiliser. These will be used to attach the stabiliser mounting struts. Similar reinforcements should also be added to the rear of the fuselage. Aluminium tube with flattened ends makes a lightweight support system.

The cockpit padding (coaming) is made with some leatherette stuffed with a bit of upholstery wadding. If you are lucky you will have a local upholstery shop who will give you enough of a sample to make padding for dozens of these things.

All the decoration was produced in CorelDraw and the files emailed to my local vehicle graphics shop, who charged me a tiny amount of money to produce the self-adhesive cut vinyl graphics. **RCMW**



*Reinforcements were added to the stabiliser and fuselage for the stabiliser mounting struts*



*Small scale details can be added such as this foot step*



*Next month our Fokker takes to the air!*



## CONTACTS

### Soldering Consumables

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

### Deluxe Materials

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

# MODEL WORLD DETAILS

## MODEL INFORMATION

<b>MODEL TYPE:</b>	Parasol wing, near scale monoplane
<b>WING SPAN:</b>	54" (1.37 m)
<b>WING AREA:</b>	437 sq in (0.28 m <sup>2</sup> )
<b>WING LOADING:</b>	26 oz/sq ft (7.9 kg/m <sup>2</sup> )
<b>ENGINE/MOTOR:</b>	0.40 cu in 4-stroke or equivalent electric motor (Axi 2826/12 used with 12" x 6" prop and 40 amp ESC)
<b>CONSTRUCTION:</b>	Balsa and ply
<b>WEIGHT:</b>	5 lb flying weight, including a 4S 3300 mAh LiPo (no weight difference compared to a 0.40 cu in 4-stroke)

## R/C FUNCTIONS

1: Throttle	3: Elevator
2: Rudder	4: Aileron (2 servos)

Next month the flying bit,  
fitting a gyro and the power-  
train set up.

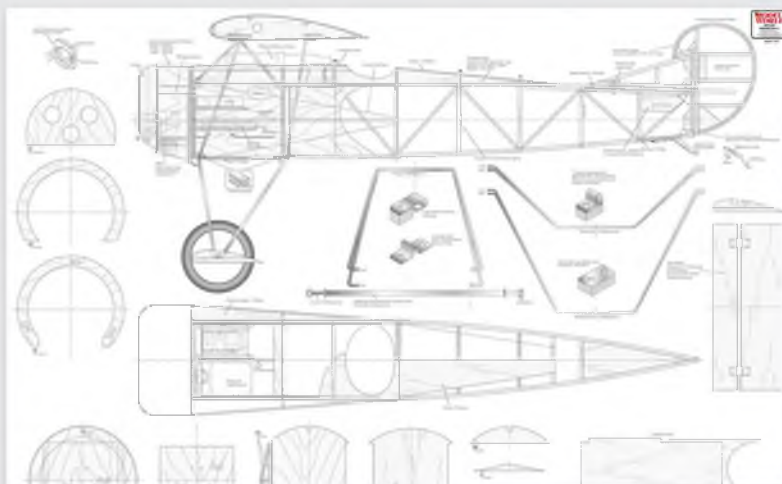


## PLAN DETAILS

<b>NAME:</b>	Fokker D.VIII
<b>BUILD CATEGORY:</b>	Intermediate
<b>PLAN NUMBER:</b>	MW3599
<b>PLAN PRICE:</b>	£20.99 (\$33.99)
<b>WOODPACK PRICE:</b>	£50.99 (\$86.99)

Plans and parts are subject to Postage and Packing charges at standard rates.

Copies of plan number MW3599 are available from RC Model World (Plans Service), Traplet Publications Limited, Traplet House, Willow End Park, Blackmore Park Road, Welland, WR13 6NN, England, Telephone: + 44 (0) 1684 588599, Fax: + 44 (0) 1684 578558, Email: [orders@traplet.com](mailto:orders@traplet.com) or order online at [www.trapletshop.com](http://www.trapletshop.com) For more information on the Traplet Publications Plans Service see our advertisement in this issue.



 <b>CAPICHE 50CC</b> £510.60	 <b>OBSSESSION</b> £245.10	 <b>MINI HYPE 3D</b> £134.78	 <b>HYPE 3D</b> £194.99	 <b>CAPICHE 52</b> £239.99
 <b>COUGAR 2000</b> £124.95	 <b>VELOCITY</b> 50 SIZE OR ELECTRIC £119.95	 <b>MINI MAGNUM</b> .30 SIZE OR ELECTRIC £102.09	 <b>MAGNUMR</b> £119.95	 <b>DEPRON PLANES</b> AVAILABLE IN 3MM OR 6MM WING SECTION £20.38
 <b>MINI VELOCITY</b> 25-36 size £91.88	 <b>NEW</b>	 <b>PARK SHARK WITH 6MM WING</b> SECTION £20.38		

 <b>WARP 360</b> MOTOR+BLADES £292.57	 <b>C/F FB ATOM 500</b> £412.39	 <b>C/F FBL ATOM 500</b> £412.39	 <b>6HV ULT+BLADES</b> £469.99	 <b>6HV ULT+BLADES+MOTOR</b> £569.99	 <b>3D + FBL</b> £427.71	 <b>3D + FB</b> £427.71
 <b>WARP 360</b> AIRFRAME ONLY £247.99	 <b>ATOM 550 ULT+BLADES</b> £469.99	 <b>ATOM 550 ULT+MOTOR+BLADES</b> £569.99	 <b>7HV ULT AIRFRAME</b> ONLY (NO ESC, NO MOTOR) £599.08	 <b>ODIN 90 SIZE</b> G10 £559.95		

 <b>WEST 25 + GENESIS MINI PIPE</b> £127.63	 <b>WEST 36T2 + GENESIS PIPE</b> £158.27	 <b>WEST 36 T2R + GENESIS PIPE</b> £183.81	 <b>WEST 36V1 + GENESIS TUNED PIPE</b> £194.03	 <b>WEST 52T1 + GENESIS PIPE</b> £188.92	 <b>WEST 52V1 + GENESIS TUNED PIPE</b> £183.81	 <b>LIQUID GOLD/PROSYNTH 2000 FUEL RANGE</b>
					 <b>WEST 61 F/S</b> £178.68	 <b>WEST 70 F/S</b> £193.99
					 <b>WEST 91 F/S</b> £226.68	 <b>WEST 120 F/S</b> £276.72
					 <b>WEST 180 F/S</b> £347.19	

AVAILABLE ON YOUR DOOR NEXT DAY

<b>RCV SP RANGE</b>		<b>RCV</b>	<b>CD ENGINES HAVE AN ADVANTAGE OVER NORMAL 4 STROKE ENGINES BEING MORE COMPACT, LESS MOVING PARTS AND A GREATER FUEL EFFICIENCY</b>	<b>RCV CD RANGE</b>	
SP 60 £203.27 SP 90 £254.34 SP 120 £295.20				58 CD £152.20 91 CD £193.06 130 CD £254.34 <b>NEW 130 CD</b>	
<b>FOR ALL YOUR SCALE NEEDS</b>					

SP ENGINES HAVE A 2:1 GEAR RATIO ALLOWING YOU TO TURN LARGE SCALE PROPS.

<b>ALL IT TAKES IS A SIMPLE PHONE CALL AND WE CAN MAKE A TAILOR MADE PIPE FOR YOUR PROJECT</b>	<b>MAKING PIPES FOR OVER 36 YEARS</b>	<b>RCV</b>
	<b>FOR, PLANES, HELI'S, BOATS, CARS, UAV'S</b>	
		
<b>AERO MANIFOLDS</b> SIDE TO REAR REAR TO REAR SWAN NECK STAINLESS PETROL HEADERS	<b>HELI ONE PIECE PIPES</b>	<b>GENESIS FOUR STROKE SYSTEM WITH VIBRATION FLEX JOINTS</b>
		
<b>AERO ONE PIECE PIPES</b>	<b>INCREASE YOUR FOUR STROKE PERFORMANCE</b> 40-63 F/S £40.81 70-90 F/S £46.94 120-150 F/S £51.02 180 F/S £55.82	<b>MARINE WATER COOLED PIPES AND MANIFOLDS</b>
		
<b>30CC £51.03</b>	<b>GENESIS PETROL CANS</b>	<b>80CC £122.53</b>
		
	<b>50CC £91.88</b>	

**NEW INCOWL SILENCER FOR THE SP RANGE WITH REDUCED NOISE LEVELS AND AN AVERAGE OF 300 RPM MORE AT THE PROP**  
60SP £71.45  
90SP £81.66  
120SP £91.88

# SILENT SCALE

*Chris Williams flies with a Squadron of Ghosts and witnesses mysteriously vanishing gliders!*



*HpH 304S Shark in action*

**W**hen the first of the Ghost Squadron's Middle Wallop events rolled around their 'Dear Leader', John Greenfield was off on his round-the-world tour, having joined the freshly-retired club (of which I, too, am a proud member). This left tugmeister, Pat Marsden in the hot seat and we unfolded our chairs on the Saturday morning and sat back with arms folded ready to extract the wee-wee should he falter.

An early bout of rain had given up due to lack of interest and we were left with dry, but somewhat windy conditions, the forecast of which had attenuated the attendance to a fair extent. Somewhat to our disappointment, Pat took on the leadership role in the manner born and he soon marshalled the troops into position.

## **Let The Fun Begin!**

The first sailplane to catch my eye was

the HpH 304S Shark, a plastic beauty of such elegance that it made even the already elegant all-moulded competition look almost pedestrian. With its swept-back winglets and down-turned tailplane there is indeed something shark-like in this glider's appearance.

When the super-large and super-cheap Phoenix 40% K8's first made appearance there was much in the way of excitement amongst the ranks. Soon, though, it



*Happy scene at the Middle Wallop event*

became apparent that there were serious constructional flaws in their design and distributors had a job to give them away. My pal Motley is not one to be deterred lightly, however, and he set about to modify his in such a fashion as to address the issues that had come to light, largely in the construction of the wings.

This set a train of events in motion whereby others did the same the same thing, and now these gliders are reappearing all over the place, there being three at this event over the weekend.

Phil Huddleston is not one to pussyfoot around with his gliders and he demonstrated with his version what a few decent modifications can do by looping and rolling his model around with a fair degree of abandon. The thing is, at this size, these are really nice-flying models.

### Lost In Action

Sadly, it has to be recorded that a number of gliders suffered write-offs over the weekend, the first to go being Mark Deverill's 1/4 scale Sagitta, built by Vic Steel. This suffered from the very unusual failure of the 14 mm steel wing joiner bar, which fractured at the wing root, leaving the model one short in the wing department.

Another to bite the turf was Tony Hooper's venerable third scale Bocian. Coming in a little too high, he was faced with the dilemma of landing straight ahead, but with a long distance retrieve, or pulling a one-eighty and coming around again. This is a difficult decision with a glider because there's no burst of throttle to get you out of trouble, and you have to rely on your knowledge of the wing's efficiency and a good reading of the prevailing conditions. Alas, it was probably the strength of the wind that sealed the Bocian's fate, as she ran out oomph on the final crosswind turn, enduring a fair amount of damage as result.

As usual, dedicated builder Terry Holland had brought along another beauty for us to marvel at. This time it was the Hungarian Nemere. This was to be test-flown as usual by Dave Stokes, who has first-flighted just about all of Terry's creations. Dave had brought along his Slingsby Petrel and both models were poems of varnished wooden craftsmanship.



*Bernie Jones' Let Models ASH31 Mi special carbon edition takes a tow*



*One of the modified 40% Phoenix K8s at the event*



*The ill-fated Bocian on the downwind leg*



*Terry Holland with a 'few he made earlier'*



*Mark Deverill's Sagitta on its only flight of the weekend*

But things did not go well, I am sad to have to report. Firstly, Dave lost his Petrel, due, it was later suspected, to a duff receiver battery. Dave then proceeded to fly the Nemere, which seemed to perform well until it, too, succumbed to a flat battery and was also written off.

As a consolation prize we later photographed Terry with a clutch of models that he has built over the years, and which were in attendance on the day in the hands of their current owners.

Despite the loss of Dave Stokes' Petrel, it was reckoned that we could possibly have had a world record number of these machines in attendance over the weekend. (Not bad, considering that there are only two of the full-size in existence and only three were ever made!) This plan, one of my early efforts, has really gained popularity in recent years, to the extent that the Boss, Pat Marsden, has finally

finished his version after a marathon three-year effort. I think there were five models present, but I was only able to corral three of them for the obligatory photo shoot on the tarmac. (From front to back: Pat's, my current version and Darren Maple's.)

Another model to experience unwanted excitement was a Fauvel flying wing, bought second or third hand by its current owner. As yet unflown, he expressed some doubt as to the trim set up and predicted behaviour. He was right, as the model shed its canopy hatch and receiver battery in short order, and then proceeded to fly inverted in a modest circular pattern, eventually landing at the far side of the airfield without too much in the way of damage.

#### **Cloak Of Invisibility**

There was one strange phenomenon about the conditions on the Saturday,

which became more and more obvious as the day wore on, and it was this: gliders were displaying the disconcerting habit of becoming invisible! It is well known that at certain angles on tow a model can seem to shimmer temporarily out of existence until it changes its angle in relation to the viewer and reappears once more.

It's also well known that a clear blue sky exacerbates this problem greatly. I must admit to moments of panic as both my Bergfalke IV and Topaze both spent far too long out of sight, and only last minute glimpses of reflected light prevented me from shouting out for help. It turned out that I was not alone, and many other fliers admitted to the same difficulty, and I imagine optometrists all the country were going to experience a sudden surge for eye tests come the Monday morning. It didn't help that the wind direction had us launching toward a lowering sun, but



*Third-scale Hall Cherokee*



*No happy ending for Terry Holland's beautiful Nemere on its maiden flight*



*Highly expensive! Chris Strong's 1/2 scale DG1000 in the foreground and Chris Garrod's ASH 25Mi behind*



*A trio of Slingsby Type 13 Petrels at the Ghost Squadron's event (with Pat Marsden's new Petrel in the foreground)*

whatever else was causing such a visibility problem will probably never be explained.

There was a certain irony to this, however. When my pal, Motley finished his version of the Bergfalke IV in silver, some doubts were expressed in certain quarters about the model's visibility at altitude. As it turned out, against a clear blue sky, the Bergfalke was much easier to see than a white glider, which maybe goes to explain why many of the plastic jockeys are these days colouring the underside of their wings blue.

A more favourable forecast for the Sunday resulted in a surge of attendees on the day, and in excess of forty pilots were registered, an excellent turnout for this, the first of the Ghost Squadron's aerotows of the season. Thanks must go, as usual, to the tug pilots, Pat Marsden, Tony Hazlehurst and Gary Page for their sterling efforts over the weekend, and to the Ghost Squadron girls and boys for the organisation of the event. Here's to next time...

### Kite 2a Completed

The third White Sheet scale fly-in of the season took place in the middle of June. It was notable mainly because an insipid forecast meant that only Motley and myself (and later one other) turned up, which was a shame because after a dodgy light wind start the breeze settled in and gave us the best flying conditions of this, and quite a few previous years, too...!

My current project, the Slingsby Kite 2a, had been completed and maidenised a couple of weeks earlier. But this was to be its first proper work out after adjusting the C of G to a more rearward position. Despite the extra drag of the wing and tailplane struts, the Kite performs very well and certainly looks a treat in the air. The full size has a staggering eight degrees of decalage, most of it lodged in the high angle of attack of the wing in relation to the fuselage, which is reckoned to give the glider a nose-down attitude in flight and looking as though it's going faster than it really is. Not at all happy with the prospect of flying a model with that much longitudinal stability, I had cheated by angling the tailplane to give decalage of around two degrees, thus preserving the look of the full size at the front, and this seems to have worked out pretty well when the model is in flight.

That's it for that project, then. All that remains is to wait for some more clement weather to get the video clips together for a film. (Given the weather these days, it might be a long wait!)

### Heard On The Hillside

During the course of the previously mentioned event, we were accompanied by a couple of White Sheet-ers who were dedicated followers of the carbon-screaming persuasion, commonly known as Eff-three-effers.

One of them mentioned to the other that he had come fifth at the Nationals. His companion absorbed this information for a few seconds, and then replied: 'Well, y'know it's nothing to be ashamed of...'

It was days before Motley and myself stopped laughing... **RCMW**



Author launches the new 1:3.25 scale Slingsby Kite 2a



Motley (Geoff Crew) displays the Kite at the White Sheet event



The Kite in action

**Yes!** I want to subscribe to RC Model World magazine

## ORDER TODAY

- ☐ Direct Debit (UK only) £10.50 every 3 months  
☐ UK 1 year (12 issues) only £42.00 and **Save 22%**  
☐ UK 2 years (24 issues) only £79.99 and **Save 25%**  
☐ Add a binder for only £9.95 + p&p

Savings based on newsstand cover price.

For overseas prices see 'Not in the UK'

CODE:  
MW1015

Region: \_\_\_\_\_ Price £/US\$: \_\_\_\_\_

### My details:

Title..... Forename .....

Surname..... Address .....

Postcode ..... Country .....

Telephone incl. area code .....

E-mail.....

Traplet Publications Ltd may contact you with relevant information about other products and services related to your interests. Please tick this box if you DO NOT want to be contacted by Traplet Publications ☐ Traplet Publications will never sell your details to any third party.

### I would like to send a gift subscription to:

*Please also fill out 'My Details' section above. To give more than one gift subscription, please supply address details on a separate sheet.*

Title..... Forename .....

Surname ..... Address .....

Postcode ..... Country .....

Telephone incl. Std code .....

E-mail.....

### I am using the following payment method:

- ☐ **CHEQUE** I enclose a cheque for \_\_\_\_\_ (made payable to Traplet Publications Ltd.)  
☐ **CREDIT/DEBIT CARD** Please debit the amount of \_\_\_\_\_ from my:  
☐ Visa ☐ Mastercard ☐ American Express ☐ Switch/Maestro

CARD NUMBER

\_\_\_\_\_

EXPIRY DATE

\_\_\_\_\_

VALID FROM

\_\_\_\_\_

SEC. No (FROM BACK

OF CARD)

ISSUE. No

\_\_\_\_\_ (SWITCH/  
MAESTRO ONLY)

Signature \_\_\_\_\_ Date \_\_\_\_\_

☐ I understand that £10.50 will be debited from my account every 3 months.

*Please complete the Direct Debit form below.*

#### Instruction to your Bank or Building Society to pay by Direct Debit

For office use only - Service User No. 599211

Ref. No. \_\_\_\_\_



Please fill in the form and send to Traplet Publications Ltd, Traplet House, Pendragon Close, Malvern, Worcestershire, WR14 1GA

Name of Bank: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode: \_\_\_\_\_

Account Name: \_\_\_\_\_

Sort Code: \_\_\_\_\_ Account No: \_\_\_\_\_

Please pay Traplet Publications Ltd., Direct Debits from the account detailed in this instruction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this instruction may remain with Traplet Publications Ltd., and if so, details will be passed electronically to my Bank/Building Society

Signature \_\_\_\_\_ Date \_\_\_\_\_

#### The Direct Debit Guarantee (This guarantee should be detached and retained by the Payer)

- This Guarantee is offered by all banks and building societies that accept instructions to pay Direct Debits
- If there are any changes to the amount, date or frequency of your Direct Debit Traplet Publications Ltd. will notify you seven working days in advance of your account being debited or as otherwise agreed. If you request Traplet Publications Ltd. to collect a payment, confirmation of the amount and date will be given to you at the time of the request.
- If an error is made in the payment of your Direct Debit, by Traplet Publications Ltd. or your bank or building society, you are entitled to a full and immediate refund of the amount paid from your bank or building society
- If you receive a refund you are not entitled to, you must pay it back when Traplet Publications Ltd. asks you to
- You can cancel a Direct Debit at any time by simply contacting your bank or building society. Written confirmation may be required. Please also notify us.

## Enjoy the benefits of a subscription:

☞ Spread the cost with Direct Debit

☞ Get all your inspiration hot off the press

☞ Every issue delivered straight to your door

☞ Get your issues before they hit the shops

## Not in the UK?

Don't worry here's our overseas subscription rates

### OVERSEAS SUBS RATES

Region	1 Year	2 Years
EU	£62.00	£119.00
USA & Canada	US\$95.00	US\$169.00
Worldwide	£63.00	£123.00

Overseas orders: please complete coupon and return to  
Traplet Publications Ltd., Willow End Park,  
Blackmore Park Road, Malvern, WR13 6NN

\*based on a 2 year cover price

## DIGITAL VERSIONS



RC Model World is also available in digital format. To buy a digital edition, please visit

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



# SUBSCRIBE TODAY

**AND GET A FREE BOOK SET OF AEROMODELLER'S ESSENTIAL TIPS & TECHNIQUES VOLUMES 1 & 2!**

## AEROMODELLER'S ESSENTIAL TIPS & TECHNIQUES – VOLUMES 1 & 2

In this essential-read book set, Peter Miller shares over 50 years of experience to give readers a fascinating insight into aeromodelling tips and techniques. Both volumes provide a wealth of information on building and flying R/C model aeroplanes, including tips on ground equipment and locating flying sites, as well as advice on recovering lost models and how to photograph your models to Editor standard. **Subscribe to RC Model World magazine today and get your free copies of these fantastic books now! PRODUCT CODE: ETTG**



# SIGN UP TODAY AND SAVE UP TO £28.00\*



**www.trapletshop.com**



**Call 01684 588599**

Call +44 1684 588599 from outside the UK



**Send your form FREEPOST**

FREEPOST RTRS-XEGS-CJET, Traplet Publications, Willow End Park, Blackmore Park Road, Malvern, WR13 6NN. (UK only)

Non-UK readers please send completed form to: RCMW Subscriptions, Traplet House, Willow End Park, Blackmore Park Road, Malvern, WR13 6NN, UK.

\* Saving based on current cover price for a 2 year period. Please note this offer is valid until 14/10/15 and applies to subscriptions with a minimum 1 year subscription term. In the event of an early cancellation of the subscription, Traplet Publications Ltd reserve the right to request the return of any free gifts or where necessary, the value of any free gifts. The offer applies only to purchases made directly through Traplet Publications Ltd, and does not apply to any purchases made through Agencies or third party sites. Any free gifts advertised are subject to availability and the offer is not to be used in conjunction with any other offer. Prices are correct at the time of going to press and may be subject to change without further notification. If you wish to cancel your subscription, please notify us to make arrangements. Direct Debit cancellations can be carried out, but no refund will be issued. For one-off payments, requests for a refund must be made in writing. Refunds will be made at the Publisher's discretion. An administration charge of 15% of the remaining credit may be deducted from the refund issued.

# THUNDER TIGER F-75S

*Following a hiatus from I/C engines, Frank Skilbeck installs a Thunder Tiger four-stroke in the Wots Wot biplane that he reviewed last month, and shares his impressions*



*The Thunder Tiger F-75S and its eye catching red box*

**S**ome 10 plus years ago I bought a Thunder Tiger GP42 plain bearing Schnuerle ported two-stroke for use in a trainer. This engine has been generally abused and not cossetted but despite its tough life at the hands of various trainees it has proven to be reliable and powerful,

and is still going strong. So when asked to review the Thunder Tiger 75 four-stroke, along with a Wots Wot biplane, I was intrigued to see if their four-stroke offering matched up to the workhorse the GP42 has proved to be.

## Overview

First impressions are very good. The F-75S is shipped in a colourful, robust box and includes a good quality opened ended spanner for the propeller nut and exhaust lock nuts, plus a selection of Allen keys and small spanner for adjusting the valve tappets. The engine is very crisply made, with smooth, clean castings for the crankcase and back plate, black anodised cylinder head with oversized fins for cooling, and a polished rocker cover. The overhead valves are operated by pushrods at the front of the engine, actuated by a camshaft that runs at 90 degrees via a helical gear, similar to many other four-strokes. The exhaust is a largish unit, with a matt anodised tapered body, finished with a polished alloy outlet.

An instruction manual, covering the 54, 75, 91 and 130 series four-strokes, is also provided. This is well written and very useful, with detailed installation, running in, operating and maintenance instructions, together with recommended propeller sizes and an exploded diagram of the engine with a complete parts list.

Thunder Tiger advise that the engine is fitted with oversized valves and a camshaft optimised for performance and easy handling. I didn't remove the cylinder head to check these claims, but who takes the head off their new car engine just to check it out? I did remove the rocker box cover to check the tappets, which were set from the factory and also took a look at the back plate. The internals were all very clean and appeared well finished. The engine itself is



The engine is supplied with a muffler, manifold and a selection of Allen wrenches and open-ended spanners. A Redline RF glow plug completes the package



Backplate and carburettor detail

over square in that the bore is significantly larger (28.3 mm) than the stroke (19.6 mm), which suggests that the engine would produce its best power at high revs. Thunder Tiger advise a practical operating range of 2,300 to 12,000 rpm; the 2,300 rpm figure being a reliable tickover speed, with a peak power of 1.2 bhp at 11,000 rpm which is par for this size of four-stroke engine.

The carburettor is a typical twin needle unit, with a needle valve on the throttle body for setting the high-speed mixture and a low speed mixture needle as part of the rotating throttle body, which adjusts the mixture as the throttle is closed. The

high-speed needle is adjusted by turning the knurled end with your fingers and the low speed by a small flat bladed screwdriver, as this is recessed inside the throttle body.

Note that the main high-speed needle valve is a fairly soft cast item. I accidentally managed to bend mine when trying to align it with the carburettor when the hole I'd made in the cowling didn't line up accurately. However, I was able to straighten it and it's performing OK, but just be careful to avoid this when fitting the needle valve during installation of the engine. Obviously, once the needle valve is in place it's not possible to bend the



The high-speed needle is adjusted by turning the knurled end and the low speed needle by a small flat bladed screwdriver, as this is recessed inside the throttle body

tapered needle. The carburettor, which is situated at the rear of the engine, can be reversed so the high-speed needle valve can be on either side of the engine to suit your installation. I had to do this and I also reversed the throttle arm to install the engine in the Wots Wot.

#### Installation And First Run

As indicated above, the F-75S was installed in a Wots Wot biplane, which was also being reviewed. The engine installation was pretty straightforward, and being able to easily rotate the rear mounted carburettor and throttle arm was a great help. The engine was mounted



*High quality machining is evident from this shot of a cleanly milled mounting lug*



*The rocker cover is easily removed to check the valve clearances*



*A lovely four stroke – whichever way you look at it!*

sidewinder with the cylinder head nestling in one of the cowl cheeks and the exhaust directed to exit at the bottom of the cowl, requiring only some minor cutting away of the cowl cheek to clear the cylinder head and give access for the glow driver. This also opened up the underside of the model for the silencer outlet and will hopefully provide adequate venting for cooling air. Incidentally, the glow plug used was the Thunder Tiger Redline, which unsurprisingly is one of their recommendations.

As per the instructions an 11" x 8" prop was fitted for the initial running in. With the propeller fitted and the fuel lines hooked up it was time to run the engine up (without the cowl to get some initial ground running on the engine).

Following the rather clear and comprehensive instructions, and using Southern Modelcraft 10% nitro synthetic oil fuel (which contains 2% castor and 15% synthetic oil), the engine was fuelled up and primed. The glow plug driver was attached and the engine burst into life at the first application of the starter. As per the instructions the first tank was run

through the engine, keeping it rich and the revs below 5,000 rpm. On the second tank (still without the cowl) the engine was leaned out a bit and run at full throttle for short periods, still showing no signs of discomfort.

Satisfied that the engine was fine to test fly the Wots Wot, the cowl and a 13" x 6" prop were fitted as I thought a 13" x 6" would better match the airframe.

#### **Flight Test**

I was not sure if testing a new engine in a new airframe was the best idea – especially when I've been flying electric for the last few months – but the weather had decided to co-operate and the photographers were lined up, so there was nothing for it but to fire up the F-75S and go for it.

As per the previous experience the engine started readily and was leaned out to give 9,600 rpm on an APC 13" x 6" propeller, and then richened slightly to drop the wide open throttle revs back to 9,300 rpm. Idle was on the rich side but steady, with only a slight hesitancy on pick up after a prolonged running at idle. A 'nose up' test

showed no leaning out and so we were ready to go. The first flight passed without any incident. Even with extended low speed running (required to get the flight shots) the F-75S ran well, providing plenty of power for the Wots Wot, with most of the flight being undertaken at half throttle.

Over subsequent flights (about 90 minutes total running time) the F-75S has loosened up a little and is now providing a reliable 9,800 rpm on the 13" x 6" propeller. The idle, around 2,300 rpm, is still slightly rich at the low end but pick up is good, with just a smokey exhaust trail to show for it. Next time I have the cowl off I'll turn the low-end mixture screw in a touch.

All flights, included some spirited aerobatics, have revealed no shortcomings and none has resulted in a dead stick landing, with the Wots Wot being taxied back after landing and the engine only stopping when the transmitter throttle kill switch is enabled. After the first couple of flights the exhaust did come loose but once retightened it has remained in place over a further six flights.



Popping the backplate off showed that the internals were all very clean and well finished



Sidewinder mounting the F-75S on the front of the Wots Wot was a simple job



The adjustable muffler and manifold allows the exhaust to exit cleanly from the bottom of the cowl



A neat and tidy installation at the front of the Wots Wot



Thunder Tiger's F-75S has proven to be reliable and easy to handle, giving good power and throttle response when flown in this aerobatic biplane

### Summary

I must be honest. This is the first new engine I've run for many years, but the Thunder Tiger F-75S has proven to be reliable and easy to handle, giving good power and throttle response – and, of course, that lovely four-stroke sound!

I've been flying mainly electric over the past 24 months or so but the Thunder Tiger has rekindled my affection for the satisfaction you get from a good engine. I can see this engine getting much more use this year. **RCMW**

## MODEL WORLD DETAILS

### PRODUCT INFORMATION

<b>NAME:</b>	Thunder Tiger F-75S
<b>MANUFACTURER:</b>	Thunder Tiger
<b>DISTRIBUTOR:</b>	Amerang
<b>WEBSITE:</b>	<a href="http://www.amerang.co.uk/thunder-tiger-f-45s-four-stroke-engine#.VdNc9flViko">www.amerang.co.uk/thunder-tiger-f-45s-four-stroke-engine#.VdNc9flViko</a>
<b>UK SRP:</b>	£182.99
<b>ENGINE TYPE:</b>	Single Cylinder Four - Stroke

### SPECIFICATIONS

<b>DISPLACEMENT:</b>	12.33 cc/1.752 cu in
<b>BORE:</b>	28.3 mm/1.114"
<b>STROKE:</b>	19.6 mm/0.772"
<b>PRACTICAL RPM RANGE:</b>	2,300 – 12,000 rpm
<b>OUTPUT:</b>	1.2 bhp/11,000 rpm
<b>WEIGHT:</b>	457.2 g/16.13 oz

# WARBIRDS GALORE

Neil Hutchinson visits one of the best air museums in North America

*Hawker Hurricane LF Mk XII was built in Canada in 1943. It served with the RCAF until it was struck of charge sometime in 1946. It was sold and sat in a farm from 1948 until 1965. The Hurricane was in a derelict state before it was fully restored to the beautiful condition that it's in now. It is painted in the colours of John Haviland, an American, who flew with 151 Squadron in the Battle of Britain*

## THE MILITARY AVIATION MUSEUM

**T**he Military Aviation Museum (MAM) is located about 230 miles South of Washington, Dulles International Airport, near the beach resort of Virginia Beach. The airfield itself is about 20 minutes from Virginia Beach in an area called Pungo.

The entrance to the site is marked by a red British postbox and behind that, dinosaurs! As you approach you can see a big tower with hangars behind it. Getting closer to the large first hangar, which does not look that old, you will almost certainly see World War 2 fighters parked on the 'hot pan' outside the main hangar (if the weather is good).

Looking farther down the driveway you can see more hangars with the main Fighter Factory hangar in the middle. MAM can be divided into two sections, the museum itself and the Fighter Factory.

### Early Days - The Fighter Factory

Jerry Yagen is the man behind the whole operation. He has always been something of a collector, previously collecting stamps, comic books and even Ferraris. He became interested in historical aircraft after he and his wife attended a WW2 dance in an aircraft hangar. This started an interest in old aircraft. The search was on to find his first classic aircraft, which turned out

to be a Curtiss P-40E recovered from the Russian Tundra in 1992. Jerry acquired the plane in 1996 and the airframe was then sent for restoration to AVSpecs in New Zealand, and finally flew again in 2003. Not long after buying the P-40, Jerry also purchased a Chance Vought Corsair and a Boeing Stearman trainer. Jerry bought the Stearman so he could learn to fly tail-dragger fighters!

The Fighter Factory was started in 1996 to maintain the fledgling Yagen air force. It was originally based at Norfolk Airport and then moved to Suffolk Airport, before moving into its new purpose built facilities at Virginia Beach. The Fighter Factory



A glorious sight for any warbird enthusiast: a line up of WW2 aircraft on the 'hot pan' outside the Military Aviation Museum (MAM)



The Military Aviation Museum seen from 500 feet



The whole MAM and Factory Fighter site (foreground). The orange marking to the right is where the RAF Goxhill control tower will be rebuilt



The main Fighter Factory building with the original 1934 Cottbus Hangar. Most of the German aircraft are stored in this hangar



The aircraft that started Jerry Yagen's passion for warbirds, the Curtiss P-40E restored to flying condition by AVSpecs Ltd. of New Zealand

now looks after over 60 flying WW1 and WW2 aircraft. They are presently restoring a 1950's Fiat G.46-3B trainer, a 1947 Lavochkin LA-9 and a Focke Wulf FW190 A-8 replica. These aircraft will eventually join the other 60+ flying warbirds in the collection.

Due to the enormous commitment required to keeping the huge fleet of warbirds operational, some of the restoration work is being done by other companies, including, as mentioned before, AVSpecs Ltd. in New Zealand, and Meier Motors in Germany. This was followed by an even more adventurous restoration: a de Havilland Mosquito FB26, KA114, which became the world's only flying Mosquito, until the Canadian Mosquito B35, VR796 flew in 2015. At present they're restoring a CAC Sabre back to flight worthiness. Meier Motors have restored to flight a Messerschmitt Bf 109G-4, fitting it with a Daimler-Benz DB605A engine and is soon to be shipped to the United States.

### The Military Aviation Museum

Looking at the huge inventory of WW1 and 2 aircraft, one might think that MAM has been around for a long time, but this could not be further from the truth. Jerry

founded the Military Aviation Museum in 2005 and it opened to the public in 2008. MAM was the next logical step as the number of aircraft and artefacts grew. Some of the aircraft are quite rare and include a flying de Havilland Mosquito FB26 and a Messerschmitt Me 262, as well the usual Spitfire, Hurricane, P-51 etc. The inventory even includes a Fieseler Fi 103 – better known as the V1 flying bomb.

The de Havilland Mosquito has to be one of the greatest multi-role aircraft ever built. Until recently, KA114 was the world's only flying example since the BAe owned Mosquito TIII, RR299, crashed in 1996. There is now another flying Mosquito B35, VR796, in Canada. The Museum bought the remains of an FB26 from the Canadian Museum of Flight and Transport in 2004. The Mosquito rebuild would require a whole new airframe to be built, and the remains were sent to AVSpecs Ltd and that began an eight year rebuild program.

KA114 finally took to the air on September 29th 2012 from Ardmore Airport, NZ. After doing some displays in New Zealand, KA114 finally arrived at Virginia Beach in March 2013 and has been a firm favourite ever since.

The MAM's North American B-25J 'Wild

Cargo' has a very interesting history. Built in 1944, it originally had a solid nose and carried surveillance equipment. It finished its military career in 1957 and proceeded to have a series of civilian owners before it was bought by Arthur Jones, an importer of wild animals from South America. He was also the owner of a zoo and hosted a television show called Wild Cargo, and this B-25 and two others were used to transport the animals.

In February 1963, Arthur was putting a show on in Cincinnati and wanted some extra publicity. He decided to have the aircraft declare an emergency when it arrived at Lunken airport, having already set up cameras to record the 'potential loss of life'. The co-pilot baled out as instructed and the pilot then performed a belly landing on the airfield. Arthur Jones got his publicity, but never went back for the B-25, which was impounded by the sheriff's department. The B-25 was finally sold off and eventually restored to flying condition. The solid nose was also replaced for the more traditional glass version.

I don't think many museums can claim to have three, Focke Wulf FW190's on their books. MAM has two FW190 A-8's and a FW190 D-9 'Dora' on display. One of the



The P-51D Mustang is regularly flown by Jerry Yagen himself. It's in the colours of Bill Bailey, who flew with the 353rd Fighter Group. He named his P-51 'Double Trouble' because he was dating two women back home in the States!



Close-up of the P-51D cockpit shows what beautiful condition the aircraft is in



Goodyear FG-1D Corsair. This aircraft was acquired by the museum in 2001 and underwent a massive rebuild. It is painted in the colours of Lt. Ray Beacham, a local resident who flew with the VF-17 Fighter Squadron



A close-up of the Corsair's Pratt & Whitney R2800-8W radial engine. This engine produces 2,250 hp and gives the Corsair a top speed of 425 mph



The Museum's Grumman FM-2 Wildcat was built in 1944 and served as a training aircraft just a few miles away at an airfield at Pungo. It was bought in 2010 and is thought to be one of the most original Wildcats still flying



Wright R-1820-56 radial engine of the Wildcat

D-8s and the Dora are in flying condition. The other D-8 is currently being restored to flying condition and is on display in the museum's Cottbus Hangar. The Dora, Black 12, was originally captured intact in January 1945 after the pilot, Lt. Theo Nibel made an emergency landing after a bird strike. This was the first complete D-9 to fall into Allied hands during WW2.

The other flying D-8 is a replica built by Flugwerks and has been fitted with an engine and modified cowlings from a Russian Tupolev TU-2 bomber. This gives the FW190 a slightly different look because this set up uses a 4-blade propeller. However, the modification gives the replica FW190

better engine cooling and reliability.

These aircraft are just a part of the vast collection, but there is also large collection of aviation artefacts. MAM has a working V1 flying bomb pulse-jet, plus several other German guided weapons from WW2. There is also a BMW TLJ-2 prototype jet on static display. Other interesting bits and pieces include a 1938 RAF Mk V fuel bowser, a London Double-Decker bus and there's even a GPO phone box, too.

Future plans call for the installation of the control tower from RAF Goxhill. The tower was dismantled brick by brick and shipped to Virginia Beach for re-construction. The

foundations have been laid and building is expected to start late June, 2015. This is just one of many new ventures being planned; MAM truly is a living museum. I hope the pictures that accompany this article can convey the superb aircraft and the high standard and dedication with which they are being looked after.

If you want to keep up with the goings on at MAM they have two websites. Both are very good and have lots of information and are worth having a look at:

MAM: [www.militaryaviationmuseum.org/](http://www.militaryaviationmuseum.org/)  
Fighter Factory: [www.fighterfactory.com/](http://www.fighterfactory.com/)

**RCMW**



The Douglas AD-4 Skyraider arrived at the Museum in 2000. Built in 1949 it saw action in the Korean War with VA-55 Squadron. It has been painted in the colours of VA-195 CO Harold Swede' Carlson



Nose art on the side of the Skyraider



Two beautiful and immaculate de Havilland aircraft – the Tiger Moth and Chipmunk. Both aircraft look as if they have just rolled off the production line



This de Havilland Tiger Moth has quite a varied history. Built in 1940 it was shipped to Australia and flew with the RAAF. It went to Singapore, India and then Canada, before it finished up in Bakersfield, California. It has been at its present location since 2004



This has to be one of the best Chipmunks I have ever seen. Finished in the colours of 663 AOP Squadron based at RAF Hooton Park, Cheshire



The Yakovlev Yak-3 first entered service in 1944 and is one of the smallest WW2 combat aircraft, with a wingspan of only 30' 2". This Yak-3 is something of a re-creation using some original parts, plus many new ones. It has an Allison V-12 engine



This is the world's only flying Lavochkin LA-9. It originally flew with the Russian air force before going to China. Some may remember it being displayed at Flying Legends in 2003 after its restoration in New Zealand. MAM acquired the LA-9 in 2010



Close-up detail of the Mikoyan-Gurevich MiG-3. This particular aircraft was found in 2001 near Murmansk. It was rebuilt in Siberia from parts of six other MiG-3's and is believed to be the only flying MiG-3 in the world



The MiG-3 with an Avro 504 'flying' overhead, inside the main MAM building



Polikarpov I-16, nicknamed 'The Rat'. It was a Russian front line fighter at the start of WW2. This particular aircraft was built in 1939



Another early Russian fighter, the Polikarpov I-153 'Chaika' – Seagull. The I-153 was found in a swamp near Murmansk and rebuilt in Russia, before it went to New Zealand and then to America



The Polikarpov I-15 bis was held in high regard by its Russian pilots because of its stability and combat handling. By 1941 it was only used for observation, defence and night attacks because it had become obsolete. This is another MAM aircraft that is believed to be the only flying example in the world



A lovely Boeing P-26D Peashooter replica, built in Boston by Mayocraft in 2006. The Peashooter was the USAAC's first all metal monoplane fighter. It is painted to represent an aircraft from the 94th Pursuit Squadron, circa 1934-5



A very rare Bell P-63A Kingcobra. Unfortunately, unlike many of the aircraft at MAM, the Kingcobra will never fly again because of the poor state of the airframe



A genuine Fieseler Fi 103 V-1 flying bomb, found hidden at the Nordhausen Munitions Factory in the Hatz Mountains, shortly after German reunification in 1990



Wright Flyer Model B in the foyer of the Military Aviation Museum



A Sopwith Pup hangs dramatically from the ceiling in the Military Aviation Museum's foyer



After WW2 the French Nord company was licensed to build their version of the Messerschmitt Bf 208, the Nord 1100. MAM acquired the aircraft in 2004 and it was repainted as Yellow 14 from JG53 'Ace of Spades'



An original and genuine Focke-Wulf FW190 A-8 'Blue 4'. This FW190 isn't airworthy at the moment but it is due to be fully restored to fly again



A very unique static display, a BMW TLJ-2 – Strahljager Projekt II. This aircraft has been reconstructed by Holger Ball, Germany from original and new parts using the original drawings



Work continues on various aircraft inside the Fighter Factory's main workshop



The FW190 A-8/N is built from a Flugwerks, Germany, kit. This one was originally owned by Bob Russell and features an engine from a Tupolev TU2 bomber



The de Havilland DH98 Mosquito, one of the greatest aircraft of WW2. Mosquito, KA114, was restored to flight by AVSpecs Ltd., New Zealand and was the only flying Mosquito in the world until the Canadian owned VR796 Mosquito B35 took to the air in 2014



The North American P-64 was used by the USAAC. This is another very rare aircraft because only 13 were ever built. The original engine suffered a failure, with a previous owner, and has been replaced with a Wright 1820-80A radial engine



A working pulse-jet from a V-1 flying bomb



The Focke-Wulf FW-44J was the last variant of the 1930's trainer. The FW-44 was the aircraft most Luftwaffe pilots trained in. It had excellent performance and was very aerobatic, winning many trophies pre-WW2



One of the newest arrivals at the Fighter Factory and undergoing restoration to flight, a 1950 Fiat G.46-3B trainer



The MAM Junkers JU52 was originally built by CASA, Spain in 1949. It served with the Spanish Air Force until it was sold to the Commemorative Air Force in 1976. It was flown the 8,000 miles to the USA in July 1980. The engines have been changed to Pratt & Whitney 1340 engines instead of the original BMW radials. It became part of the MAM collection in 2010



'Trim tab' on the JU52's rudder



Aileron and flap detail on the JU52's wing



Inside the JU52's fuselage



The MAM Consolidated PBY-5A Catalina is a genuine WW2 veteran. Built in 1943, it flew patrols from the Mediterranean to the Azores. The PBY has had a very varied post-war history, which included being seized by US Marshalls while being used by drug runners. MAM obtained the PBY in 2001 and it has been fully restored to its wartime colour scheme



Front turret of the Catalina. Most of the flying PBY's have had this removed



Another aircraft with an interesting history, the North American B-25J Mitchell 'Wild Cargo'. The B-25 originally had a 'solid' nose and was used for surveillance before MAM converted it back to its 'J' configuration when it was restored in 1997



Superb attention to detail – the 3 x 0.5 cal machine-guns with a genuine and rare Norden bombsight alongside



The Messerschmitt Bf108 owned by the Museum is actually a Nord 1002 built in 1945. In 1935 a German woman pilot, Elly Beibhorn, flew from Berlin to Istanbul in one day. She nicknamed her Bf108 'Tiafun' (Typhoon), a nickname that has stuck with the Bf108



Superb cockpit of the Bf108



Originally built in Castle Bromwich in 1943 the MAM Spitfire Mk IXE is another aircraft with a genuine WW2 history. Flying over Northern Italy, it took part in the air war over the Anzio landings. MJ730 had a varied peacetime history, which included the Italian Air Force and the Israeli Air Force, before being sold into civilian hands in the early 1970s. MJ730 has been with MAM since 2000

# GO FLY KITE

*Bruce Corfe travels to Singapore and finds a magical hybrid of kite and R/C technology. No strings attached!*



*These enthusiastic youngsters flew their GFK kites from a crowded Clarke Quay, Singapore, late at night*



*Without flash you can see the city centre location and the brilliance of the LED lighting on the models*

**A** while ago my wife and I were on a stopover in Singapore when from our hotel window overlooking nighttime Clarke Quay (right in the heart of the city's tourist zone) Gill spotted some LED-covered kites being flown from a bridge over the river. Pretty, we thought. Suddenly, the sedate kite flying became more manic, the two kites looping, rolling and then shooting up at speed to impossible heights. At this point it became clear these were R/C models and not tethered to their owners!

## **Friendly Flyers**

Ambling down to the bridge we talked to the two local lads flying the models. They were very kite-like in construction – carbon rods and rip-stop nylon – but were full R/C electric-powered aircraft with elevons, brushless motor/speed controller/LiPo batteries and 2.4 GHz radios. Their performance was quite startling and their appearance, covered in bright LEDs and with a traditional kite 'tail' sporting dozens

more lights, was equally so. I found from the local guys that the shop selling these items was nearby and paid a visit the following day.

The 'shop' seemed to be more of a very laid-back clubhouse, with someone asleep on a couch, another playing video games, plus a range of kites and accessories for sale, proudly displaying 'Made in Singapore' logos. But most impressive were the dozens of obviously second-hand kites hanging from the ceiling.

It turned out that it was indeed a clubhouse, and that R/C kite flying was very much a communal activity, with participants storing their models and equipment at the shop (space and accommodation being very tight in Singapore). The club members were the ones behind the regular nighttime group forays at various venues near the city centre.

This all seemed fascinating but time was short. However, I ordered a 'GoFlyKite' – one of several models available – and

kept in touch with the organisation through email and social media. Here is a potted history from the company website, abbreviated by your scribe...

## **GoFlyKite Credo**

Michael Lim, founder of GoFlyKite, has more than 20 years of design and sales experience. He enjoyed flying R/C planes and helicopters, and realised that his interests lay in flying more than anything else. Hence, he decided to switch his business to combine his hobby with his profession. Flying R/C was never easy and involved high maintenance costs. It was also a kind of hobby that did not require group activity, which is why he has created a hobby that can be enjoyed in numbers, is easy to learn and has low maintenance costs.

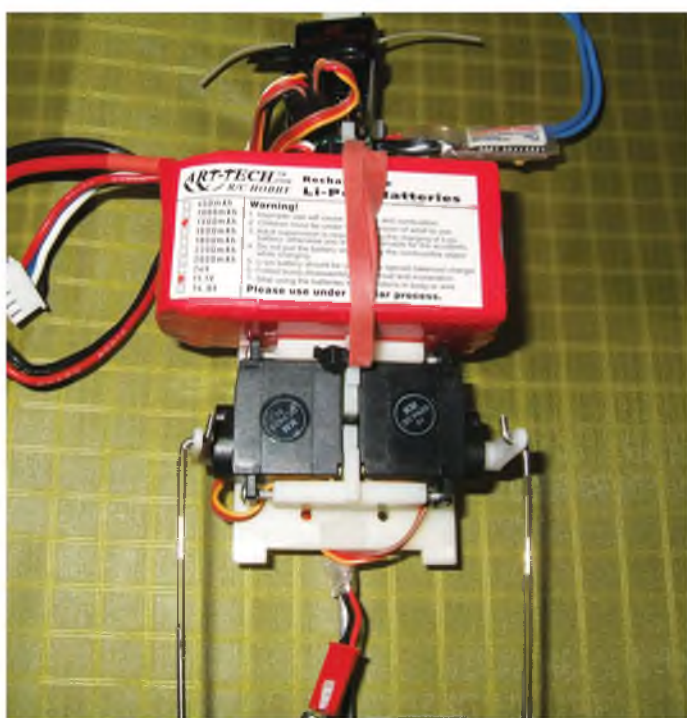
GoFlyKite.com Pte Ltd (established in 1998) aims to provide a unique R/C kite flying experience for all flyers. Taking to heart flyers' needs, comments, complaints



*My kite arrived flat-packed with its carry case in a giant 'pizza box'. Just add the front hoop of carbon and the vertical stabiliser and construction is complete*



*This is the chunky GFK MT-201 Pro brushless outrunner, prop-saver equipped, attached by cable-ties*



*The electrics: Spektrum Rx, 12 A GFK ESC, 3S LiPo, two hefty servos and a red JST socket for LED connection*



*Fairly complex system of plastic joints/hinges and part of the LED loom*

and compliments, they strive for continuous improvement in their products and services. Their motto is, 'When there's no string, there's no limit!'

R&D was the biggest challenge as Michael did not have any existing aeromodelling design experience. But after many experiments the first kite was successfully launched in 2000. The Company was then established in 2001 and was privatised in August 2006. What they have created is one of a kind and every one of their R/C kites is built to address the problems that traditional R/C flying models face:

- Light and easily portable
- Can be flown in the day and at night
- Can fly at great heights even in strong wind conditions
- Crash-resistant
- Uses rechargeable batteries
- Flies quietly and for a long period of time
- Parts are easily replaceable and manageable at a low cost

- Easily manoeuvrable, able to hover, loop, roll, fly inverted, axial roll, and fly in confined areas

There you have it...

### Pizza Box Delivery

My kite arrived through the post in the UK complete with a nylon carrying bag in a huge 'pizza box' and included all accessories, barring the battery and receiver. The model is so tough that the likelihood of damage in the post is slim. The only task is to attach the vertical stabiliser, which is deliberately left removable so that you can transport the kite to the flying field as a 'flat-pack'.

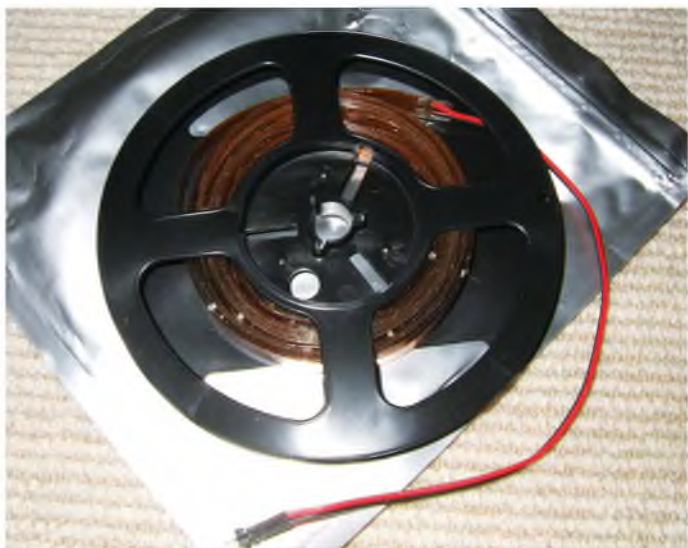
From the front, you have a curved carbon-rod frame that protects the big 9" x 6" GWS prop. The MT-201 Pro brushless outrunner motor is a chunky affair. I went for the high-power option (as you do!), attached to the carbon spine with a selection of cable-ties so it is easy to remove

or replace. Further down the spine are a pair of sliding attachments, which puzzled me at first (no instructions were provided), but which I eventually figured out to be battery holders. I used a thick rubber band, plus Velcro, to hold my 3-cell 1300 mAh LiPo in place.

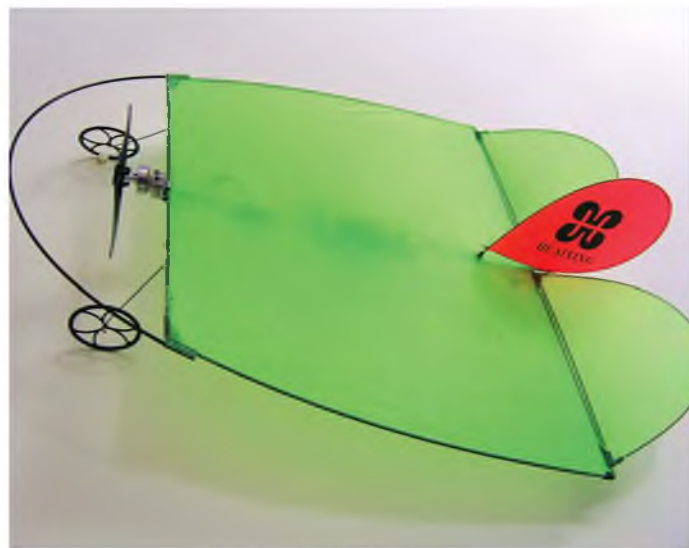
Both the motor and the 12 A speed-controller are GFK branded, which shows professionalism, and the electronics are pre-soldered and provided with a Deans battery connector. Apart from the battery all I had to add was my trusty lightweight Spektrum receiver and connect up the ESC and the two sturdy elevon servos.

### Construction

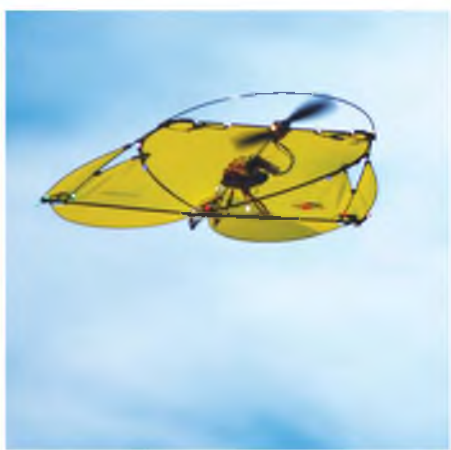
Construction of the kite is of carbon rods and rip-stop nylon, with the frame held together by a collection of ingenious plastic joiners of differing shapes wherever the carbon meets and needs attaching. The style of the R/C kite is not unique and owes much to the early indoor electric



The LED strip that forms the kite tail – five metres long!



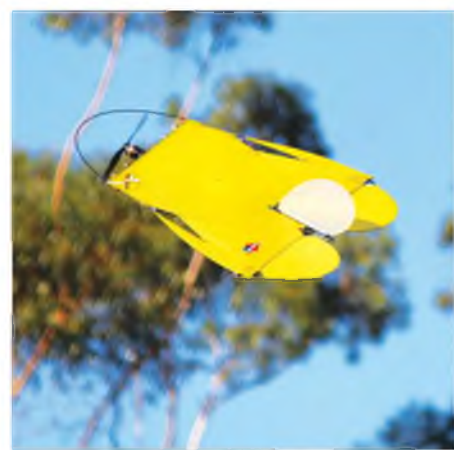
Similar design but much simpler. The earlier indoor BigDotUncle kite



Soon up in the air, the GoFlyKite showed an unnerving turn of speed!



From below and with the smaller prop fitted, the construction is apparent



In its element at the local park. Easy to fly, robust and very, very manoeuvrable

I.F.O. (remember them?). I also have a similar but simpler nylon/carbon 'kite' from BigDotUncle in Hong Kong, which is a great performer indoors.

However, what neither of these models have is fifteen multi-coloured, ultra-bright LEDs dotted all over their surface! These little suckers are really bright and even show up on a sunny day. But at night there is only one word to describe them – awesome! The LEDs are powered by a take-off from the ESC loom and connect up via a small red JST socket and plug.

The pièce de résistance is the kite's tail. This is a 5-metre-long strip (yes, you read that correctly – five metres!) of brilliant LEDs, red on my model, which piggybacks onto the JST plug for optional night-time displays. Fantastic!

### In The Air

My first test flights in the park were as supplied, but minus the LED kite-tail, and using the 9" x 6" prop and recommended (smallish capacity) 1300 mAh 3S LiPo, although this significantly increased the weight of the model. After checking the controls and having done a range-test (people seem to forget about those now we all use 2.4 GHz, don't they?) a hand-launch saw the kite rocket skywards! Thrilling back, I was able to dial in some corrective right trim plus a few clicks of 'down' – I had over-estimated the amount

of reflex required, plus those elevons are very effective. But the main impression was of the sheer speed that the kite is capable of – anything over half throttle resulted in a velocity that made me fear for the integrity of the nylon covering! The thing has minimal frontal area and the acceleration from slow to lightning fast was pretty incredible.

Slowing it down enabled me to explore the aerobatic envelope. The GFK will do all the 2-channel aerobatics available: looping and bunting with a tiny radius and fast axial rolls (again, at a speed that made me nervous!). Plus the ESC is only rated at 12 Amps and surely this set-up must be drawing something close to that? Inverted flight is equally easy and requires holding in a bit of 'down.'

### Light Up the Sky

Plugging in the LEDs was a bit underwhelming during the day, but they are easily visible if you look for them. For a calmer ride I substituted a 2-cell LiPo of similar capacity and to reduce the current draw (and speed) I changed to an 8" x 6" GWS prop. This set-up gave me a lighter, still very manoeuvrable model but without the need to avoid full throttle. At night in the park (which was vast) and with the tail plugged in, the LED display was magnificent! The model would fly well on the 8" x 6" prop with the 2-cell pack or the

3-cell; the tail must be adding considerable drag yet has little effect on handling.

Two people came for a closer look and to ask about the 'kite'. Anyway, the first weekend's flying had been a complete success.

### Behind Closed Doors

But would GFK perform indoors? At least half my flying is done indoors these days – I've really taken to this discipline and have made new flying mates at the two venues I frequent. Producing the GFK at the gym produced some enquiring glances and questions. Leaving the 8" x 6" prop on and using one of my smallest 2-cell LiPo packs (350 mAh), I found that the kite performed very well indoors and managed all the manoeuvres, although it did need all the height available, more so than its lighter sibling from Hong Kong. On this prop the duration was adequate, but it was a bit inelegant, flopping down on its belly and electronics at the end of a flight! All daytime flights have been carried out minus the LED tail.

### Conclusions

Would I buy another? Definitely! The GFK models (there are several kites in the range, supplied with differing levels of equipment too) are all that GFK Chairman, Michael Lim claims – light and portable, day/night capable, able to cope with wind,



On the bench at night the LEDs look blazingly bright!



Night shot in the air and looking like a UFO!



How about these for modified GoFlyKites? There is video of these fantastic creations in action in Singapore – see the links (GFK photo)

crash-resistant, quiet, easily repaired and very manoeuvrable. And they are certainly attention grabbing!

I also witnessed the social aspect of GoFlyKite flying in Singapore where large groups of (mainly young) flyers meet regularly to encourage and train beginners. They are regularly invited to display at nighttime events (sometimes in front of thousands) both at home and overseas. The organisation is very well represented on social media such as Facebook and YouTube, and has many followers. Club meets are advertised and demonstrations are videoed and posted on-line. I encourage readers to have a look.

If the quality is good enough I hope to include an image from Singapore of two kites decorated as Chinese dragons with dozens of LED glow-tubes – very skilfully

executed and hugely impressive. The flight video really does them justice.

Wouldn't it be great to see a movement like this in a UK city? There is currently no UK importer listed for GFK products, but they certainly post to overseas locations. I recommend readers to check the links below and see the kites in action for themselves. The YouTube video showing laser-equipped quad and tri-plane Skydancer kites is breathtaking.

And remember – when there's no string, there's no limit!

**RCMW**

## CONTACTS

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

Facebook and YouTube – search GoFlyKite



This is my (laughably poor!) attempt at photographing the LED tail at night. A large part is still on the ground

# BIG FUN *without* THE WEIGHT



**CARBON-Z<sup>®</sup> T-28**  
BNF Basic  
(EFL1350)

**CARBON-Z CUB**  
BNF Basic  
(EFL10450)

Patented Carbon-Z<sup>®</sup> construction proved that airplanes like the 85-inch span E-flite<sup>®</sup> Carbon-Z Cub can deliver a truly exceptional big foam experience. Now that attention to lightness, airframe strength and convenience is available in a warbird. The big 78-inch span Carbon-Z T-28 boasts operational flaps, electric retracts and can be easily ready to fly in the time it takes to charge your 6S flight battery. Combined with carefully tuned AS3X<sup>™</sup> technology, you get flight quality that feels like it's been tuned by experts.



**60" Span FW-190A**  
Electric or 0.75 IC

Plan only	£20.00
VAC Set (Canopy, Cowf, Decking)	£38.00
CNC Pack (Formers, Ribs, etc)	£75.00
Wood Pack (Sheet stock & strip)	£64.00
Complete Pack above (Save £10)	£187.00



**72" Span MK 5 Spitfire**  
1.20 IC or Electric

Plan only	£25.00
VAC Set (Canopy, Cowf, Exhausts)	£30.00
CNC Pack (Formers, Ribs, etc)	£95.00
Wood Pack (Sheet stock & strip)	£85.00
Complete Pack above (Save £10)	£225.00



**63" Span MK 9 Spitfire**  
0.65 IC or Electric

Plan only	£18.00
VAC Set (Canopy)	£12.00
CNC Pack (Formers, Ribs, etc)	£80.00
Wood Pack (Sheet stock & strip)	£56.00
Complete Pack above (Save £7.00)	£159.00



**62" Span Hurricane**  
Electric or 0.65 IC

Plan only	£18.00
VAC Set (Canopy)	£12.00
CNC Pack (Formers, Ribs, etc)	£70.00
Wood Pack (Sheet stock & strip)	£70.00
Complete Pack above (Save £10)	£160.00



**66" Span Lysander**  
0.52 IC or Electric

Plan only	£18.00
VAC Set (Canopy, Cowf, Spats)	£40.00
CNC Pack (Formers, Ribs, etc)	£73.00
Wood Pack (Sheet stock & strip)	£41.00
Complete Pack above (Save £10)	£162.00



**62" Span Typhoon**  
Electric or 0.65 IC

Plan only	£18.00
VAC Set (Canopy, Cowf, Spinner)	£28.00
CNC Pack (Formers, Ribs, etc)	£65.00
Wood Pack (Sheet stock & strip)	£78.00
Complete Pack above (Save £10)	£179.00

## What's NEW



TND are proud to announce our new 'ACE' range of half-bodied pilots for WW2 British, German, US and modern Jet style, ranging from 1/10th to 1/5th Scale



**42" Span 70mm DF Hawk**

Plan only	£20.00
VAC Set	£35.00
CNC Pack	£55.00
Wood Pack	£34.00



**49" Span Vulcan**  
DF or pusher

Plan only	£20.00
VAC Set	£30.00
CNC Pack	£72.00
Wood Pack	£65.00

## Other Models In Our Range

Model	Plan Price
40" BAC Hawk	£12.00
40" Vampire	£12.00
76" Airbus A400M	£23.00
72" DC3 Dakota	£20.00
58" Aerovan	£14.00
38" Mosquito	£12.00
38" Mosquito TA154	£12.00
47" Mosquito	£18.00
46" Spitfire	£15.00
30" SE5a	£10.00
30" Fokker D7	£10.00
32" Corsair	£10.00
32" Mitsubishi Zero	£10.00
40" Cosmic Wind	£12.00
40" Midget Mustang	£12.00
24" EE Lightning	£10.00
24" MiG 25 Fox Bat	£10.00
59" Miles M57 Aerovan	£18.00
72" Avro York	£20.00
103" Hurricane	£45.00



**72" Span Lancaster**  
4x 200w Electric

Plan only	£20.00
VAC Set (Canopy, Cowf, Turrets)	£28.00
CNC Pack (Formers, Ribs, etc)	£70.00
Wood Pack (Sheet stock & strip)	£60.00
Complete Pack above (Save £10.00)	£168.00



**72" Span Boeing B-17**  
4x 200w Electric

Plan only	£20.00
VAC Set (Canopy, Cowf, Turrets)	£28.00
CNC Pack (Formers, Ribs, etc)	£70.00
Wood Pack (Sheet stock & strip)	£60.00
Complete Pack above (Save £10.00)	£168.00



**72" Span Sunderland**  
4x 200w Electric

Plan only	£20.00
VAC Set (Canopy, Cowf, Turrets)	£28.00
CNC Pack (Formers, Ribs, etc)	£70.00
Wood Pack (Sheet stock & strip)	£80.00
Complete Pack above (Save £10.00)	£188.00



**104" Span HP Halifax**  
4x0.32-40 IC or Electric

Plan only	£35.00
VAC Set (Canopy, Cowf, Turrets)	£43.00
CNC Pack (Formers, Ribs, etc)	£130.00
Wood Pack (Sheet stock & strip)	£135.00
Complete Pack above (Save £20.00)	£323.00



**61" Span P-51B & D**  
900w Electric

Plan only	£20.00
VAC Set (Canopy, Cowf)	£30.00
CNC Pack (Formers, Ribs, etc)	£75.00
Wood Pack (Sheet stock & strip)	£64.00
Complete Pack above (Save £20.00)	£177.00



**66" Span Harvard**  
0.65 IC or Electric

Plan only	£20.00
VAC Set (Canopy, Cowf)	£30.00
CNC Pack (Formers, Ribs, etc)	£70.00
Wood Pack (Sheet stock & strip)	£68.00
Complete Pack above (Save £10.00)	£178.00



'Building your very own model from plan is one of the most satisfying achievement any modeller can experience..... so go on, give it a try and don't miss out on this wonderfully therapeutic side to this great hobby of ours'..... Tony Nijhuis



**T**he Beaver has always been a big favourite of mine. There is something special about it. It is big and sturdy; it almost looks a little clumsy. Yet it has a certain elegance with its long and sleek wing, and its tall and rounded rudder. The front of the plane, with the radial engine and the round cowl, exerts power. I once saw a take-off at close range of a Beaver on floats and that was almost a frightening experience.

More than 1,600 Beavers were built in the period 1947 to 1967. It was the workhorse in the wildernesses of Canada and Alaska, and some also came to Norway, where I live. There is still one Beaver in the Norwegian registry, LN-NCC, and I have taken the liberty of using that registration number on this new model.



*A combined building board and jig was made for the project*



*The right front panel and the completed front structure called the 'cage'. The cage forms the strong part of the front structure*



*Aft vertical sides of the fuselage are glued together on the board*



*The jig is used to ensure a straight fuselage*



*The left wing half being built flat on the board*



*Completed 'skeleton' fuselage*

## Design Considerations

I built a fairly large Beaver three years ago but due to lack of suitable flying sites in our area it is mostly used in winter time when frozen lakes make fine model airports for planes on skis. The main criteria for this new Beaver was that it should fit inside my small car without dismantling anything and be suitable to fly at our existing (park like) flying site.

The car criteria limited the wingspan to 1300 mm (about 51 inches). I wanted to build the plane as light as possible but it was also designed to tolerate rather heavy landings without structural damage.

The other main dimensions were scaled up proportionally from a three-view scale drawing. But 15 mm nose length was added in order to reduce - or hopefully totally avoid - the addition of lead in the nose in order to set the proper balance point. This was based on experience with my large Beaver.

The key to the design is the front section of the fuselage, i.e. from the trailing edge (TE) of the wing to the firewall. The front is designed as a boxy cage and is comprised of birch ply and spruce stringers. This cage is intended to absorb all forces exerted in different directions and situations from the engine, undercarriage and wing, and from whiplash forces from the fuselage behind the TE.

I am aware that this method increases the total weight somewhat compared to conventional design but it is well worth it in my opinion. In this case the cage itself weighed 150 grams. If this is the double of conventional design (which I think is on the high side), it increases the weight by 75 grams. This means an additional flying weight of about 5%, which is acceptable to me.

## Construction

For this project I prepared a new work board, which, when turned over, serves as a jig for the fuselage. The board, which is made up of glued together fir pieces, is soft enough to fasten small pins when gluing together balsa parts. On the jig side the centreline is drawn up and homemade right angle pieces have been made, which can be screwed into the board in any position (see photo).

I like to start the construction with the fuselage and to carry this to a stage where one can fit in the wing. Following the wing construction, the fuselage will be completed. The first construction photo shows the inside of the right side of the cage mentioned above, before the cross members are added on. The jig is used to set up and glue together the cage. The vertical sides of the aft part of the fuselage were glued together on the board, and thereafter glued together with the cage using the jig to ensure straightness. A picture nearby shows the resulting bare fuselage.

The building of the wing is rather straightforward. The right and left wing were built flat on the board. To help joining the two sides accurately, and to serve as a bed for long-term storage later on, a special jig (more like a crib) with the



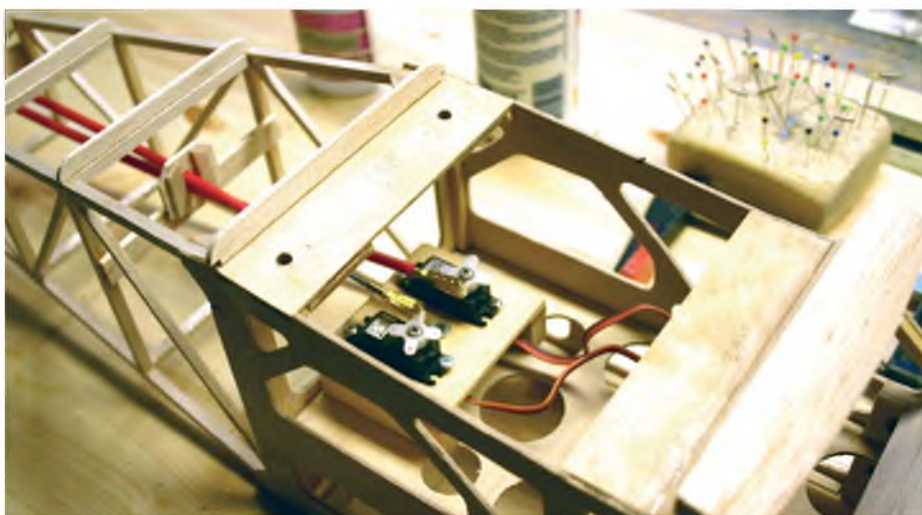
The two halves being joined together on a crib with the specified dihedral built-in



Hollow wingtips are made up from sawn out balsa pieces



Making right angle measurements to decide the location of the wing bolts



Rudder and elevator servos are installed and the pushrods are locked in position before the planking of the fuselage is started

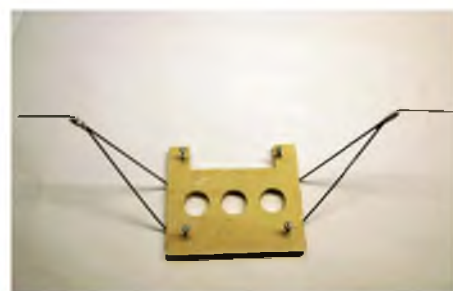
specified wing dihedral was constructed. One photo shows the joining of the two wing halves on the crib with the use of the dihedral braces. The wingtips are made up of several 10 mm sheet pieces in order to make them hollow.

The 90 degree check on the wing positioning is done before bolt holes with captive nuts are made.

Continuing on with the fuselage, the servos for the tail rudder and elevator are installed and the fastening of the pushrods is done before the planking of the fuselage is carried out.

The undercarriage is fastened within two sheets of plywood glued together, forming a cassette, which afterwards is screwed and glued to a strengthened part of the lower fuselage.

The planking of the fuselage is done with 1 mm sheet aft of the TE and 2 mm in the forward part. The cowl is made up of several 10 mm rings/pieces glued together



The undercarriage is glued between two layers of plywood, making a 'cassette', before the cassette is screwed and glued to the fuselage

in a cross-wise fashion. The tail components are also composed of members glued cross-wise in order to add strength and stiffness.

The covering of the model and the lettering was made using Ultracote heat shrink film. The wingtip markings were made with Tamiya spray paint.

### Flying

With the intended battery (3S LiPo, 2100 mAh) the model balanced right at the specified C of G location on the drawing, which was based on the experience with my large Beaver. A little bit of luck here, I must admit!

The maiden flight was made on an early spring day, with a light wind from the southwest. This meant taking-off almost directly into the sun, which added to my nervousness.

The model took off straight ahead and climbed a little too steeply, as I was eager to get away from the sun. It turned out that the Beaver flew straight right away and was sitting nicely in the air. No trimming was required. After a few circuits a successful landing was made.

On the second flight the plane was stalled. The Beaver just mushed through straight ahead and started gliding. The flaps were also successfully tested and my club companions Jøran Rosenberg and Jøran Eide took some flying shots.

All in all a happy day and I recommend the Beaver to everyone! **RCMW**



*Sheeting of the fuselage in progress*



*Elevator and rudder are made up of cross-wise members to increase strength and stiffness*



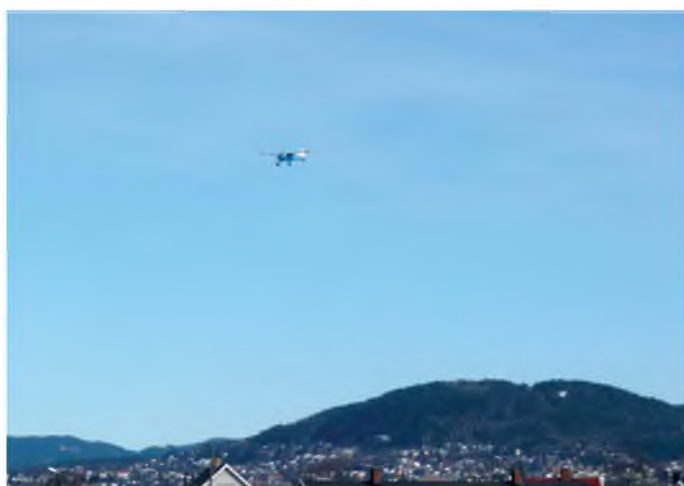
*The cowl is made up of balsa and ply rings glued together in a cross-wise fashion*



Completed Beaver ready for its maiden flight



Pilot and plane ready for take-off. Is the nervousness showing?



Riding high above the outskirts of Oslo



The first landing was nearly perfect

#### MODEL SPECIFICATION

<b>WINGSPAN:</b>	51.81" (1300 mm)	<b>COVERING</b>	Ultracote heat shrink film
<b>WING LOADING:</b>	70 g/sq dm	<b>MATERIAL:</b>	
<b>WEIGHT:</b>	45.86 oz (1300 g)	<b>MOTOR:</b>	Turnigy D3542/6 1000 KV
<b>RADIO FUNCTIONS:</b>	Throttle, Ailerons, Elevator, Rudder, Flaps	<b>PROP:</b>	11 x 8 (wood)
<b>SERVOs:</b>	6 x 9 g Corona Digital	<b>ESC:</b>	Turnigy Plush 40 Amp
<b>BASIC CONSTRUCTION</b>		<b>BATTERY:</b>	Hyperion 3S 2100 mAh LiPo
<b>MATERIALS:</b>	Balsa, Birch Ply, Spruce Stringers		

## PLAN DETAILS

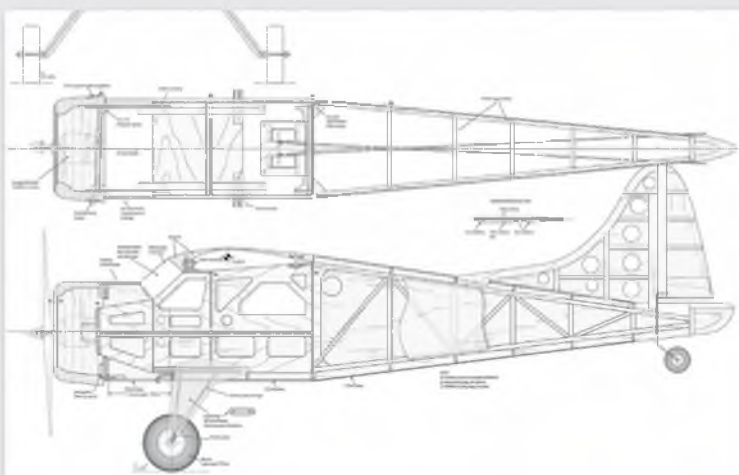
**NAME:** De Havilland DHC-2 Beaver  
**BUILD CATEGORY:** Intermediate  
**PLAN NUMBER:** MW3754  
**PLAN PRICE:** £11.99 (\$20.99)

Plans and parts (if available) are subject to Postage and Packing charges at standard rates.

Copies of plan number MW3754 are available from RC Model World (Plans Service), Traplet Publications Limited, Traplet House, Willow End Park, Blackmore Park Road, Malvern, WR13 6NN, UK.

Telephone: + 44 (0) 1684 588599, Fax: + 44 (0) 1684 578558, Email: [orders@traplet.com](mailto:orders@traplet.com) or order online at [www.trapletshop.com](http://www.trapletshop.com)

For more information on the Traplet Publications Plans Service see our advertisement in this issue.





**BALSA USA**

Build Your Dream Into a Reality!

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

**1/4 Scale Sopwith  
F-1 Camel**

*You'll be able to go toe to  
toe with anything the Axis  
Powers have or are likely to  
have in the future!*

**Kit No. 401\***

**Wing Span: 84 inches**

**Flying Weight: 15-18 lbs.**

**Please visit Pegasus Models**

**your main supplier for a complete line of Award Winning Balsa USA Products**

Mon., Wed., Thur. & Fri. 09:30 - 18:00  
Tues. Late Night 09:30 - 20:00  
Sat. 09:30 - 17:00 Sun. CLOSED

**Mail Order Hotline**  
**01603 419515**

Fax 01603 484466

**AUTHORIZED BALSA USA DEALER**

88 Catton Grove Road, Norwich, Norfolk, NR3 3AA



**Pegasus Models**



# E-SHARK

**A simple to build 1030 mm span sports flying wing from 5 mm Depron, designed by Graham Dorschell for 1500 KV outrunners and 3-function R/C**

**T**his model flying wing came about by trying to build a simple design that was quick to construct, light and cheap, utilising the local materials that were available and with a fairly new idea (to me at the time) of folding a foam wing as opposed to a built up or solid foam core wing. I've been travelling out to Asia where balsa and Solarfilm are very expensive, but vinyl and foam board by comparison are very cheap and the local model club were hungry for something to fly.

I had to build the model with the minimum of tools and only having a small table, ruler and knife to create a small masterpiece.

This airframe could easily be adapted as a slope model too, other than a general sports air frame; just change the prop to a folding one and programme the ESC to brake, and fly with the power off.

The model is constructed from mainly 5 mm Depron. It uses an ultra-quick, simple box frame fuselage and folded wing, employing the minimum time and effort but with the result of a crisp flying model with few vices. The model is glued with UHU-por and contact '3M Spray77' adhesive to laminate the foam, and a hot glue gun for the motor ply mount and wing bearers.

## Wings

I start out by first making a card template of one side of the wing, minus the elevon, and draw around the shape onto 5 mm Depron sheet where the fold will be. Then I flip the template over to align it with the first panel at the long edge and draw around again for the second side, which when folded will create the wing. I have made a YouTube video that explains this process (see Contacts or scan the QR code).

Taking the outlined drawing of the wing shape use a ruler and sharp blade to cut it out, allowing about an inch spare of foam all the way around. Depron is used in other applications for flooring and has a



*E-Shark at speed*



*E-Shark has superb and stable handling, as this fast low pass for the camera shows*



*Minimum of tools required; hot glue gun, sandpaper, scissors, ruler and sharp scalpel or hobby knife*



*A selection of the adhesives required*



*Cut out the paper templates*



*Draw onto a 5 mm Depron sheet. Then flip the template over to align with the first panel where the fold would be and draw for the second side*

greasy side, and I have found from talking to others that you can use a water-based varnish to paint onto the side that is to be covered, before using any glue or Solarfilm, and this will aid adhesion.

Place the treated side of the cut out wing sheet facing down, score along the folded line, but not all the way through. Turn over and cover the treated side with film, taking out any bubbles with a piece of card. Then you are ready to fold the wing.

Again, with the now covered side on the building board, place a steel ruler along the scored line and with firm pressure fold over and flatten the second side. Using the card template, press it to where you can see

it will cover the underside and top sheets. Then, with a steel ruler and knife, cut all the way around, but NOT for the folded side.

You are almost there! Now mark a line for the foam spar, then glue it in place with UHU-por. With the steel ruler and a knife, chamfer the now 10 mm trailing edge down to 6 mm by cutting away the bottom part of the wing so it will then meet the top. Add glue, then use glass tape, folded over the two sides to prevent it popping open. The spar should have also been glued in place with contact adhesive before it's all taped up. Offer the elevon to the trailing edge of the wing and use hinge tape or

glass tape and cover the wing. The covering gives the wing strength, but you could leave the whole model naked. I prefer it covered myself.

You can make root and tip end caps for the wings. The root rib helps strengthen the wing but you will have to make the necessary slots to accept the hardwood bearers. The tips can be left open if you wish.

### Fuselage

Another card template will be required for the sides of the fuselage. Cut four sides out, and the top and bottom, from 5 mm Depron foam sheet and laminate as before.



Use a sharp blade to cut out, allowing about an inch spare all the way around



To aid adhesion use a water-based varnish painted on the side that is to be covered before using any other glue or film



With the treated side down score along the folded line. But not all the way through!



Turn over and cover the treated side with film. Take out any bubbles with a piece of card



With the covered side face down, place a steel ruler along the scored line and with firm pressure fold over and flatten the second side flat



Press the card template to where it will cover the underside and top sheets, then with a steel ruler and knife cut through and around, but NOT for the folded side



Mark a line for the foam spar, then glue it in place with UHU-por



Chamfer the 10 mm trailing edge down to 6 mm by cutting away the bottom part of the wing so it will then meet the top surface, and then glue

Remember the bottom will be shorter as the ply motor mounting plate will fit across the foam and you will need to leave access for the motor to be mounted with the self-tapping screws. With one side made up and flat on the building board you can start gluing the top and bottom sides in place using UHU-por and fit a battery tray and foam support. The bearers will pass under the tray, giving support to the structure.

When you have hot glued the support and ply motor mount and fillets you can finish and close up the final fuselage side. Use masking tape to hold it and leave to settle. When you are happy that the sides

are true (make sure it's not twisted) you can take off the tape and shape the excess foam to make it aesthetically pleasing. The now 10 mm sides will allow the corners to be rounded off, and you can shape the motor cowling by using a 40 mm spinner and mark and shape the nose to be around the same size. Add fillets as necessary.

You can now mark and cut the slots for the motor wires in the motor mount. The fuselage can again be painted with water based varnish; you could paint the model but Solarfilm or vinyl is stronger, so be sure to use the varnish to seal the foam first.

On my prototype model the tail fin is

made with plastic Correx board (balsa will also do the trick), built up from sheet and covered using a hot glue gun to secure it in place. Slot the fuselage top and bottom, check the fit and glue – simple!

Battery access and ESC fitting is through a top hatch. With a steel ruler mark out the position where the hatch is to be located and cut with a long blade through the 10 mm fuselage. I used a Correx hatch, but 5 mm balsa can also be used, hinged at the front and folded over with a tab of glass tape so that you can open it at the other end. Make a platform of foam here to prevent the hatch dropping through.



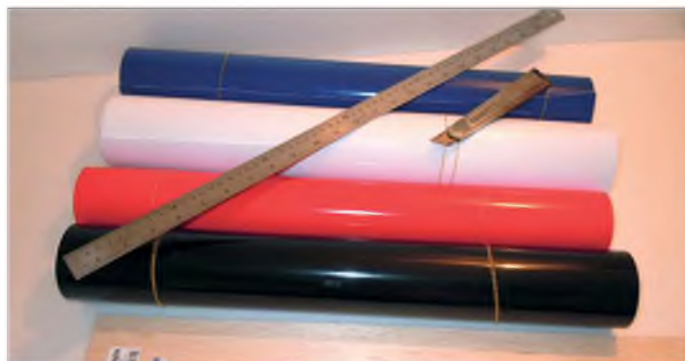
Use glass tape folded over the two sides to prevent the wing from popping open



Offer the elevon up to the trailing edge and connect using hinge tape or glass tape



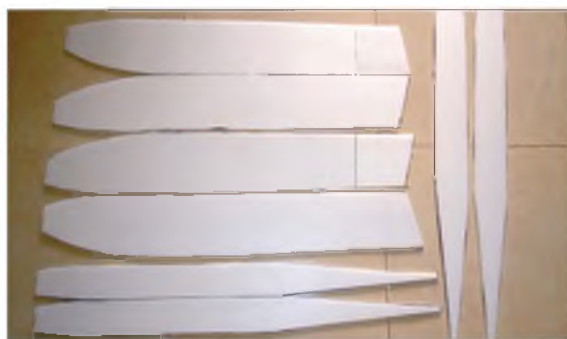
You can make end caps for the root rib to strengthen the wing, opening up slots as necessary for the hardwood bearers. The tip can remain open



A selection of film coverings, and balsa used for the strip elevon



Film covering gives the wing added strength



For the fuselage, cut and laminate four sides and the top and bottom from 5 mm Depron



With one side flat on the building board glue the top and bottom faces in place using UHU-por



Make up the battery tray with Correx and rubber mat, and fit a Velcro strap

You can cut a duct over the top of the nose where the ESC will be and force air out of a hole under the rear fuselage.

With the fuselage upright and flat on the building board push through the 5 mm wood spars. A little tinkering and adjustment will be needed to line the spars up. Then use the hot glue gun, making sure that the spars are glued in straight and true.

### Joining The Wings And Fuselage

Offer the wings up one at a time to the bearers to position them and mark their positions on the foam root ribs with a felt

tip pen. Cut open all the way to the top and bottom skins because there needs to be space for the wood bearers, plus a foam fillet top and bottom. The fillets are chamfered and glued onto the bearers before they are positioned and dry-fitted. Once you are happy with the fit and angle of the left wing to the body, epoxy or hot glue it in place. Repeat with the right wing, checking from each wing tip to make sure they are straight and not twisted.

### Radio Installation

There are two 9 g servos (for elevons) to be placed into the fuselage; you cannot

place them in the wing. If fitted in the wing you could deform or open the wing out and the aerofoil shape could be lost. The advantage of the fuselage mountings is that the wiring is already glued in the fuselage.

The ESC is accessed through the top hatch and the motor wires go through the hole in the ply motor mount. The 35 mm 1500 KV motor is mounted with slight right thrust. The battery is placed on a rubber 'non-slip' mat; you can buy this on a roll from car accessory shops. Glue in a Velcro strap and connect your choice of receiver. Then set your transmitter for delta wing mixing.



*Fit the battery tray and foam support*



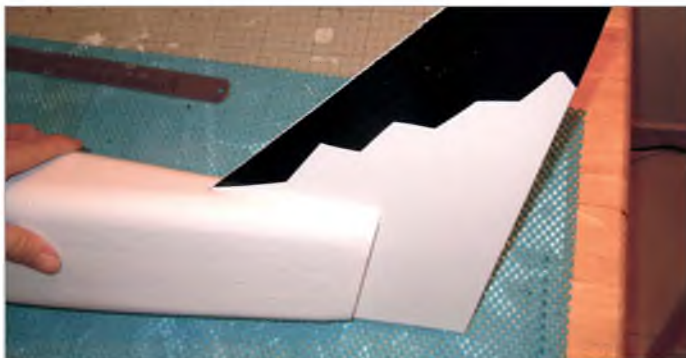
*Hot glue the ply motor mount and fillets*



*Add the second fuselage side and use masking tape to hold*



*Shape the motor cowling by using a 40 mm spinner and shape around the same size, adding fillets as necessary*



*The tail fin is made with plastic Correx board or balsa*



*Make a Correx hatch for access to the battery and ESC. Or use balsa or thin ply*



*Fit the 5 mm wood spars, using hot glue to ensure that they are held straight*



*Dry fit foam fillets top and bottom. Chamfer to fit the bearers. Check fit and angle of wing to the body, then epoxy or hot glue in place*

Zero all servo settings and calibrate the wing with a slight up angle on the elevons. The motor should be a good fit to the 40 mm spinner; cut away any foam if it is too close. Check the model for balance and move your LiPo back and forth as necessary to achieve a C of G of 110 mm back from the leading edge at the wing root.

### **Flying**

This is a hand launch model and the use of a little sandpaper stuck to the fuselage sides is a good idea for extra grip.

Elevon control throws were set at around 11 mm up and down. Check that the controls are mixed correctly and then get ready to give the model a good throw.

This model is great to fly with no real vices. It makes crisp turns and is very agile. With the right pilot and a good power set up this model has very impressive performance and will go vertical.

It could as easily be flown on the slope, power off, by merely swapping the E-prop for a folding type propeller and setting up the ESC for braking action with your programme card.

The E-Shark has great handling but it is worth the effort to set the controls and end points correctly, as I discovered on the model's trimming flight. In my haste I had set up the travel on one elevon incorrectly and when pulling up she rolled over to

the left rather than making a smooth, flat rotation.

### **Summing Up**

All in all a good flyer and one that is great to just throw in the car – it's dead easy to slap a battery in her and go. You don't need anyone to launch her. After a few goes doing it yourself you will become very confident at hand launching.

E-Shark is a cheap and very gratifying flyer, and with the practicality of the motor up front, the mid-wing for ease of hand launching, and a hatch on top for easy LiPo access, it's all in the right place. All you need is a calm, sunny day! **RCMW**



Servos and motor accessories



Cut an air inlet in the nose and a similar exit hole in the underside of the fuselage at the rear



Move the LiPo back as necessary to achieve the C of G at 110 mm back from the wing LE at the root



Ready to fly. Scan the QR code to see E-Shark in action



## CONTACTS

Email Graham Dorschell

[g.dor42@yahoo.com](mailto:g.dor42@yahoo.com)

How To Fold Depron Wings

[www.youtube.com/watch?v=vYM-T4XPM-o](http://www.youtube.com/watch?v=vYM-T4XPM-o)

RC  
**MODEL  
WORLD**

# DETAILS

## MODEL INFORMATION

<b>WINGSPAN:</b>	41" (1030 mm)
<b>RADIO FUNCTIONS:</b>	Throttle, Ailerons and Elevator via a Delta Wing mix
<b>SERVOs:</b>	9 g x 2
<b>BASIC CONSTRUCTION MATERIALS:</b>	5 mm (or 6 mm) Depron, Correx, balsa strip
<b>COVERING MATERIAL:</b>	Solarfilm etc.
<b>CENTRE OF GRAVITY:</b>	4.33" (110 mm) from Leading Edge
<b>CONTROL THROWS:</b>	Elevons: +/- 11 mm

## ELECTRIC POWER

<b>MOTOR:</b>	35 mm 1500KV brushless outrunner
<b>PROP:</b>	8" x 6"
<b>ESC:</b>	60 A
<b>BATTERY:</b>	3S 2200~3000 mAh LiPo

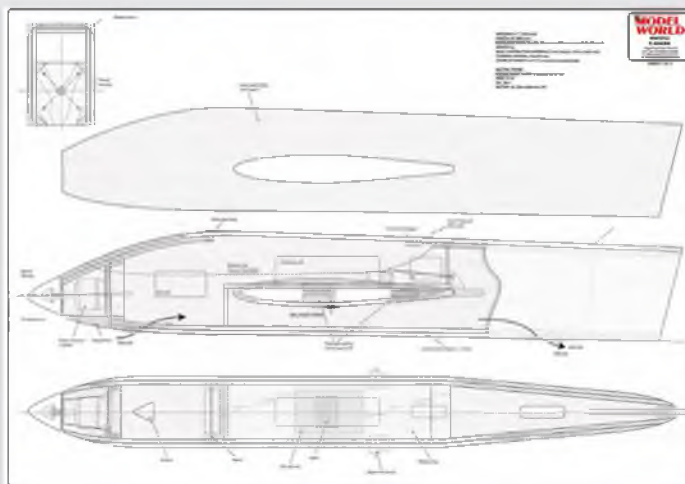
## PLAN DETAILS

<b>NAME:</b>	E-Shark
<b>BUILD CATEGORY:</b>	Beginner to Intermediate, but needs good flying skills
<b>PLAN NUMBER:</b>	MW3753
<b>PLAN PRICE:</b>	£11.99 (\$20.99)

Plans and parts are subject to Postage and Packing charges at standard rates.

Copies of plan number MW3753 are available from RC Model World (Plans Service), Traplet Publications Limited, Traplet House, Willow End Park, Blackmore Park Road, Welland, Malvern, WR13 6NN, UK. Telephone: + 44 (0) 1684 588599, Fax: + 44 (0) 1684 578558, Email: [orders@traplet.com](mailto:orders@traplet.com) or order online at [www.trapletshop.com](http://www.trapletshop.com)

For more information on the Traplet Publications Plans Service see our advertisement in this issue.



# SMC Sussex Model Centre

[www.sussex-model-centre.co.uk](http://www.sussex-model-centre.co.uk)

Here are just a few of our new items and special offers this month. See our website for a full range of products including \* Aircraft, helicopters \* Radio control cars, buggies, tanks & trucks. \* Boats & ships \* R/C systems \* Electric motors \* IC engines \* Tools and accessories.



Eflite F-16 EDF Jet 295mm span with motor fan and servos £116.99



Great Planes U Can Do SF 3D 1500mm span for 60 size or 55 500 motor £159.99



Multiplex kit + Parkmaster Pro 975mm span £170.99



Hobbyzone Glasair Sportsman S+ with Autoland 1390mm span £269.99



Seagull Westland Lysander 3m span for 50cc Engine £499.99



Hangar 9 P-51 Mustang S 1390mm span with 8cc petrol eng. £398.99



Eflite Ultimate BNF Basic 954mm span £193.85



57-59 Broadwater Road : Worthing W Sussex: BN14 8AH

Tel. (01903) 207525 (3 lines) or 233817 Open 9am.-5.30pm. Mon. to Sat.

Email: [smc@sussex-model-centre.co.uk](mailto:smc@sussex-model-centre.co.uk) Web: [www.sussex-model-centre.co.uk](http://www.sussex-model-centre.co.uk)

RCMW18/08/15



E&OE

CONNECT

# SARIK-VACFORM

for High Quality Vacuum Moulding

**THE IDEAL VAC-FORMED MOULDS FOR YOUR BUILDS**

**White ABS** - perfect for Cowls, spats and more

**Clear ABS** - perfect for canopy's



Many different canopy's in stock and bespoke orders welcomed!  
For stock availability and more information on how Sarik-Vacform can meet your vacuum moulding needs

**phone Barry or Janet on 01531 631605**

[www.sarik-vacform.com](http://www.sarik-vacform.com)  
[info@sarik-vacform.com](mailto:info@sarik-vacform.com)

9 Lower Road Trading Estate, Ledbury, Herefordshire, HR8 2DJ

NOTHING SUBTLE ABOUT IT.

# THE DX18 STEALTH EDITION

The DX18 Stealth Edition does just about anything but blend in. For starters, it gives you a powerful combination of features that includes three model types, servo balancing and sequencing, voice alerts, 250-model memory, 16 programmable mixes, telemetry and more. To this it adds a distinctive black finish and exclusive extras like a Stealth Edition aluminium carrying case and neck strap. An AR9020 receiver and an SD card pre-loaded with popular Horizon Hobby model setups are also included



# BMFA PAYLOAD CHALLENGE 2015

*Bruce Corfe attends the annual heavy-lift event for the next generation of engineers*



*The complex Brockford Barn Distance entry*



*West Bridgford pupils prep their winning Distance entry*



*The West Bridgford entry had some hairy moments!*

**T**he annual BMFA Payload (Heavy Lift) Challenges are a test of students' skills in design, technical knowledge and teamwork. In my view, this is one of the aeromodelling events of the year. In addition to designing a craft which will lift a payload (different items in the different classes), teams are awarded points for their report, drawings and presentation to the judges, who are all professional engineers. This year there were changes to the format of the two existing classes, plus a new one designed to attract entries from school-age pupils – there have been few entries from this age group in the past.

This was the 20th anniversary of the

Challenge, which is held each year at Elvington airfield near York (which is huge!). The event is run by BMFA Development Officer, Manny Williamson (University Challenge Co-ordinator) and Club Support Officer, Andy Symons, plus volunteers from both the BMFA and local clubs.

The specified motor is an E-flite unit – the same motor is used in all classes. This means teams can move upwards in successive years. Mr BMFA Dart, Mike Colling of the BMFA Education Working Group, who introduced the Challenge, was present to keep an eye on proceedings.

With 27 teams present a busy weekend

was assured! Presentations to the four judges took place in a noisy marquee, but as soon as a team had presented their homework it was outside to fly in the very windy airfield environment and your scribe followed the action!

## **Competition Classes**

The new class, Challenge 1 (D for Distance) is designed for school-age participants. Models have to be loaded up and carry a huge half-kilo balsa block, then complete as many laps as possible in 5 minutes.

Last year's Electric Lift competition is now Payload Challenge 2 (Q for Quantity).



Norfolk University Technical College ponder the weather



Science fiction Distance entry from Norfolk University Technical College in the pits



Oops – what happens when a big LiPo hits terra firma hard. No heat produced though



Sheffield-Hallam collect the long-nosed 'Big Bertha', with Elvington's mighty Victor in the background



Loughborough 2's adventurous tail-less pusher in Weight



Queen Ethelburga's School's entry got a big total in Quantity

Rather than water, the load is now tennis balls. Teams have to load as many balls as possible, fly a circuit, unload and repeat the process in the allocated time.

Challenge 3 (W for Weight). Formerly the Heavy Lift Challenge, this class is no longer IC engine-powered, having moved to an all-electric power system to hopefully reduce non-starts and delays. The payload is water and teams follow a similar routine to the Quantity Challenge, carrying water instead. There is a points advantage in producing a light model.

### Challenge 1 – Distance

This new entry-level class attracted four teams, all of whom managed to post a

score. Remember, once the big block is loaded teams fly as many laps as possible within the time limit. Priestley College (Warrington) students brought their swept-wing 'Stingray', which did well in the windy conditions but lost a wheel on landing. In Round 2 they flew eight laps before their battery quit, but they landed safely. West Bridgford School Model Flying Club's Union Flag-adorned model made eight wobbly laps on Saturday and seven on Sunday before a control failure at 40 feet saw the total loss of the model. Good effort though!

Norfolk University Technical College brought a tubby, swept-wing sci-fi styled craft. Test-pilot Stuart Knowles suggested

the model had a C/G problem, but after some fettling the model got airborne and put in three fast laps before the rather flappy wings folded in mid-air and, sadly, the machine was totalled.

Brockford Barn, Suffolk (a learning community for students outside mainstream education), brought a complex laser-cut foam and balsa pusher model which was twitchy but which flew successfully, completing seven laps before tip-stalling in with considerable damage. Repaired, the model struggled for power and crashed again. On Sunday, power was again the issue and the model stayed on the ground.



*Manchester's entry Quantity showed good stability*



*Easily the most energetic fetcher of the day brings the Manchester entry in for unloading*



*Fantastic lightweight workmanship on the German Private University 'Bade Hose' Quantity machine*



*Pack 'em in! Enthusiastic German Bade Hose team members*



*The Bade Hose entry lifts off on one of many ball-filled flights*



*Sheffield-Hallam University's interesting 'double decker' fuselage model was rather unstable in the wind*



*Strathclyde Model Aircraft Design Association (SMADA) Team 1's previously un-flown and un-tested aircraft takes to the air*



*Loughborough 3's unorthodox 'A-tail' pusher was sadly relegated into third place in Weight, by being reduced to matchwood in Round 3*

## Challenge 2 – Quantity

Eight teams had to load, carry and unload as many tennis balls as possible in the allotted time, best two rounds of three to count. Priestley College Team 2's orange/green model flew well and had a terrific first round, totalling 135 balls. Their next best score was 60 balls. Strathclyde Model Aircraft Design Association (SMADA) Team 1's un-flown deep-bodied model didn't post a score and despite pilot Alasdair Sutherland's best efforts it vanished into the nearby woods from a considerable height!

Sheffield-Hallam's long-nosed 'Big Bertha' model struggled to fly when loaded and sustained some damage in Round 1, then crashed in Round 2 without

posting a flying score. Aerospace students from Manchester University UAV Society produced their 'Skywhale' model made from recycled materials, plus a foam and carbon wing, which carried 88 balls before an undercarriage collapse.

On Sunday the team carried 66 balls but had fading power. Strathclyde Group A's model made two good flights then lost the undercarriage in a crash and didn't post a second round score. However, Strathclyde Group C's 'Shark' made many excellent flights with Alasdair in control, to score a huge total of 146 balls.

Queen Ethelburga's private school near York had the youngest team in the Quantity Challenge. Their laser-cut foam

and lite-ply model made many successful flights, managing 72 balls on Saturday and a huge 112 balls on Sunday, which helped compensate for their disappointing report scores.

The German Private University 'Bade Hose' team's tiny ball-carrier was a midgem of carbon, laser-cut balsa, lite-ply and clear Oracote. It had a 6-wheel main landing bogey and a Space Shuttle-style split-rudder air brake! Its inaugural flight (unloaded) was twitchy. However, once loaded it flew well despite eventually losing its landing gear. Sunday was not without problems either, but the team completed seven excellent loaded flights with seconds to spare.



*Actually it was horizontal most of the weekend!*



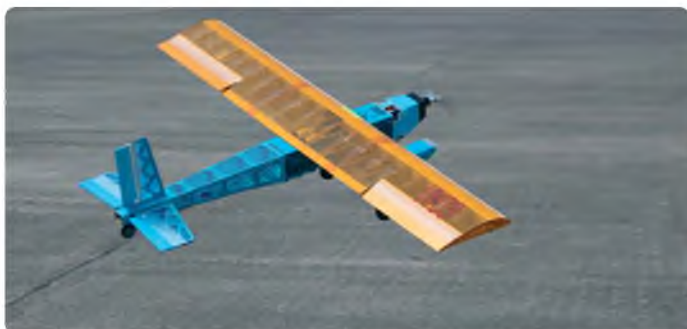
*Priestley College Team 2's model flew very well – 2nd place in Quantity*



*Strathclyde Group A's Quantity entry*



*Conquering Strathclyde Group 'C' team won the Quantity challenge*



*Loughborough University Team 1's model put in a solid performance to finish 4th in the Weight class*



*Liverpool University's high-tech construction/geared motor 'Liverbird 9' carried more weight than anyone and finished second*



*Victorious Helios entry in Weight class – high tech taken to extremes. Note payload between wheels*



*Great teamwork and awesome performance from the lightweight carbon Helios, BAE Systems' elegant but fragile Weight entry*

### Challenge 3 – Weight

With nine teams entering this is the big league of the competition – increasingly large payloads of water are carried rather than tennis balls. Loughborough University Team 1 flew well unloaded, then carried 1 kg and 1.5 kg payloads but were penalised for their report. Loughborough 2 brought a big blue pusher foam delta with winglets – the first un-laden flight went well, but laden it spiralled in and sustained damage. After overnight repairs, including a Pringles tube for a nose, it flew successfully but posted no third round score. However, it was still the first tailless design to score points in any challenge.

Liverpool University's 'Liverbird 9' combined high-tech construction with a

geared motor created on a 3D printer. With 2 kg and 2.25 kg carried – more weight than anyone else – the team were poised for a top result. Sheffield-Hallam University's 'double decker' model was unstable in the wind and crashed on its first flight, breaking a wing off. Repaired, it crashed again, posting no payload score but scoring highly with their report and drawings.

Loughborough 3's equally adventurous 'A-tail' pusher made a good first flight, fighting the wind all the way. Unfortunately in the final round, laden with 4 kg of water, it crashed during a downwind turn and was destroyed. Some consolation was afforded by getting the top-scoring report, drawing and

presentation. BAE Systems apprentices' high thrust-line model was sensitive in pitch but flew well unladen. With water added the model struggled for height and crashed, posting no payload score.

Strathclyde Model Aircraft Design Association's (SMADA) tiny model lost its u/c in a crash and also posted no payload score. Strathclyde University's model lost a fin in flight and pirouetted down unharmed, and then crashed again on Sunday breaking it's back. Once again no payload score was posted.

This left Team Helios from Stade near Hamburg, who are second-year Airbus Industries apprentices. Their brilliant lightweight carbon model weighed only 350 g, plus 400 g of electronics, etc.



*Priestley College/Warrington Model Flying Club first year students brought their swept-wing 'Stingray'*



*Priestley College's 'Stingray' in action*



*The science-fiction profile of Elvington's Victor is unmistakable*



*Vulcan XH558 did a flyby on a nostalgic tour of its old V-Bomber mates at air museums around the country*

The well-tested model is aerodynamic and slim. The water payload is carried in an aerofoil-shaped container between the main wheels. Successful flights with 2 kg per go meant that with their tiny overall weight the team had a calculated advantage – they didn't need to use their big 4 kg tank. With a high-scoring report, drawing and presentation, the team took the top place in Weight Challenge – a great result and well earned.

### **Conclusions**

Last year two Chinese teams swept the board. What would happen this year? Prizes were presented by BMFA Chairman, Chris Moynihan. The winning teams were:

Challenge 1 – West Bridgford School Model Flying Club won the inaugural round of the Distance Challenge with 136.75 points, very closely followed by Priestley College and Brockford Barn in a solid third place.

Challenge 2 – Quantity – Strathclyde Group 'C' won with 152.50 points.

Challenge 3 – Weight – Team Helios from Stade, Germany with 563.63 points.

The Brockford Barn Team were awarded a Special Prize for Effort – well deserved.

I love attending this event! Young people are given the opportunity to demonstrate their abilities in a range of demanding skills. The new, all-electric format worked very well with Manny, Andy and the volunteers working hard to ensure a smooth operation. You see more

experimental models (and excitement!) than anywhere else I can think of.

As if that wasn't enough, we were treated to a terrific display by Vulcan XH558, which was touring all the museums hosting cold-war-era V-Bombers, such as Elvington's awesome Victor bomber. Brilliant! Do check out the extra images and videos below – and come and join us next year! **RCMW**

### **CONTACTS**

#### **Full results:**

Facebook – BMFA Heavy Lift

#### **More photos:**

<http://tinyurl.com/BMFAChallenge>

#### **Techy John's videos:**

<http://tinyurl.com/BMFAVideos>

#### **Rogues' Gallery – crashes:**

<http://bit.ly/1fAohZR>

Introducing

## AirJoules Batteries...

A range of small and powerful lipo batteries for your RC Factory and Twisted Hobbys planes!



### Normal balance connector

AirJoules packs arrive with the now standard JST-XHR balance connector for compatibility with the vast majority of balance chargers

180mAh 2s 25C - £4.25  
250mAh 2s 25C - £4.75  
360mAh 3s 25C - £5.95  
450mAh 3s 25C - £6.25  
600mAh 2s 30C - £5.15  
600mAh 3s 30C - £7.50  
750mAh 3s 30C - £8.25  
850mAh 3s 30C - £8.95

### JST connector

Fits the ESCs in most of our RC Factory and twisted hobbys power sets

## New Zorro Flying Wing...



... A great first flying wing, for fun or for FPV!

Now stocking...

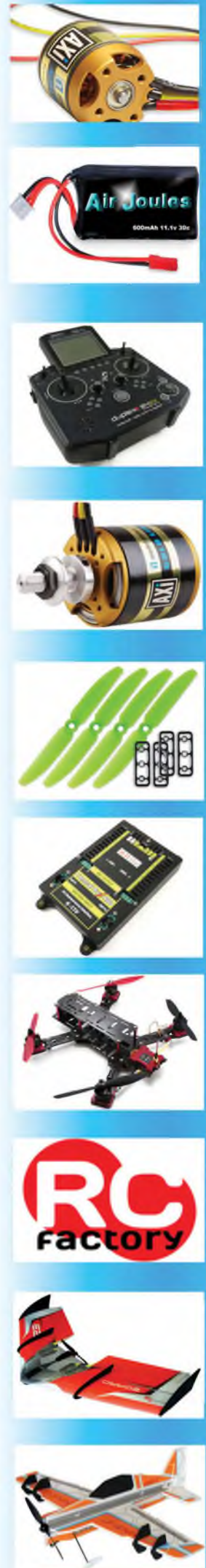
**IMMERSION RC**  
REAL VIRTUALITY

**FAT SHARK**  
RC VISION SYSTEMS



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

01244 852 553



Bob Davis explains why shear webs are important and why dihedral might not be



### Shear Madness

Or, why leaving out shear webs is always a bad idea!

If we look at two versions of a beam (a wing is a beam), with and without shear webs (as shown in Figure 1), the top wing has no shear web and the spars act as two separate elements. In the lower wing the shear webs make the two spars act as one beam. Strength is determined by something called the section modulus ( $z$ ) and stiffness by the second moment of area ( $I$ ). Without going into how these are calculated, for my wing with 1/4" x 1/4" spars inset from the 32.5 mm section profile by 1/16th sheet, without shear webs:  $z = 87 \text{ mm}^3$  and  $I = 280 \text{ mm}^4$  (mm to the power of 4). But in the wing with shear webs:  $z = 678 \text{ mm}^3$  and  $I = 10600 \text{ mm}^4$ . No, that is not a misprint. Since the shear webs probably account for 10 grams in a model weight of 2.5 kg, how is it a good deal to lose 87% of the primary wing strength and virtually all the primary stiffness to save 0.4% of the model weight.

Clearly, it isn't.

Nuff said? Well, no actually; the shear webs have two other important functions. The first depends on the shear webs being fitted correctly to resist the Brazier effect. (No, that's not the same as idiots setting fire to their crashed model on YouTube.)

Figure 2 illustrates the Brazier effect. At high bending moments – probably corresponding to a high g pull-out or even a minor accident – the tensile spar 'shortcuts' its intended curvature and, without shear webs to hold it away from the compressive spar, crushes the ribs and

moves towards the compressive spar. The compressive spar does the same, only its curvature increases and it moves towards the tensile spar. Any slight movement of the spars towards each other has a

ruinous effect on stiffness and, in short order, strength. In the course of a few milliseconds, the Brazier effect takes over, becomes a runaway effect and the wing folds.

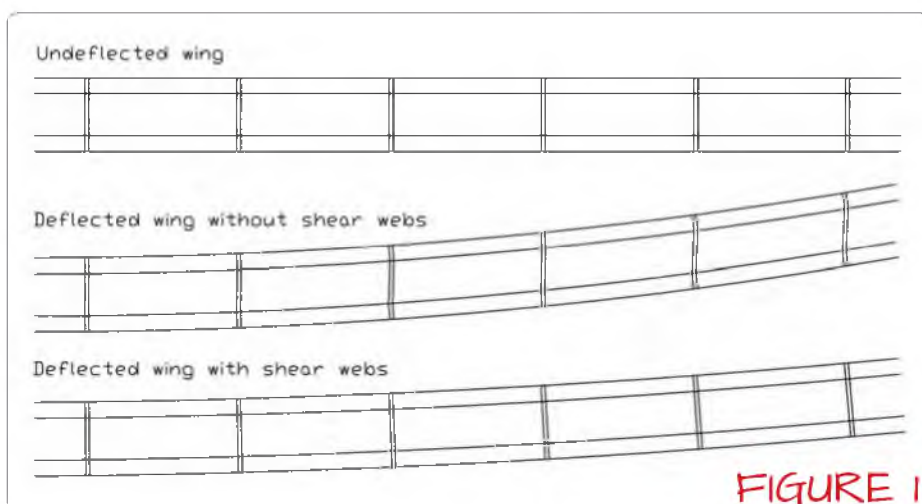


FIGURE 1

An illustration of the forces acting on the ribs in a wing without shear webs versus a wing with shear webs

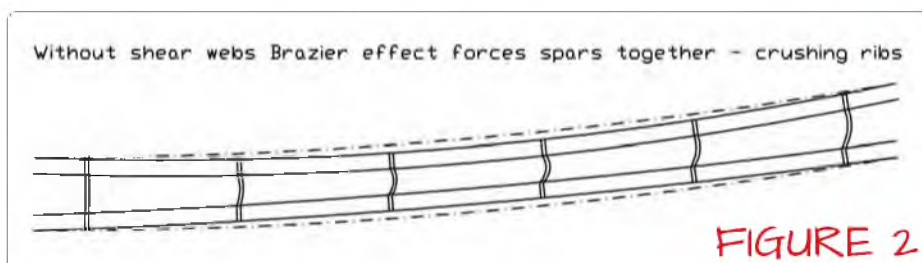


FIGURE 2

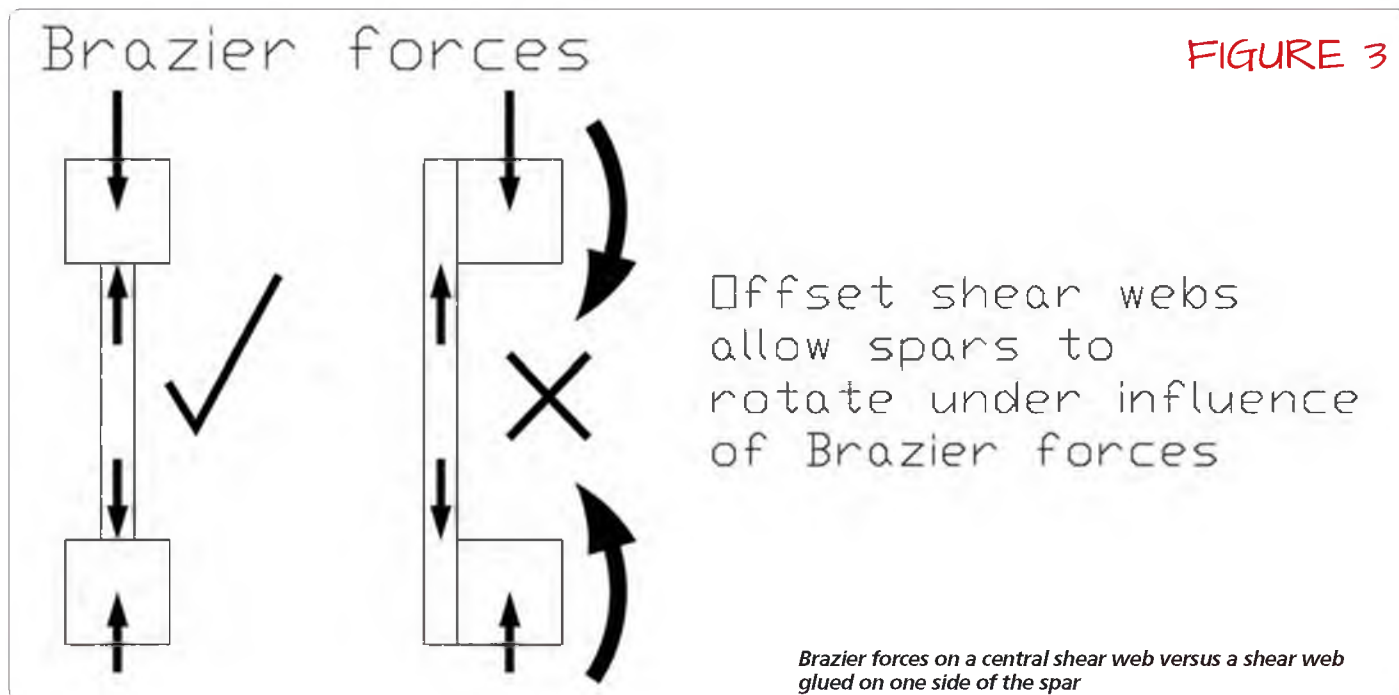
The Brazier effect

### Why Shear Webs Are A Good Idea

So what are incorrectly fitted shear webs? See Figure 3. Conventionally fitted shear webs really are selling the job short. On top of that, correctly fitted shear webs, accurately made,

are the key to building a dead straight and accurate wing without any jigs and only the most skeletal drawing. On my 55" span 2.3 kg model I advocate using 2 mm Lite-Ply shear webs, with the outer plies running longitudinal. Used in this orientation the central transverse ply – which is doing the

vital job of holding the top and bottom spars apart – is stabilised by the outer plies. Also, the longitudinal outer plies contribute toward wing stiffness. The shear webs should be much thicker, say 6 mm over the fuselage, and maybe 3 mm in the first bays on either side of the fuselage.



### No More Twist And Shout

The other vitally important job the shear web does is to close the torsion box – or the D-box as aeromodellers like to call it. It can be shown that the torsional stiffness of a cross-section – pretty well any shape cross-section – is proportional to the square

of the enclosed area. If the wing has a D-box construction then it's the entire cross-section of the D-box that counts as the enclosed area. However if one element, the shear web, is missing, or even if there's just a thin cut in one skin, the enclosed area is zero. In that case the torsional stiffness

doesn't quite fall to zero, but it's very low: so low it will be difficult to cover the wing and shrink the film without twisting the wing. This principle is clearly evident before and after the closing skin is glued in place. Before the sheeting is glued on you can easily twist the wing. After the sheeting is glued on, you can't at all.

### Full Span Spars

I can't find full span spars, so where and how shall I join them?

In the middle of course, where we add in the dihedral. Oh really? Look, if we're talking about a 4-channel sport model, dihedral is tosh. And while we're at it, wash-out is also tosh. I bet you that where a designer has built in 2 degrees of dihedral and 3/8" of washout there will be a flight review at the end of the build article which will say something to the effect; "Inverted flight required just a touch of down elevator" – or some-such. But, wait a minute, despite inverted flight being more difficult and despite the fact that, when inverted, dihedral becomes anhedral, and despite the wash-out, which then becomes

wash-in, the challenges of flying it were clearly unremarkable. So instead just build the wing flat and look for a more sensible place to join the spars and skins than in the middle.

Let's look at this dihedral thing another way. A 3-channel model with 8 or more degrees of dihedral catches a gust of wind. After several seconds and a mighty swerve it will probably pull itself level. A 4-channel model with 2 degrees of dihedral would take longer to pull itself straight – if it ever does. But what's your Mode 2 right thumb doing while this is going on? Well, your thumb's autopilot corrected the roll within half a second of the gust hitting, didn't it? Dihedral on a 4-channel model is tosh and a wing joint in the middle is daft.

At the wing root (effectively in the middle of the wing), the bending moment is at a maximum. If I were to use a central 36" length of 1/4" x 1/4" spruce then the spar joints would be 18" either side of centreline. With my 55" span, 27.5" semi-span wing that would be 9.5" inboard of the wingtip. The wing bending moment builds up from zero at the tip to maximum at the root in a parabolic relationship. So the bending moment 9.5" in from the tip is  $(9.5/27.5)^2 = 0.12$  of the maximum. Now, shall I join the spar where the bending stress is a maximum, or where it's 12% of the maximum? I choose the 12% position – with a central 36" of spruce. Or do I? Perhaps I can improve on that.

### Making Spar Joints And Composite Spars

Making two outboard spar joints opens the door to another useful trick. If 1/4" square spruce is strong enough at 100% bending moment, balsa is strong enough at 12%. So at the very least I'm going to splice 9.5" balsa ends on to a 36" spruce centre. However, the big bonus to using this composite spar is when you come to assemble the wing. Although you can't pin

a spruce spar, you can pin the balsa outer ends. So, to maximise this advantage, not to say put my money where my mouth is, I'm going to say that balsa is half as strong as spruce (it's better than that for hard balsa) and work out where along the 27.5" semi-span the bending moment is 50% of the maximum:  $27.5 \times \sqrt{0.5} = 19.5"$ . Wow, 19.5" of balsa either side of a central 16" of spruce. Readers copying this spliced composite spruce/balsa spar idea might care



*Hold the sanded spars tight against a metal straight edge while applying Cyano glue*

to be a tad more conservative but I like to experiment.

Use hard balsa for the spar outer ends. That would be a 1/4" square, 36" long piece that weighs 10 grams or more.

Making the splice is easy. Using your sanding board put a nice level taper on both ends of the spruce. About 1 in 3 taper. Be sure to keep the tapered surface flat. This is quick and easy if you're used to using a sanding board and if you're not, well it's good practice for an essential skill. You need a flat building board and a straight edge with some depth to it. An aluminium spirit level is a good choice. Cover one edge of the spirit level with Sellotape to stop the CA sticking to it. Hold the spruce against the straight edge and taper the balsa until it slides in perfectly behind the spruce. See picture. Make sure the balsa is plenty long enough – you may lose a bit of length before you get the mating taper right. It's not that difficult though. When you're

happy with the fit, clean the dust from the tapered surfaces. Next, place a sheet of stout plastic underneath the joint (to avoid it sticking to the building board) and hold the spruce and balsa tightly against the Sellotape-protected straight edge. Place your fingers well apart and use very thin penetrating CA to bond the spruce and balsa together. Within a few seconds you can roll it off the straight edge. If the tapers don't mate well the thin CA probably won't bond – it likes intimate contact. It's easy enough to cut the taper ends off and try again. Don't sand the unbonded CA-covered tapered surfaces – the glue clogs the sanding board something rotten. However, if you tapered the spars correctly, the CA will create a tight bond that won't break. The pictures nearby show a test joint being bent just prior to break and the broken ends. The spar broke, but not at the splice.



The spliced joint under extreme bending pressure



The spar finally failed, but not at the spliced joint

## Wing Layout – A 'Plan' to Build On

You don't need a plan as such. You need a piece of paper longer than the span and you need to draw the spar and the ribs on it. That's all. One esteemed designer advocates the back of cheap wall lining paper. Provided you make the shear webs

accurately you can build the wing from the centre outwards on the pinned down spar. The only reason for drawing the ribs at all is to keep them square-by-eye to the spar. Use white glue so that the spar and rib assembly is still pretty floppy when the (nice straight) leading edge section is CA'd

in to level it up. (Just be careful with semi-symmetric ribs that you don't put one in upside down.)

Before drawing this 'plan' you will need to decide upon rib spacing. Just saying 60 mm (in my case) is well and good but there is a servo to fit in the middle (two if I want

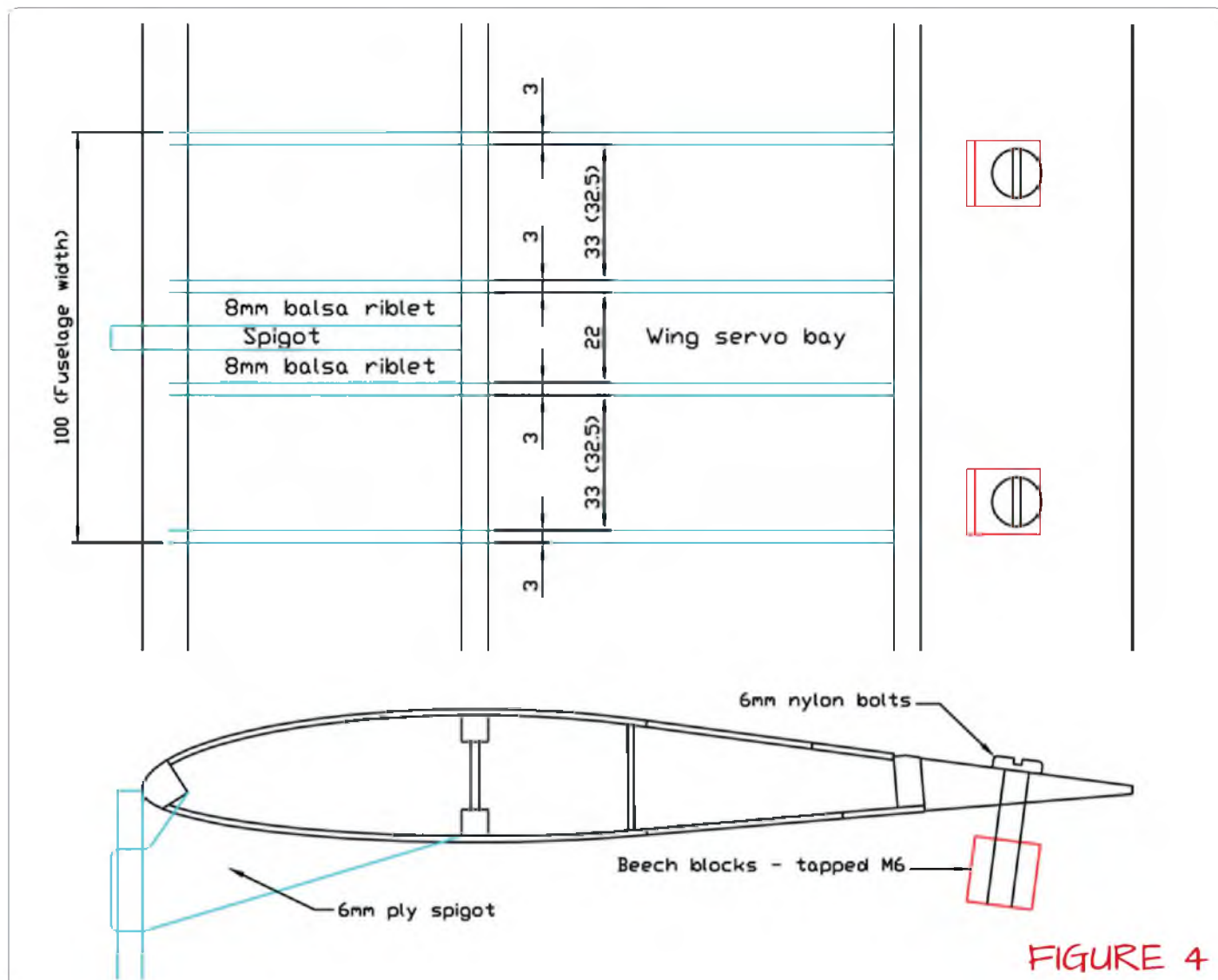


FIGURE 4

Drawing details placement of riblets, wing hold-down bolts and central spigot

flaperons). I would want a hard point (3 mm birch ply rib) immediately above the edge of the fuselage (I've decided on 100 mm wide). You need to consider how you are going to butt-join the sheeted surfaces together, and to the wingtips.

Let's first deal with the wing mounting system. I'm a big admirer of the Wot4 front-spigot-with-back-bolts system (see Figure 4). The central spigot rib and a single servo gives me some problems but experience has shown that a central 6 mm Lite-Ply combined spigot and riblet with 8 mm (5/16") hard balsa spacer riblets either side and then 3 mm ply full ribs, gives a good strong mounting for the spigot. The distance between ply ribs is then 22 mm which provides enough space for the single servo. (I've had it with flaperons; they inevitably result in wrong-way aileron differential and masses of rudder having to be mixed in to get decent turns.)

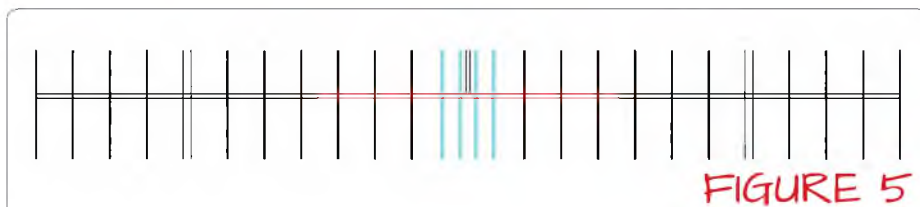
Figure 4 also shows the build-up of the centre wing and how I've come to shear web section lengths of one at 22 mm and two outer sections at 33 mm – I'm going to call it 32.5 because 3 mm ply is often 3.2 mm (1/8").

Following the same logic expounded above – about not being to be prepared to put spar joints in the middle where the wing bending moment is a maximum – I'm going to fit the top and bottom sheeting as central 3' lengths with outer panels. (I can only get 6" wide balsa in 3' lengths.) I'm going to need thick ribs to support these butt joints. From experience it's terribly easy for a build-up of minor variations in rib thickness to push these thick ribs away from the desired 36" centres so I'm going to use low density 1/2" balsa for these sheet-join ribs.

Finally the wingtips. I won't say tip ribs



*A strong, straight, flat wing. One of the best I've ever built*



*Simple wing layout drawing shows spar and rib spacing*

because it will be far more accurate to use a standard rib with a wingtip glued on and sanded to shape. The essential point with wings tips is to remember that the covering is going to shrink span-wise. If the end ribs can flex at all, the covering process will just pull them inwards. My (beloved) nylon gives a very powerful wet shrink and then a dope shrink on top of that, so 3/4" balsa tips will be required.

Elliptical tips look great and do a fine job of resisting span-wise contraction. However, by the time you've made sure no spars or formers intrude into a smooth aerofoil section they will be generating next to no lift but will be ideal surfaces for vertical

gusts to work on and knock the model around. Personally I've had it with elliptical tips too.

A plan of my wing layout (considerably scaled down) is shown in Figure 5 and the finished product in the picture nearby. Not the best wing ever built, but the best wing I've ever built.

Even though this article is quite long there's so much I don't have time to go in to. If anyone else wants to try and heave aeromodelling back towards creative own-design then [bob.davis.design@gmail.com](mailto:bob.davis.design@gmail.com) should generate a civil response. And a free pdf of SportFoil1 if you want.

**RCMW**



*Of the wing fitted to his Sportsman design, Bob says it's, "Not the best wing ever built, but the best wing I've ever built!"*

# The British Model Flying Association

Protecting and promoting  
UK model flying for over  
90 years.

# BMFA

**£25 Million liability cover  
for all lawful recognised  
model flying activity as standard.**

**Join at [www.bmfa.org/join](http://www.bmfa.org/join)**

**2015 Fees Reduced Further from 1<sup>st</sup> Sept**

**Senior £16, Junior £9,**

**Family Partner £11, Family Junior £7**

Join via the website, over the phone or send payment with this advert

\*Membership year runs to 31st Dec 2015



Mr/Mrs/Miss..... D.O.B. ....  
Address.....  
Postcode ..... Tel: .....  
E-mail ..... Make Cheques payable to BMFA



BMFA, Chacksfield House  
31 St Andrews Road, Leicester,  
LE2 8RE  
T: 0116 2440028  
E: [admin@bmfa.org](mailto:admin@bmfa.org)

**[www.bmfa.org](http://www.bmfa.org)**



**IRON-ON COVERING MATERIAL FOR FLYING MODELS**

**TO RECEIVE A SAMPLE PACK CONTAINING ALL PRODUCTS  
& AVAILABLE COLOURS SEND FOUR FIRST CLASS STAMPS TO:-**



**Solarfilm Sales Ltd. Ackhurst Rd, Chorley, Lancs. PR7 1NH England**

**Website [www.Solarfilm.co.uk](http://www.Solarfilm.co.uk)**

**Tel 01257267418 Fax 01257276203**

# LIGHT FLIGHT

*John Stennard talks servos, German rocket planes and the indoor shenanigans at the recent South West Hobbies and Model Show*

**A**s you are reading this in September most of the main model shows are now a pleasant memory. I had a good show season this year and managed to get to the South West Model and Hobbies Show, Weston Park, Wing and Wheels, Woodspring Wings and Much Marcle. They were all special in their own ways but for the indoor enthusiast the South West Model and Hobbies Show offers something special. I've written a short report to reveal what we got up to behind closed doors!

## South West At Its Best

Derek Small reported on the outdoor activities at this year's South West Model and Hobbies Show back in the July issue of the RCMW. This show took place on the Bank Holiday weekend of the 30th April/1st May at the Bath & West Showground near Shepton Mallet and the 2016 dates have already been confirmed as the 30th April/1st May 2016 at the same venue. In this short overview I'll be looking at the activity in the indoor flying arena.

Last year the indoor flying display moved halls and this gave a larger flying space in all directions. Jason and Pete again worked hard to make sure there were plenty of pilots and models and in the end our models and equipment needed 22 tables – there were even models under tables! This is a unique show as it provides the public with an opportunity to see aircraft, helicopters and multi-rotors performing up close, but also gives local and not so local club flyers a chance to mix with some of the UK's top indoor flyers.

This is not a competition, just a fun-fly for modellers and their amazing light weight aerobatic models and complex quadcopters. Watching Steve Schafer's co-axial prop-equipped Elanor floating around like gossamer while performing complex aerobatics was inspiring and magical! Steve Schafer, Ray Watts, Bob Blackmore and Simon Tooley all made slow precision flying look easy with both their ultra lightweight built up and milled foam models. Sometimes they switched to heavier EPP/Depron models and performed dynamic aerobatics at higher speeds. When the top guys were taking a coffee break the arena was quickly filled with plenty of less refined but more robust aerobatic foamies, helicopters and multi-rotor copters.



*Ray Watts likes to fly dynamic models, like his Extra Vaganza*



*Enough models and gear to fill 22 tables. More needed next year!*



*Ray Watts ran out of table space with all his models!*

## LIGHT FLIGHT

Amazingly, mid airs were rare but the net managed to capture a few models! Spectators were well entertained while being informed about the different types of models. The non-modelling public all know (or think they know) what a 'drone' is – usually from inaccurate newspaper reporting. A wide range of types and sizes flew and Chris Bradbury in particular showed that skilled hands are needed when he flew his aerobatic Invertix Quad. To perform aerobatics with this feisty machine is

definitely not for the faint hearted!

At other end of the spectrum I spent a lot of time demonstrating what a clever little thing the Nano QX 3D is. Almost without my help it was flipping and flying inverted with ease. A nice touch was the number of young, and even very young, pilots who flew aircraft, helicopters and quads.

Rory Tooley was particularly active in the arena and demonstrated a high level of piloting skill. These youngsters showed

what can be achieved at an early age with enthusiasm and dedication.

While the South West Model and Hobbies show is not dedicated solely to model flying it does do an excellent job of showcasing our hobby to modellers and the general public. It also offers a unique opportunity to see 'close-up' the range and scope of indoor models and some amazing flying skills. Make a note on your next year's calendar. It's certain too be bigger and better!



*The lightest of the light, Steve Shafer's Elanor*



*When we are not here, guess who is? The clock's a give away!*



*Many basic Depron models, like this Dualsky Yak 55, flew really well*



*R/C hot air balloons were allowed to inflate this year but had to hide indoors out of the wind*



*Elanor is in its element flying very slowly and is highly manoeuvrable. A very skilled pilot is required to handle a model of this complexity*



*Another lightweight special of a different type, Ray's Disney*



*Steve is equally at home flying his more standard type indoor aerobatic model*



*Chris Bradbury and his very lively Invertix quad*



*Chris flew the Invertix inverted and showed off his piloting skills*



*A touch smaller but a great fun quad – my micro size Blade QX 3D*



*Once airborne the model is very pleasant to pilot, with a bit of excitement at the end when you have to land. Just like the original aircraft!*



*Me 163 ready for a 'sharp' start – if the pilot can avoid a ground loop!*

### **Me 163 Update**

In the August Light Flight, I mentioned that I had become a Me 163 Komet pilot with all the attendant risks and hazards. Both the model and the pilot have now survived a number of flights and like the original aircraft she's actually very pleasant to fly with very smooth controls and glides well. If you get it right, the 'skid', or belly landing, works well. If you don't, you are

likely to dig in a wingtip and that pitot tube is a bit vulnerable!

The instructions recommend that the model should not be used to take-off from hard surfaces. It can be done and I eventually achieved it after numerous ground loops, which were quite spectacular. Off short grass it just goes, and how! More on this interesting model in a future feature.

### **Super Servo**

I use micro size servos all the time and always seem to need a few new ones when my supply of recycled ones is low. There is also a point at which the latest servos have an advantage as even at the micro size they can be digital and are often faster and more powerful than older ones. What is a pain is if that you have to change the connector depending which micro receiver you are using.

Suddenly all these problems are a thing of the past with the Blue Arrow D0313 Digital Ultra-Micro Precision Servo. This is a 3 g servo with a speed of 0.07 sec/60° and a 0.50 kg/cm torque. The servo features metal output gears and precise centring puts the error at just 0.5°. What makes this servo special is that it comes complete with a set of adapter leads. The servo is fitted with a Spektrum AR-6300 compatible plug and the adapter leads enable it to be used with an Assan X8R4P, FrSky TFR6M, Orange Micro R415, Spektrum AR-6400 and SuperMicro System Module RXs.



*The adapter leads are a really useful addition*

## LIGHT FLIGHT

The actual specifications for Micro Servo JST are 1.5 mm pitch, Micro Servo 1.25 mm pitch, Micro Servo 1.00 mm pitch and standard JR type connector. This servo has proved to be excellent and cleverly solves the connector issue, which can be a nuisance. The servo is available for less than £4 on-line.



*This Blue Arrow micro servo has been one of my 'best buys'*

### Quad Hot Spot

Parrot were in the forefront of quadcopter technology and the AR Drone did a lot to promote this type of flying machine. Parrot's long standing distributor in the UK is Flying Toys Ltd, managed by David and Janine Rawlins. Parrot have been busy developing their latest 'Drones' and in the box below I've included links to their latest innovative designs. I hope to have the opportunity to test some. The Mini-Drone always amazes people and I'm sure the new versions will be equally impressive.



*David and Janine show off some of the new Parrot quadcopters. Check them out on the links*

**Parrot Airborne Cargo Drones:**  
[https://youtu.be/2Ry3OWA\\_paY](https://youtu.be/2Ry3OWA_paY)  
**Parrot Airborne Night Drones:**  
<https://youtu.be/V2cfBq-SV78>  
**Parrot Jumping Night Drones:**  
<https://youtu.be/ybCBgzhmjM>  
**Parrot Jumping Race Drones:**  
<https://youtu.be/hu1SzkCPG4>  
**Parrot Hydrofoil Drones:**  
<https://youtu.be/8aK2eS2ciPE>



*A pair of top micro performers, the E-flite Pitts 1S and Yak 54*

### Small But Hot

One of my most regularly flown models has to be the E-flite UMX Pitts 1S. However, I have had two notable 'arrivals' with this model that required extensive reassembly. The first was in the early days when I decided to do a low inverted pass. Unfortunately I was on low rates and found too late that I did not have enough elevator to keep the model level. With acres of grass around, the model impacted on a concrete farm road. Definitely pilot error.

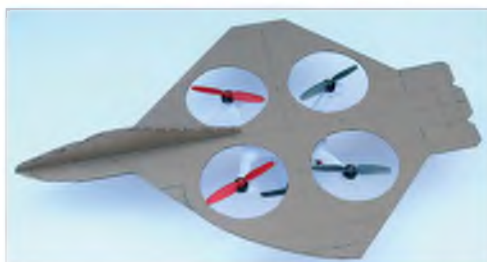
More recently I performed a bunt, which the Pitts does well and has done many times, but this time at a lower than usual

altitude. This time the Pitts did hit the grass at high speed. Definitely pilot error again! The damage was quite extensive, with the top wing snapped in two halves, struts broken, nose area badly crushed, motor detached, prop driver broken, etc. However, the Pitts was reassembled and is back in the air flying as though nothing had happened – a really amazing little star model.

Loving the performance of my Pitts at one of the model shows, I purchased one of its equally top performing hangar mates, the UMX Yak 54. This model fills the Pitts gaps in terms of crazy manoeuvres and I'll come back to it again in a future Light Flight.



*Above: This nano size VTOL SU 27 flies really well and made me think*



*Left: A cardboard mock up of my VTOL model based on a Blade 200QX*

### Tail End

When I saw a cute little micro SU-27 disguised as a quad, or was it the other way around, I fell for it. Apart from the usual micro Tx and big finger issues it flies well. This led me to eye up my Blade 200 QX with the idea of adding some sort of body. This is in the prototype stage now and looks very promising, as the 200 QX does not seem to know it has a body on its back!

More on this project in a future issue.

Information and photos are always welcome to [john@stennard.orangehome.co.uk](mailto:john@stennard.orangehome.co.uk) I am available for talk/demos on indoor R/C within a 50 mile range of Bristol. Additionally, as the BMFA Western Area Education Coordinator, I am also happy to talk to school pupils and youth groups in the region.

**RCMW**



**HACKER®**  
hacker-model.eu  
MODEL PRODUCTION

ALL ITEMS YOU CAN FIND ON OUR WEBSHOP  
WWW.HACKER-MODEL.EU



**BLANÍK**  
Wingspan 2000mm

Wings covered with  
**HACKERCOVER** film



**MASTER  
FORCE**



**BRUSHLESS POWER**  
Brushless motors and speed  
controllers in all sizes



**FOX  
ELECTRO**  
Wingspan 2000mm



**LUŇÁK®**  
Wingspan 2000mm

... more types, more colors ... check web pages

Unique Designs Only by Hacker - Made in EU



**BUILDERS  
AND PILOTS  
CHOOSE ZAP®**

Hi there, I'm Dino DiGiorgio and I am addicted to flying War Birds. Any type and from any era. My favorite though is an aggressive WW2 model, one that flies fast and is agile. Pulling a couple of G's in a maneuver can stress an airframe but I find comfort in knowing I have used the strongest, finest quality CA and Epoxy adhesives on the Planet for my bird. I am still flying War Birds built over 10 years ago, built with ZAP!



**ZAPGLUE.COM**

West Warehouse

760/246-6462 | houseofbalsa.com

Central Warehouse

630/584-7616 | robart.com

East Warehouse

863/607-6611 | franktiano.com

The BAe Hawks of Steve and Matt Bishop, The Red Bull Team, performed some superb close formation flying



# LMA AT RAF COSFORD

Neil Hutchinson

attends the annual LMA event at RAF Cosford and describes it as the best yet!



Massive 68% scale Pitts Challenger, built and flown by Robbie Skipton. Cosford was the model's first public show



Steve Carr demonstrates his large 60% scale Extra 260 with great skill. The model is based on a modified Bill Hempel plan

The second weekend of July saw the LMA's annual pilgrimage to RAF Cosford. The RAF take a long weekend off, allowing Dave Johnson and the team to take over and get everything set up. This year it felt almost like a brand new event because of the way the show line was set up. Unlike all the previous Cosford shows the 2015 show line was on the opposite side of the runway. This would be ideal for model flyers, photographers and the watching public alike, because the sun would be on our backs for nearly the whole day.

Unlike last year the weather was a lot more favourable and did not cause any problems. Saturday began with sunshine and a good breeze straight down the runway. On Sunday, after a short downfall of rain, the weather improved, with lovely sunshine.

The show had many of the regular LMA pilots and their models. However, this year they were joined by several model flyers

who came over from Germany for the weekend. There were also one or two new models to add into the mix. This year would follow a similar theme as in previous years. There would be fast formation flying from the TJD Team and the German Legendary Fighters Team; the Catton Hall WW1 Flying Circus; a large WW2 bomber and fighter formation, plus the regular aerobatic flyers and their large 3D models. Added to all this some pyrotechnics and you have a very entertaining show.

## The German Contingent

Gerhard Reinsch came over from Germany, again bringing his superb Fokker Eindecker and a new Tiger Moth. The Tiger Moth is the latest creation from Paolo Severin and will be distributed by Toni Clark. This was the Tiger Moth's first big show and although Gerhard has only been flying it for six weeks, it flew very well. The Tiger Moth uses the same engine as the Eindecker: a Valach VM120 12-4T 120 cc petrol engine.

Also from Germany, Harold Müller brought his huge DHC-2 Beaver, which was piloted by Andreas Engel. The Beaver had to be the model of the show – it was enormous! The Beaver's airframe is of aluminium construction and there are over 12,000 rivets holding it all together! The wingspan of this immense model is 5.85 metres and the weight is 82 kg. The power unit is a fabulous Valach VM R-5 420 cc 5-cylinder radial petrol engine, which sounds beautiful and is perfect for this splendid model.

## Aerobats Contingent

It was good to see Robbie Skipton back with another new aerobatic model, a Pitts Challenger, and Cosford was its first public outing. The huge 68% scale Challenger looked superb as Robbie flew his usual robust routine. The model is of standard, built up wood construction, covered with Profilm. A ZDZ 420 cc Flat 4 petrol engine provides the power for the 120 lb Challenger.



Model of the show? The fabulous DHC-2 Beaver built by Harold Müller (pictured right, with pilot, Andreas Engel) and Manfred Schimmer



The DHC Beaver looks very realistic in flight. All those rivets are real – all 12,000 of them!



Steve Holland photo-bombing a photo session with Phil Robertshaw (R) and Richie Robinson



Phil Robertshaw's new Wellington bomber. Built from the Tony Nijhuis plans and painted in Coastal Command colours



Another new model was Frank Fletcher's Douglas Dakota built from a Zirolì plan supplied by Belair. The 12 ft wingspan Dakota has 2x Zenoah Zg 38 cc petrol engines



Steve Rickett's own design Douglas Boston IIIA. The model took Steve five years to build – looks like the effort was worth it

Another superb-looking aerobatic model was the CARF Extra 330 of Rob Gardner. The 3.1 metre wingspan Extra is finished in the colour scheme of Emiliano Del Buono, the Swiss aerobatic pilot. Rob has fitted a DLE 222 petrol engine, which powers the model through its aerobatic routine with ease.

Like all of Rob's other models the Extra has a PowerBox Royal SRS iGyro unit to help manage and safely control all the servos and electrical systems. The unit is supplied by Nexus Model Supplies, who along with PowerBox help sponsor Rob's models.

### Master Class

During the weekend there were two master classes in formation flying. The first flying formation performance of the day was by Steve and Matt Bishop with their superb BAe Hawks in Red Arrows colours. They performed many Red Arrow type manoeuvres such as taking-off together.

This was followed by close formation flying, before splitting apart and then doing head-on crossovers. The pair rejoined and finished their routine with more close formation flying and then landed together. The crowd showed their appreciation with a huge round of applause.

### Lancaster Overcast

Later in the day there was more close formation flying of a different sort. Andy Johnson and Steve Holland flew their huge Lancaster bombers in close and at times very low level formation. They were joined by Steve Rickett with his Douglas Boston III and Geoff Graves with his Lancaster. There were also several fighters flying, too. During the final bomber and fighter flight of the day there was a huge pyrotechnics display to simulate bombing and strafing runs. This was of great enjoyment to everyone involved. I think Gregg Veasey got best effort for flying his P-47 straight through a large fireball created by one large explosion.

### Best Yet? You Bet!

This latest Cosford show has got to be rated as one of the best yet. It was an excellent weekend. The weather on the whole was very good and the new computer slotting system worked well, which meant there was continuous flying throughout both days. As usual there was a huge amount of work that went into getting the site ready, as well as the actual running of the event. The large crowds were treated to some excellent flying and coupled with the very good weather it made it a very satisfying weekend.

Everyone involved should get a massive pat on the back for a job well done. I'm already looking forward to 2016! However, before that we still have the remaining 2015 LMA events at Elvington, Much Marcle and the static show at Gaydon in October.

**RCMW**



Trevor Woods CARF Chance Vought Corsair was given refurbishment over the winter and looked and performed very well. The Moki 250 cc 5-cylinder radial engine adds to the model's superb performance



Another model with the ubiquitous Moki 250 cc 5-cylinder radial engine, Dave Pearson's latest model – the CARF P-47D 'Razorback' Thunderbolt



John Veasey's lovely Hawker Hurricane being put through its paces by son, Gregg



The Skymaster ARF Grumman F-9F Cougar of Toby Newton uses a Jetsmund Merlin 160 jet turbine. The colour scheme is taken from a VF-111 'Sundowner' F-4 Phantom, but looks great on the Cougar



Steve Holland's Avro Anson has been on the LMA show scene for many years but is still a great performer in his hands



Gerhard Reinsch, from Germany, made a welcome return to an LMA show with his Fokker Eindecker



Andy (R) and Adam (L) Johnson with Andy's latest creation, a half scale BD-5



The half scale BD-5 built and flown by Andy Johnson. This is another new model which flew very well



Rob Gardner's superb Krill Avanti S. This is a complex model, which has vectored thrust and a PowerBox Royal iGyro system to help manage all the servos



The CARF Extra 330sc has a 3.1 metre wingspan, which Rob Gardner exploits very well in his display routine



A regular crowd pleaser, Ted Allison's 1/3rd scale Lightning, flown by Dave Johnson



An unusual colour scheme for a Grumman Hellcat built by Nigel l'Anson of the TJD Team



Druine Turbulent of Dave Lowe



Lovely Precedent 1/4 scale Stampe SV4B owned and flown by Sharon Stiles. The model was built a long time ago but still flies very well



Some superb low-level Lancaster formation flying by Andy Johnson and Steve Holland



Geoff Graves flew his Wellington in the bomber slot. This is another Wellington built from a Tony Nijhuis plan. Twin Zenoah Zg 26 cc petrol engines power the large model very well



Andreas Engel flew his highly detailed P-51 Mustang with other members of the Legendary Fighter Team from Germany. The power unit for this fully composite model is a 3W 75 cc petrol engine



Another Legendary Fighters Team aircraft; the P-51 of Roland Sabatsihus. Roland's P-51 is powered by a 3W 75 cc petrol engine and has an on-board smoke system



Andy Johnson's Lancaster overflies Dave Johnson's taxiing Vulcan



Sharon Stiles looks on as Steve Holland is shown the finer points of Gerhard Reinsch (L) beautiful Tiger Moth. The model was designed from genuine de Havilland drawings



Another of the Legendary Fighters Team aircraft, the Dornier Do335 'Arrow' of Armin Morgenweck



Gerhard Reinsch's attention to detail is superb. The battery compartment of the Tiger Moth is very neat and the scale cockpit very realistic



Armin Morgenweck's own design Messerschmitt Bf109 G-4 finished in a desert colour scheme. The Bf109 has a 2.54 metre wingspan



The beautiful Tiger Moth of Gerhard Reinsch could quite easily be mistaken for the real thing. The model has a 3.19 metres wingspan, weighs 23.4 kg and has a 120 cc Valach VM 120 12-4T petrol engine



Don Billingham's lovely Handley Page W10. This model is based on the first air-to-air refueller used by Alan (later sir) Cobham



The Heinkel He162 of Armin Morgenweck. This is a full composite model from MPI-Tec. Armin says flies well, but is very tricky during take-off and landings – just like the real He162



Another LMA regular, Ken Richie's 18 ft wingspan Boeing B-17 flown by Andy Johnson



Don Billingham's Handley Page W10 and Airspeed Courier simulating the very early air-to-air refuelling technique that Alan Cobham tried to perfect in the 1930s



The lovely Pilot-RC 40% scale Decathlon of Jim Orr. The 150" wingspan model has a DLE 170 cc petrol engine and weighs 23 kg



The 1/4 scale Nieuport 17 of Steve Kasch. This is a very robust model produced by Steve and Bob Maltby. Standard wood construction and a 26 cc petrol engine makes this an ideal beginner's WW1 model



Ray 'Ozyray' Peters new P-47 performed well at its first show



The old Century Jets kit of the Supermarine Spitfire Mk 24 of Andy Wynn, an old model which still looks great in flight. Andy always gets the most out of the Zenoah Zg 62 cc petrol engine during his displays



Ziroli Mitsubishi Zero built and flown by Gregg Veasey. Another very realistic looking model in flight because of the superb weathered finish that Gregg has achieved



One of the most complex models at the show, Rob Gardner's Chinese J10 fighter jet. The model is produced by CARF and Rob's J10 has a JetCat P180 with vectored thrust. Rob also relies on a PowerBox Royal iGyro system for servo reliability



The Corsair of John Mason is built from a Meister kit. The model has 100" wingspan and a 3W 70 cc petrol engine



Low-level Lancaster! Andy Johnson shows great skill, showing just how low he can fly this 18 ft wingspan model



Steve Holland's Avro Anson, Steve Rickett's Boston IIIA and Gregg Veasey's P-47 flying through the pyrotechnics smoke during the morning finale



Robbie Skipton never undersells himself! Robbie is really happy after his first public outing with his large Pitts Challenger



The TJD Team and the Legendary Fighters Team from Germany come together with all their models



BAe Hawk of Steve Bishop during the Red Duo display

# NIModels.co.uk

NI's Fastest Growing Model Shop

**QuadCopters**

**Ready Built**

**Radio Gear**

**Accessories**

**Hubsan X4**  
Camera Edition £58.49 H1870

**LED Edition** £34.49 H187

**UDI Quad w/Camera**  
£69.49 A10158A

## Helicopters

**E-Flite Blade mCX2** £49.49 ETLH2410

**Axion RC Excell 200 RTF 2.4GHz**  
£53.49 AAK4000000000

**Udi RC**  
**Udi Blackhawk, Apache Hummingbird 2.4GHz 3 Channel** £48.99

**WOT4 XTREME**  
CHINA FORM

**ARTF** £269.99 A10158A

**Acro Wot Mk2 ARTF**  
£118.99

**P-51D Mustang BNF with AS3X** £72.99 PK2010000

## Trainers

**Irvine Tutor 40** £64.99

**Wot Trainer** £84.99

**Max Thrust**

**Riot RTF** £189.99

**Dx6i transmitter M2**  
£79.99

**Futaba 6J Transmitter & R2006GS Receiver**  
£117.99

**Spektrum AR400** £19.99

**Futaba R2006GS** £34.49

**HS311 Servo** £6.98

**S3117 Servo** £14.40

**S3003 Servo** £8.98

**Phoenix Pro flight Simulator V4**  
£69.99

**Sigma EQ Mini AC/DC Charger** £28.99

**Range Of Accessories Online.Glues.Balsa.Props..**

## FREE UK & IRELAND DELIVERY

ON ORDERS OVER £45.00

**EURO DELIVERY FROM £16.00**  
BASED ON 2KG - +2KG PER KG FROM £3.50



facebook  
SCAN WITH YOUR SMART PHONE

## airtek APEX SERIES

performance brushless outrunners

Featuring CNC machined aviation grade aluminium cases, E20 Japanese bearings (generally considered to be the best miniature bearings available), 0.2mm silicon-steel stators and a host of other quality features. These smooth running, rugged motors are built to give a long trouble free life.

Fantastic Deals on everything

## MULTIPLEX®

Check out our new Multiplex kit section. We have some fantastic deals on the whole Multiplex kit and R/C range including the fantastic new ParkMaster Pro starting at just £84.95!

## MULTIPLEX®



THE FABULOUS NEW

## FLASH8

is here!

Special Introductory Offer

**£199.95**

Full Combo with Optima 9 Rx and Life Battery



Over 1,000 pages, over 5,000 images and diagrams, nearly 2,000 products, a huge library of downloadable instructions and reviews plus lots of videos to keep you absorbed for hours!

come and see us at  
**www.airtekhobbies.com**

01484 506 118

**airtek**  
your local model shop on the internet



All prices quoted are correct at time of going to press (12.09.15). Offers are subject to availability. (MAD)

I've often thought about getting myself a nice big warbird, but have been put off by the proliferation of similar looking Spitfires, P47s and Corsairs down at the club. I was therefore intrigued to see an unusual looking Hellcat warbird being taxied out at the Weston Park show as part of the TJD Models Display Team.

This stunning, 105" span, 1/5 scale model is owned by Nigel I'anson of Enfield. Nigel built the Hellcat himself from a Nick Zirola plan, finishing it in March 2015. In all the build took only four months to complete, which is incredible when you consider the beautiful, detailed finish he achieved. Nigel's 38 years of modelling experience really shows through here! But it's not just the excellent workmanship that makes this model a real head turner. Your average Hellcat is not normally painted red!



**Right:** Exquisite panel and rivet detail can be seen all over the model

**Below:** Owner and builder Nigel I'anson with his 1/5 scale Grumman Hellcat drone



*In the first of a new series of articles focusing on top model show, competition and museum standard models, Mark Beacham turns his camera on a very unusual Grumman Hellcat*

### Drones Are Nothing New

Nigel explained that after the Second World War many now obsolete Hellcats were assigned to the Naval Missile Center at Point Mugu, California, for use as pilotless target drones. As well as playing an important role in the development of naval guided missiles, Hellcat drones were used to take air samples over nuclear test sites and even as guided bombs during the Korean War!

This model represents a manned prototype used to develop the remote piloting system. So, in effect this is a radio-controlled model of a full sized radio-controlled aircraft!

In addition to the distinctive colour scheme, the wingtip pods are another unusual feature of this Hellcat. Although they look like fuel tanks, these pods housed various pieces of electronic equipment and also smoke canisters, which were used to aid visual target acquisition. During the model show

display they certainly gave the model a very different profile in the sky.

### A Fine Flyer

As well as looking great, Nigel reports that his Hellcat drone also flies beautifully. The 80 cc Evolution petrol engine gives it ample performance for Nigel to guide it through the TJD display team's programme of typical warbird manoeuvres using his preferred JR radio system. Other than

a slight tendency to fishtail in windy conditions, the model exhibits vice-free handling and is straightforward to fly.

It was clear to see that Nigel is justifiably proud of his creation so I asked him what he particularly loved about this model. Without hesitation he replied, "The unusual colour scheme". Yes, I think that many of the spectators at the Weston Park show would agree with you there, Nigel.

**RCMW**



Above: The Hellcat drone joins the rest of the TJD Models team for another impressive display



# See what's waiting for you at [www.trapletshop.com](http://www.trapletshop.com)

## FANTASTIC SUBSCRIPTION OFFERS!

PLANS, LASERCUT  
WOODPACKS & ACCESSORIES!  
INFORMATIVE BOOKS!  
BRILLIANT DVD'S!  
CURRENT ISSUES - FREE P&P!

## DON'T WANT TO WAIT FOR YOUR VIDEOS

**AMAZING VIDEOS AVAILABLE TO STREAM OR  
DOWNLOAD RIGHT NOW!**

There is an amazing selection of flying videos  
available to stream or download right now.

Our top selling videos are now available to  
stream/download right now! At fantastic  
value, you can be watching your favourite  
modelling video sooner than you think!

**For full information on all our products and services please visit  
[www.trapletshop.com](http://www.trapletshop.com) or phone 01684 588599**

Make ordering even easier **PayPal** is now available on [www.trapletshop.com](http://www.trapletshop.com)

TRAPLET  
PUBLICATIONS

World Leaders in Hobby & Leisure Publications, DVDs, Plans & Parts

Mike Proctor hops the Channel for French cuisine and F5J

# SOARERS' SLOT



A happy group of Electric F3B competitors after the first ever competition where everyone used on-board electric launch. Clockwise from top left: Brian Johnson, Alex E XXL; Steve Haley, Fosa-E; Bob Dickenson, Crossfire; Clive Needham, Ascot; Dave Worrall, Crossfire/Cobra; Simon Haley, Fosa

## Whither The Winch?

More gliders are launched by electric power than any other method. Whether that is by means of a motor and propeller installed in the nose, or by means of an electric winch and nylon cable, the power comes from an electric source. For a long time people have been moving away from ground based winches and effectively 'putting the winch in the nose' making their available flying time just that, rather than have to spend considerable time, not to mention physical effort, laying out winches/lines/batteries. As one gets older and slower this becomes even more difficult on rough grass fields.

F3B multi task gliders have been winch launched for the best part of 40 years and some contestants have been flying for much of that time; no surprise then that they fall into the latter category!

In the UK steps have been taken to alleviate the problem with the introduction last year of 'Electric F3B', where an electric motor is installed in the model and the launch height for each task is controlled by a height limiter. The limiter is set to the sort of height that could be achieved by an equivalent winch launched model on the day (generally, the windier, the higher) and this tends to be around 270 metres.

Earlier this year a League competition was held in the UK where all the competitors used on-board power. I believe this to be a world-first for a national competition. If not, somebody will tell me pretty soon.

I'm indebted to Mike Holtby for the group photograph hereabouts. You will notice



Pilots on spots one to five waiting for the start of the 10 minute working time. Should you be wondering why Brian Johnson is standing like that you are not alone! As this end is near to the camping area, it is easy to reach in the five minutes prep time



The far end of the flight line as a slot starts and virtually everybody gets away on the buzzer. The lens makes things look closer together than they really are. Spot number 12 was a fair hike if you had to go there and back in 5 minutes!



*Pete Mitchell flew his light Pike Perfection with ballast at Ashurst*



*Cliff Hannam with his Ray-X gained the distinction of having the lowest (49 m) and highest (nearly 300 m!) launches at Ashurst. Most people were somewhere in the middle*



*French Junior, Adrien Gallet flew this Art Hobby High Aspect into a very creditable twenty-third place. The lightened areas are non-standard, as far as I know*



*Andreas Freundl enjoyed his weekend's flying so much that it had hardly stopped raining when he decided to encourage others to join him in a little test flying. He failed in that but we were happy to watch him!*

that F3B class gliders are smaller than their dedicated soaring cousins, being typically around 3 m span. This provides better agility and speed in the tasks flown. As they carry a considerable amount of ballast for the Speed and Distance tasks, F3B models can be two or three times heavier than eSoarers and therefore need more power to get aloft – typically around 900 W.

Steve Haley won the event, followed by son Simon, both flying e-Fosa's. Dave Worrall was third flying a hybrid Crossfire/Cobra.

Interestingly, Brian Johnson flew an Alex E XXL into fifth place, showing that this relatively cheap model could make a useful starter plane in this class. Indeed, Steve flew his Alex after the event and recorded a 17 second speed run on its first outing.

### **Tale Of Two Euros**

Once again, July heralded the start of the 'local' F5J International series, with the UK, French and Dutch events all taking place on consecutive weekends, starting at Ashurst West Sussex on the 4th and 5th. Phil Brandreth, Martyn Wharrie and myself have been doing the UK and French elements together for a few years and 2015 was no exception.

Bernie Jones has gathered around him a team of volunteers who have helped to make the UK F5J league a real success over the years and this year he even got the weather to behave better than forecast and produce a very testing weekend for the 40+ competitors.

Arriving on Thursday evening, we set up our lightweight camping gear and then erected our two Coleman Event Shelters relatively close to the ready box while we had a good choice of spaces. A few other campers and caravanners arrived during the evening. Some started flying, but we needed fish and chips!

Friday was our test-flying day and was the day many of the other competitors arrived, notably the French group of 14 flyers, who we feared might have been caught in the strike action in Calais. Luckily, they managed to arrive either by sea or tunnel. Team Valenta arrived all the way from the Czech Republic in their motorhome and were just about to start some evening flying when a phone call from the Czech police necessitated that they pack up and head back immediately because of a family bereavement.

Being our first Euro event in 2015 we were interested to see what model trends had developed and were not surprised to see that the move towards lighter models continues. A 1,500 gram, 4 metre span model is not unusual any more. Persuading such a model to return from downwind and keeping it in one piece after a series of competition landings in typical UK conditions is the problem.

Saturday dawned with a breeze and sunny conditions prevailed all day. Launch heights in the mid-to-high range (150 – 175 metres) were advisable. Lift was often very tricky to find and centre. When you managed to do both you needed it to get the model high enough to return from the downwind trap. As the land fell away

slightly to the downwind side it was all too easy to think that you could get back to the landing spot only to find that the fatal combination of turbulence, sink and the breeze deposited you 50 metres away. Several landings were more than 75 m away and those flights scored zero. For once the famous 'Ashurst tree lift' was not much in evidence, the wind being just enough off the necessary heading for the desired effect!

So ended Saturday, a day with some very up and down scoring and only the remaining few rounds on Sunday remained to try to improve things in order to get into the top ten for the Fly-Off. The fly in the ointment being that the forecast for Sunday was for rain until noon, followed by quickly rising wind. However, the Saturday evening BBQ put thoughts of that out of most people's minds!

The rain started on cue on Sunday morning but by mid morning it started to clear and the remaining three rounds were completed in near flat calm and minimum sink conditions. Choosing your launch height is critical here; just enough height to do ten minutes but is there likely to be any lift developing, which might encourage a low launch? After an interesting and different morning's flying the top ten retired, along with everybody else, for a splendid lunch, to be followed by the Fly-Off.

All the models had their motor switches checked to ensure that they could be re-started after the initial climb and the three Fly-Off flights began just as the wind started to rise, making conditions very tricky. Many competitors had two reasonable flights and one poor flight.

None of this affected Steve Haley, who had three perfect scores of 1000, putting him 750 points clear of second place George Wells, who was just ahead of Brian Johnson. Prizes and trophies were distributed to practically everybody, thanks to the generosity of various traders, and all agreed that this had been the best UK F5J yet. Thanks are due to all of Bernie's crew for putting in such a great effort.

### Onwards And Southwards

Fortunately we had booked Newhaven-Dieppe for our trip to France and caught the 00:30 boat on Sunday night. We arrived at Camping Port Caroline, near Angers on the Loire, around lunchtime on Monday and did very little flying all week because the weather was quite windy. However, we continued to explore the local area, visiting interesting Chateaux and local towns until Friday, when things improved weather-wise. We went to the field about three miles away and set up our shelters ready for the weekend competition hosted by the local club.

This F5J International event has an interesting history. Starting right at the beginning of the F5J class, it was run on a shoestring by Patrick Rivet and a few friends. Slowly at first, he managed to get club members interested in helping and now this has become the big event of the year. More than twenty members were fully involved in the competition. At least



*Steve Haley first stands in the centre of the winning group, with George Wells second on his left and Brian Johnson third on his right. CD Bernie Jones and scoring guru Martin Bell join in the celebrations*



*Bernie Jones and the organising team received a considerable ovation for their combined efforts at Ashurst*



*F5J field organisation in France. Those competitors and helpers on the left have just been released to walk down the Safety Corridor towards their take-off spots because the active slot has just ended and the yellow-shirted timekeepers are recording landing and height scores. The next slot can only start when the corridor is clear*



*An odd Bitsa; this is Genoma. A strange but effective combination of an Explorer wing/tail on a home brewed fuselage of AVA heritage and having a very large fin*

## SOARERS' SLOT

six were concerned with nothing but food! Interestingly, they bought all the food from one supermarket and received the use of two freezer trailers free for the weekend!

Starting at 10 am Saturday, it was soon obvious that there was some very good lift about, interspersed with large areas of sink. The hedges downwind often acted as lift generators and several competitors went quickly back there from low launches in the hope of a good score. Sometimes it worked and sometimes it didn't, resulting in a nice walk to collect the plane. At other times a trip to the hedge proved the saviour of an otherwise poor flight.

As the day developed the lift got bigger and so did the sink around it. Being four hundred metres high downwind at five minutes was no guarantee of a ten minute flight. If sink was contacted on the way back you might be lucky to get back into the field!

It has been the custom at Angers to visit a local establishment for the Saturday banquet. But this year the club did a meal for one hundred people in a marquee on the field. A pig roasted during the afternoon was the centrepiece, with about four other courses served around it. The evening was pronounced a resounding success by all present.

As at Ashurst, the second day was better than the first and several competitors came unstuck trying for very low launches when attempting to boost their score and gain a Fly-Off position. Eventually Jason Burns and myself made it through, with Jason doing a much better job and finishing sixth. Gerard Violon had a remarkable Fly-Off, nearly landing out on his first flight, landing up a tree on his second and then landing out on his third! All his launches were sub-fifty metres.

Patrick Pee had the most amazing 'save'! When at low altitude the hedge produced nothing so he continued across the next cornfield, flying lower than the trees behind, and finally hitting a boomer to fly-out and win the slot to take second overall.

Prizes, including pots of the locally grown flowers, were distributed and we returned home the following day, mentally noting the date in next year's diary.

### Safety Checks

Shortly after leaving for our continental trip I received a note telling me of a potentially serious incident regarding equipment failure during winch launching at a UK contest. At the time of writing accurate details of the mode of failure are not available, but a large metal turn-round spike was pulled out of the ground and hurtled towards the flight line 150 metres away, narrowly missing people standing there.

Whatever the cause of this turns out to be, it is yet another wake up call regarding regular safety checks on all our equipment, whether it be any kind of ground installation or that installed in our aircraft. Remember the maxim 'Safe Flying is No Accident' and apply that across the board to your modelling activities.

**RCMW**



*A dozen Brits flew in France, a number which has increased steadily over the years as the popularity of the event and its location become much appreciated*



*Well over 400 flights were made at Angers and only a couple of comings together happened. Even though the tip was barely held on after the collision the plane here was landed safely*



*Furthest travelled competitor in France was Manuel Almeida, who drove the 1600 km from Portugal to participate in France and also to do research for an FSJ event near Lisbon, probably in May 2016. Seen here with his wife and their Supra*



*Motor and logger testing was taken seriously in France. A large number of competitors were called for random checking after their flights*



Braincube AEROMODELS

**LASER IT!**

Get your plan precision laser cut - High quality materials included in the price  
Simple online ordering - Know the price before you order

Goto **www.braincube-aero.com**  
or call **0845 459 3174**

from Only **£24** +P&P

**OptiFUEL™**  
...your passion

THE UK'S ULTIMATE NITRO FUEL  
**WWW.OPTIFUEL.CO.UK**

+ COMPLETE RANGE OF LIPO CELLS & CHARGERS **WWW.OPTIPOWER.CO.UK**

**OptiPOWER**  
...your passion

**KEEP EVERY ISSUE IN PRISTINE CONDITION**

**MODEL WORLD**

**ONLY £9.95 + p&p**

REF: BI-RCMW

TO ORDER YOUR BINDERS GO ONLINE  
**www.trapletshop.com**

OR CALL THE ORDER HOTLINE ON  
01684 588599 (UK) • (+1) 217 355 2970 (USA)  
(02) 9520 0933 (AUS) • +44 (0) 1684 588599 (W/WIDE)

FREE PULLOUT R/C PLAN WORTH £11.99

**MODEL WORLD**

**IT'S A BLAST!**

**Red Bull**

**WINGS & WHEELS**

**SENIOR SASSEY**

**FREE R/C**

MSAO IND OPMOD BINDERS JAN14



Realise unique projects - with computer-aided desktop 3D systems.

Exclusively in the UK with STONEYCNC!

Customised projects with the desktop 3D system

- CNC router
  - CNC plotter
  - 3D printer
  - Vinyl cutter
  - Foam cutter
- All you need to CNC from **£1000**

Visit our website **www.stoneycnc.co.uk** and watch the machine in action!

Distributed exclusively in the UK by

**STONEYCNC**

Happy to help at all times:  
+44 (0) 1432 607 908

info@stoneycnc.co.uk  
www.stoneycnc.co.uk

We take Udi R/C's  
'First Person View' drone for a spin

# LARK FPV



The stout carry box contains the FPV drone and 2.4 GHz Tx, all secured in a moulded foam tray

**F**PV stands for 'First Person View' and uses a small camera mounted on a model to give an airborne view, similar to that which you would get if you were actually sitting in the aircraft. The view can either be fed back to the pilot via goggles, which although totally immersive does mean that you cannot easily take a breather if the movement of the model affects your senses and makes thing a little queasy, or it can be relayed to a screen mounted close to the transmitter such that the pilot can view it to set the camera up to take pictures or video, whilst being able to easily return his/her gaze to the model to fly it in a conventional manner between 'takes'.

In both instances a spotter is recommended, who can maintain eye-contact from the ground, just in case the pilot gets a bit confused whilst piloting the aircraft via the screen or goggles.

The Lark FPV, distributed by Ripmax, is of the viewing screen type and in this instance the display is an integral part of the 'control yoke' style 2.4 GHz transmitter. The 4.3 inch display is fitted between the two hand-grips on a tiltable mount. It also comes supplied with a clip-on sunshade that folds out to shield the view whilst flying in bright conditions. A series of buttons on the left hand side of the screen are used to control the small 640 x 480 pixel camera, which shoots either JPEG still images or video at

30 frames per second. The switch menu is overlaid on the FPV view so it is easy to operate the camera in flight.

The display unit also features a micro SD card slot so you can remove the micro SD card supplied with the drone, click it into the side of the screen and view the images and video that you have just taken. This is a great feature as it means you can have another try if the results are not quite as you intended. Whilst the 63.5 KB images will not stand much in the way of enlargement, they are certainly good enough to share on websites and social media, as is the video, although we did notice a bit of faint banding rolling down the screen, probably generated by shadows from the front propellers.



The optional prop guards provided should be fitted when training or if there is any danger of colliding with an obstacle in flight



A small but neat camera is mounted to the belly of the beast and yields usable results



The yoke style transmitter comes with a flip-up sunshade



Front view showing the camera lens in its straightforward and angled down positions



The brushed motors are protected within sturdy boom mouldings



1000 mAh flight battery and matching USB charger



The 450 mAh Tx LiPo and its small USB charger



The small LiPo is located in a small compartment on the back of the Tx



Without the sunshade the camera menu can be clearly seen. To operate the camera simply push the appropriate button on the side of the display unit



Lark FPV even comes with a 2 GB micro SD card and a tiny USB card reader



Spinning up ready for another aerial photo sortie

## Flight Controls

The Lark FPV is controlled using two short sticks, with throttle and yaw on the left, and pitch and roll on the right, just like a Mode 2 plane or fixed pitch helicopter. Unlike some drones, where the rotor blades will continue to turn if the throttle stick is sharply reduced, the Lark motors can stop so it is important to reduce power gently when you want the model to descend.

While the Lark FPV features 6-axis gyro stabilisation it is likely to require some trimming in flight. The left stick has trim buttons for fine tuning the yaw, to make sure that the Lark does not rotate in flight, while the right stick has four trim buttons in diamond formation to prevent drift in the fore/aft and sideways directions.

During our flight tests we were plagued by medium to strong winds so it is no great surprise that we had to dial in a good few clicks of forward trim to get the Lark to hold station for some aerial photography. Actually, a little bit of drift can be used

to your advantage when filming video as it provides a natural panning effect. Just don't take your eyes off the model for too long when staring at the screen!

The 6-axis gyro stabilisation works well and the Lark FPV is easy to fly, especially if you have previous drone experience. It powers up in Beginner mode with docile controls, but it can be made increasingly more agile by sequentially pressing the Mode switch on the back of the left hand-grip, which initiates Medium and then Expert levels of control.

After enjoying a spot of film work in Beginner mode, where the extra stability is of great help, it is fun to push the Mode button and to groove the model around in some fast circuits. Each time you press the button the Tx beeps to let you know which mode has been selected – one for Beginner, two for Medium and three for Expert – so there is no danger of mistakenly entering the wrong mode.

An extra level of agility is provided by a

matching button on the back of the right hand grip, this activates the 360 Degree Flip Mode. Press this and the Tx will emit a series of beeps to warn you that it is primed to perform a flip. Then simply jab the stick in the required direction – right or left, forwards or back – and the Lark will perform a quick flip. We wouldn't perform this too low, but the Lark doesn't seem prone to losing much height when performing these stunts.

## Box Work

It's about time we mentioned the drone itself. The Lark FPV is a four-bladed drone of conventional appearance but it is nicely styled, which gives it a purposeful look in the air. Two bright white LED lights and raised mouldings that sweep over the top of the body help to give it a 'robot frog' type face, so there's no confusion about which way it is pointing when airborne. Orientation is helped by coloured LED's mounted in the undersides of the white



*Distant view as seen high above Traplet Towers*



*Traplet's new offices enter the frame*



*Rotating the Lark FPV rewards us with a nice view of the Malvern Hills*



*A burst of flash freezes the action as the Lark is hovered in twilight. The underside lighting and front headlights are designed to aid night flying*

motor arms, and the props are colour coded too, with black props fitted to the two rear motors, with white ones at the front.

The model is supplied fully assembled and is ready to fly. It is supplied in a predominately white carry box, inside of which is a foam tray that provides storage for the drone and the transmitter. A set of four, clip-on prop guards are also supplied, plus some small self-tapping screws (and a matching screwdriver) to provide extra security. If the Lark is your first quadcopter then it makes sense to fit these guards, and you should also fit them if you wish to fly it when other people, animals or property are present, just in case it wanders into an obstacle. (Subject to CAA regulations. Please visit the CAA website: [www.caa.co.uk](http://www.caa.co.uk) and enter Dronecode in the search box.) But if you are flying over open ground and have adequate flight experience with a drone then you may wish to leave them off, as we did.

Lark FPV is powered by four brushed motors so it is important to let them cool down between flights to increase longevity. The flight battery is a 2S1P 1000 mAh LiPo, which is charged using the USB charger supplied. It is important to note that the red LED charge indicator goes out during charging and comes back on when the process is complete.

Conversely, the transmitter battery charger, which is also a USB device, lights

up during charging and goes out when the 450 mAh 1S LiPo is ready to use. This small pack is located in a compartment at the rear of the Tx and is accessed via a screw down hatch.

A set of spare props, and a small USB micro card reader completes the very comprehensive package. The only thing we would recommend buying is another flight battery pack as you are sure to want to have more than one flight with this fun quadcopter each time you take it out.

### Let's Take Some Pictures

The Lark is fitted with an on/off switch, which is located next to the camera on the underside of the body. So you can safely connect and insert the flight battery into its holder at the rear of the machine. The 1000 mAh LiPo comes fitted to a plastic tray, which turns up at the end to form a battery hatch door, complete with securing latch.

When the transmitter is switched on the light next to the power switch will flash. The drone can now be switched on, after placing it on a flat surface. Placing the throttle stick in its full throttle position and then immediately pulling it back to its lowest position arms the speed controller and the motors are ready to turn.

The last pre-flight check is, with the throttle still held low, to place the right stick in the bottom right hand corner. This will calibrate the drone, during which the underside LEDs will flash. When the lights

## MODEL WORLD DETAILS

### MODEL INFORMATION

<b>NAME:</b>	U842-1 Lark FPV
<b>MANUFACTURER:</b>	Udi R/C
<b>DISTRIBUTOR:</b>	Ripmax
<b>WEBSITE:</b>	<a href="http://www.2.ripmax.net/Item.aspx?ItemID=A-U842-1">www.2.ripmax.net/Item.aspx?ItemID=A-U842-1</a>
<b>PRICE:</b>	£199.99 SSP
<b>MODEL TYPE:</b>	FPV Quadcopter
<b>PARTS SUPPLIED:</b>	Complete, including Airframe, Transmitter, FPV System and Batteries
<b>PARTS REQUIRED:</b>	None

### MODEL SPECIFICATIONS

<b>CAMERA:</b>	640 x 480 px @ 30 fps
<b>LENGTH:</b>	486 mm
<b>WIDTH:</b>	486 mm
<b>HEIGHT:</b>	122 mm
<b>WEIGHT:</b>	350 g
<b>RADIO SYSTEM:</b>	2.4 GHz
<b>ELECTRIC MOTOR:</b>	4 x brushed
<b>BATTERY:</b>	2S1P 7.4V 1000 mAh
<b>ROTOR DIAMETER:</b>	190 mm
<b>GYRO:</b>	6 Axis

### DISLIKES

None

### LIKES

Easy to fly • Camera controls are easy to operate in flight • Screen can be used to view pictures and video at the flying field

go solid the Lark FPV is ready to fly.

If you have flown a quadcopter before then you should have no trouble flying the Lark FPV and you can experiment with the Mode and Flip switches. If this is your first quad multicopter then you should find it easy to fly too, but give yourself the best chance of success by making your first few flights in a wide open space and in calm conditions. Fit the prop guards and be sure to leave the Mode switch in Beginner as this will make the machine docile to fly.

A small amount of trimming may be required to hover high over to the side of a feature that you may want to video or photograph. But when you are ready to film it is easy to find the correct buttons to press from the menu that is overlaid on the FPV display.

We found the Lark FPV to be an excellent introduction to quadcopter flying, and for the casual taking of aerial photographs and video. The small camera does a good job of producing recognisable results and you may be pleasantly surprised at what you can see in the distance. It makes an ideal machine for honing your drone flying and camera skills before moving on to a brushless motor powered machine with a higher resolution camera. But one of those will cost considerably more than this smart machine, which can be purchased from Ripmax stockists at a shade under £200.

**RCMW**

**17TH OCTOBER 2015 - NEW UK EVENT**

WESTON PARK

*Festival of flight*  
*Spectacular* *in the dark*

Friends, Children, Families, Groups, Couples



**DISCOUNT**  
PRE BOOK  
**£20**  
PER CAR  
**£25** ON GATE

Marvel at our

**Festival of flight in the dark spectacular**

We animate the tranquil night sky above Weston Park with fabulous explosions of Fire & Light accompanied by spine tingling Music & Sound. The unique inspiring atmosphere of this event is sure to provide a memorable evening for all the family.

Camping available  
See website for more details  
Opening times 6pm - 10pm

**WESTON PARK**

Weston-under-Lizard  
Shifnal, TF11 8LE

PRE BOOK @

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

enquiries@westonparkinthedark.co.uk  
01952 587298



**INWOOD MODEL SUPPLIERS**  
The Home of Radio Control Modelling

**ONLINE SUPERSTORE**

open 24 hrs, 7 days a week

Most comprehensive RC Model  
Model Website in the UK

**SITE UPDATED WEEKLY!**

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

**HIGH PERFORMANCE CERAMIC BEARINGS**

**ORANGE SEAL**  
CERAMIC HYBRID • ABEC #7 • NON-CONTACT SEAL



*Spin 'em Fast,  
Win More Races.*

**ULTIMATE RACING BEARINGS!**

**BOCA BEARING**  
Precision Bearings for Industry, Motors & Recreation

(800) 332-3256 | [www.bocabearings.com](http://www.bocabearings.com)

Get mobile with our APP -  
download it **FREE** now!



**RC MODEL WORLD**  
**App**

Now you can read RC Model  
World magazine – no matter  
where you are!

Available at  
**pocketmags.co.uk**

Ipad • Android • Kindle Fire • Windows 8

Available on the  
App Store

Google play

Available on  
kindle fire

Windows 8

HSAD APP/RC/MW/MAR15

# WOODSPRINGS WINGS 2015

*Vaughn Entwistle pays a visit to the Somerset club's annual airshow*



*Wheeeeeeeeeeeeeeee!*



*A gorgeous day in Somerset, a gorgeous aerobat, and a gorgeous lady holding the tail while her partner revs up the motor. What more could you want?*

The annual Woodsprings Wings model airshow seems to get bigger and better every year. Held over the July 3rd-4th weekend, the 2015 aerial extravaganza was no exception. And even a Somerset monsoon could only temporarily interrupt the flying on Sunday.

With membership hovering around the 150 mark, Woodsprings Wings is one of the biggest R/C clubs in Somerset. The club flying field, located in the Somerset levels near Yatton, is the envy of many. Screened by a row of trees planted years ago by

members, the 21-acre site boasts a tarmac strip and taxi-ways, as well as a club house and picnic tables. For special events, such as the annual show, it provides plenty of space for camping and can still accommodate rows and rows of vendor tents. Now that's a club field!

## **Big Boys Bring Their Big Toys**

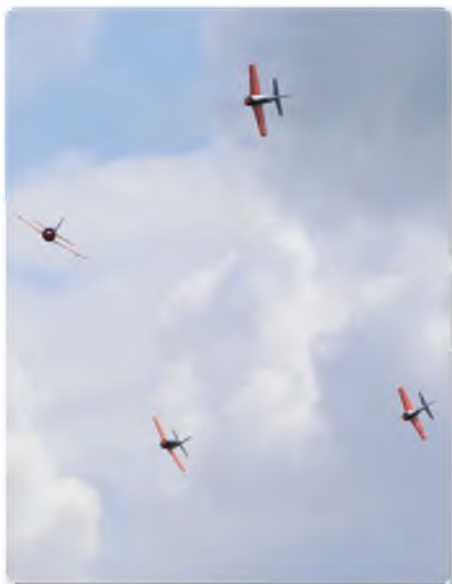
Like the bigger shows, Woodsprings had jets, large and powerful aerobats, R/C helicopters, and lots of scale models. But being a club event, the show delivered an



*I guess this is what was lacking. The aerobatic display featured a live blues singer!*

amazing display of diversity with demos of model aircraft you just don't see at the big shows, such as a DLG hand launch glider, and even a smoke-and-fury-filled launch of high power rockets.

One of the highlights of this year's show was the participation of many LMA (Large Model Association) members and their stunning huge scale models. While the jets and aerobats kept the crowd adrenalinised, a large contingent of the LMA supplied the 'Wow!' factor with their huge and impressive scale models. A crowd favourite



A sky full of Rare Bears. At times they got much closer than this



Look out! Hot flying foam...



This handsome Hurricane was just one of many WWII models



Helper gives the thumbs up and readies to release a Hurricane



Here comes the big boys! One of the two seventeen foot wingspan Lancasters being rolled out



Gorgeous Bristol M.1 basking in the Somerset sun

was Don Billingham's five metre wingspan Handley Page W10 that churned around the sky powered by two Laser 100 four-strokes driving 28" x 8" props. This twenties vintage biplane airliner is an unusual scale subject and it was dazzling to watch its majestic and stately flight.

### Fun And Frolics

But this was a club show, which allowed room for a little levity. Many of the demos were a howl to watch, such as the flight of no fewer than ten IC-powered Fun Fighters that put on a display of aerial hooliganism

as they vied to see how many aeroplanes could be shoehorned into a tiny window of sky at one time. No sooner had they landed when their place was taken by a squadron of six E-flite Grumman F-83 Rare Bears. Although a lot quieter than their IC-powered counterparts, the electric powered foamies gave up nothing in terms of performance as they played 100 mph tail-chase games about the sky.

### Nostalgic Tribute

The show had 'impressive' in bucketloads, with flights by two Lancaster bombers

owned respectively by Steve Holland and Andy Johnson. (Andy's is the Dambusters Lancaster, which was modified to carry the Barnes Wallis bouncing bomb). At seventeen feet in span, these iconic bombers possess tremendous gravitas and the sight of them flying together in close formation raised the hairs on the back of everyone's necks. Truly a stirring tribute to the bravery of our wartime Bomber Command heroes.

The nostalgia taps cracked wide open as Richard Rawle rolled out his stunning two-seater Spitfire (named 'Christine' after

the real aeroplane's owner). Two-seat Spits were rare back in the day and are rarely modelled, making this 12 foot wingspan beauty even more special.

## Walkin', Talkin', Livin' Doll

A modern-day crowd pleaser was the Brightling Stearman biplane flown by Richard Rawle. This 1/3 scale wonder is true to scale, right down to the colour scheme, which employs paint donated by the actual Breitling team. Now that's authentic! Sharon Stiles had been providing much of the commentary up until this point, and now she demonstrated how women are better than men at multi-tasking

by continuing her commentary while simultaneously piloting the third-scale wing walker strapped atop the Stearman. The radio control wing walker (don't-call-it-a-doll!) was more than just for show. Remarkably, it was a fully articulated mannequin. Under Sharon's guidance the wing walker kicked her legs, raised her arms, and at one point even flipped upside down atop the wing in replication of a real wing walker's performance. Now that's showmanship! Watching the hair-raising aerobatics, I wondered if the wing-walker was also fitted with a 'scream-your-lungs-out' switch?

More LMA models were flown over the duration of the two-day show, including Andy Johnson's huge deHaviland Vampire in its striking black and yellow paint scheme, and a very pretty yellow biplane, which even sported an RC Model World sticker - classy touch!

## Same Date, Same Place, Same Club . . . But Next Year

If you plan to be anywhere near Somerset in 2016, and you haven't yet attended a Woodspring Wings show, be sure to pencil in the date on your calendar – the first weekend in July. See you there.

**RCMW**



Steve Holland's 'Lanc' thunders past



Two giant Lancaster bombers flying in close formation. What a sight!



Richard Rawle rolls out the two-seat Spitfire



What's better than a scale Fiesler Storch? Two Fiesler Storchs...



The double Spit salutes the crowd with a dipped wing



Back to the fun and games. A Pitts Python hovers inverted in the breeze



That Richard Rawle chap again. This time with the stunning Breitling Stearman Bipe



Fearless Wing Walker goes for a headstand



Radio controlled Wing Walker - just 'don't-call-it-a-doll'!



Corral full of sexy jets awaiting their turn



Pretty yellow biplane. The RC Model World sticker really adds the finishing touch



While Richard pilots the Stearman, Sharon Stiles 'pilots' the Wing Walker and carries on with her commentary!



Riders on the storm? Ominous weather looms on the horizon

# BOOK REVIEWS

Here are a few new books to add to your aviation library

## Zero To Hero; From A Boy's Home To RAF Hero

By Peter W. Bodle FRAeS  
Fonthill Media, 160 pages  
978-1781553039  
Hardback, £18.99

Sometimes heroes are found in the least likely places. This slim volume traces the journey of Victor Roe, who had one of the very worst beginnings in life as one of nine children born to two impoverished alcoholics. When he was two years old, Victor and his siblings were removed from their parents by the courts and placed in institutions. Victor was sent to a boy's home, where he endured a strict regimen of discipline and hard work (including hard labour as a farm hand.) When he became of age, Victor swapped one institution for another as he enlisted in the RAF and joined the elite as bomber crew. Victor was made a "tail end Charlie" and flew as a rear turret gunner in a variety of British bombers including a Wellington, a Halifax and a Lancaster. Victor's career with the RAF saw him take part in some of the most famous raids carried out by Bomber Command. Tragically, Victor perished along with the rest of his crew on his 98th mission and he was posthumously awarded the CGM (Conspicuous Gallantry Medal). Like many unsung heroes of the war, Victor's story is one that deserved to be told and this engaging book does just that.

Reviewed by Vaughn Entwistle



## Flight; The Evolution Of Aviation

By Stephen Woolford and Carl Warner  
Andre Deutsch; Reissue edition  
(August 4, 2015), 160 pages  
978-0233004594  
Hardback, £20.00

As a life-long aviation nut I have a fair collection of books on flight and flying, but was pleasantly surprised when I cracked open this beautifully illustrated tome on the history of aviation. I've owned or borrowed similar books before and have seen the same photographs and illustrations repeated over and over. However, this large format picture book is filled with rare photographs and memorabilia I have never seen before. An example? How about a telegram sent by Orville Wright informing his father of the Wright brothers' first successful flight at Kitty Hawk? Or an illustrated page scribbled by Sir George Cayley of his 1804 model glider (sadly not radio controlled). Yes, you've probably seen his sketch of the glider reproduced in books before, but not the entire page, complete with his hand jotted notes (little of which I can decipher, as his handwriting is worse than mine). The book begins with the promising dawn of aviation and continues through the Golden Age, the war years, and finishes with modern jet fighters, and even the 9-11 attacks where airliners were flown into the World Trade Center - the aviation dream turned dystopian nightmare. At 160+ pages, it is not an exhaustive book on the subject, but what it lacks in depth it makes up for in originality. Altogether a refreshing survey filled with seldom-seen photographs, it makes a welcome addition to an enthusiast's aviation library.

Reviewed by Vaughn Entwistle



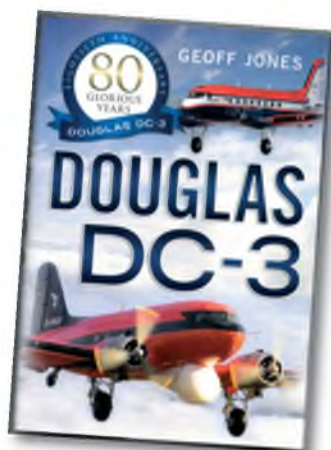
## Douglas DC-3: 80 Glorious Years

By Geoff Jones  
Fonthill Media, 208 Pages  
978-1-78155-103-5  
Hardback, £20.00

Geoff Jones is a pilot, writer, and photographer. He grew up in the 1960s, hearing the Cambrian Airways DC-3s thundering out of his local airport at Cardiff Rhoose. His affection for the DC-3 has continued over a half century of world-wide travel reporting and photography, covering many aspects of the world's civil aviation scene. Flying a DC-3 in the Caribbean was a highlight of his career.

The DC-3 is as iconic an aircraft design as the Mustang or the Spitfire. It has endured more than any other, with a few hundred examples still in use across the world: from Africa, to Antarctica, and to the USA. Many of the DC-3s current operators use turbine conversions of the type (BT-67), with the main proponents being from South Africa and Wisconsin, USA. Many fledgling US airlines blossomed due to their DC-3s and almost every major post-war airline started running their schedules with this type; they took advantage of the surplus in military DC-3s (C-47s) after the Second World War, which had already helped to make history in operations such as the huge support for the D-Day Normandy Landings. In this 208 page hardback book, Geoff Jones explores the rich history of the DC-3 from its beginnings in Southern California to its use across the world. Even today, numerous enthusiast organisations continue to keep DC-3s airworthy and fly them for their members. The days of DC-3 commercial operations are now nearing an end, due to the unavailability of spare parts and the scarcity of expensive avgas fuel in remote parts of the world. And yet, the legacy of the DC-3 has endured; the Airbus and Boeing operators of today have the DC-3 operations of the previous century to thank for their current success.

Reviewed by Tony van Geffen



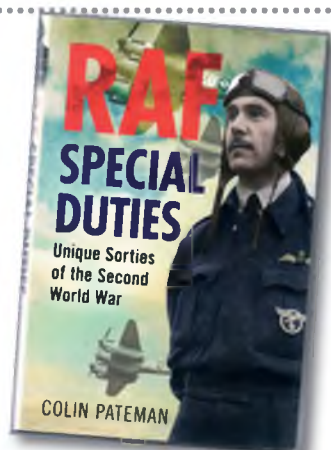
## RAF Special Duties: Unique Sorties Of The Second World War

By Colin Pateman  
Fonthill Media, 208 Pages  
978-1-78155-304-6  
Hardback, £20.00

During the Second World War the RAF employed Special Duties pilots and air crew on a wide range of extraordinary operations. These men were selected for their skill and experience, and were entrusted with missions of great importance. Whether ferrying VIPs across occupied territory, bombing Gestapo headquarters, disrupting enemy communications or dropping secret agents deep behind the lines, they carried out their duties with unfaltering bravery and dedication. 'RAF Special Duties: Unique Sorties of the Second World War' delves into the personal annals of the RAF - the log books - and provides a window into a lesser-known side of the service; these stories have never been told before in one volume. Many Special Duties operations flew out of RAF Tempsford, Britain's most secret airfield, and contributed behind the scenes in sorties of crucial importance. Others were all about publicity, using scientific methods to create 'spoof squadrons' on enemy radar or filming bombing sorties for Allied propaganda. Written by an experienced author with many books to his credit, Colin Pateman presents these gripping stories from the perspectives of pilots and air crew - men whose skill and courage were tested beyond ordinary expectations.

The hardback book is superbly illustrated with many previously unseen black and white images.

Reviewed by Tony van Geffen



# Traplet Plans & Parts Service

*www.trapletshop.com for all your modelling needs!*

## This month's featured plan



\* Image shows finished replica of model. Additional parts are required.

### FOKKER D.VIII

Designer: Peter Miller	
WINGSPAN	54"
SCALE	1:6.5
ENGINE	.25 CU.IN. TWO-STROKE

This 54 inch (1372mm) span 1:6.5 scale parasol wing model of the WW1 German fighter designed by Peter Miller makes an ideal first scale model. Two large, well-detailed sheets give full details of construction, including patterns for making the undercarriage structure and wing struts

**PLAN REF MW3599**

**£21.99 / \$36.99 + P&P/S&H**

**LASERCUT WOODPACK REF WP3599**

**£51.99 / \$88.99 + P&P/S&H**



**SAVE MORE! Buy the woodpack and plan together and save an additional 10%. Enter the code MW1015 at the checkout to get both for only £66.58 / \$113.38.**

**This offer is only valid till 15th October 2015.**

**Order now! Visit [www.trapletshop.com](http://www.trapletshop.com) or phone +44(0)1684 588599**

Make ordering even easier **PayPal** is now available on [www.trapletshop.com](http://www.trapletshop.com)

**TRAPLET**  
PUBLICATIONS

World Leaders in Hobby & Leisure Publications, DVDs, Plans & Parts

## DALOTEL DM-165



Designer: Peter Miller Difficulty \*\*\*

WINGSPAN	57"
WEIGHT	5LB 10Z
RADIO FUNCTION	4

PLAN MW3541	£18.99 / \$30.99
WOODPACK WP3541	£89.99 / \$152.99
FULL SET SET3541	£98.08 / \$165.58
SAVE £10.90 / \$18.40	

## HAWKER TYPHOON 1B



Designer: Sepp Uiberlache Difficulty \*\*\*\*

WINGSPAN	83"
WEIGHT	22LB
SCALE	1:6

PLAN MW3564	£26.99 / \$75.99
F/G COWL CF3564CL	£43.99 / \$75.99
CANOPY CA3564CY	11.99 / \$20.99
FULL SET SET3564	£82.97 / \$172.97
SAVE £8.30 / \$17.30	

## HAWKER TEMPEST 5



Designer: Sepp Uiberlacher Difficulty \*\*\*\*

WINGSPAN	182.5"
RADIO FUNCTIONS	6
WEIGHT	20LB

PLAN MW3565	£26.99 / \$43.99
WOODPACK WP3565	222.99 / \$379.99
FULL SET SET3565	£224.98 / \$381.58
SAVE £25.00 / \$42.40	

## HAWKER HURRICANE MK.1



Designer: Sepp Uiberlacher Difficulty \*\*\*\*

WEIGHT	15LB
LENGTH	68"
WINGSPAN	88"

PLAN MW3566	£26.99 / \$43.99
CANOPY CA3566CY	£11.99 / \$20.99
F/G COWL CF3566CL	£39.99 / \$69.99
FULL SET SET3566	£71.07 / \$121.47
SAVE £7.90 / \$13.50	

## WESTLAND LYSANDER



Designer: Keith Humber Difficulty \*\*\*

WINGSPAN	63"
WEIGHT	4LB

PLAN MW3534	£21.99 / \$35.99
WOODPACK WP3534	£79.99 / \$136.99
FULL SET SET3534	£91.78 / \$155.68
SAVE £10.20 / \$17.30	

## SUPER ACRO-ZENITH CH180



Designer: Peter Miller Difficulty \*\*

WINGSPAN	44"
LENGTH	40"
SCALE	1:6

PLAN MW3512	£18.99 / \$30.99
WOODPACK WP3512	£84.99 / \$144.99
CANOPY CA3512CY	£12.99 / \$22.99
FULL SET SET3512	£105.27 / \$179.07
SAVE £11.70 / \$19.90	

## BRUNSWICK LF-1 ZAUNKONIG



Designer: Phillip S Kent Difficulty \*\*\*

WINGSPAN	53"
RADIO FUNCTIONS	4
LENGTH	40"

PLAN MW3396	£17.99 / \$29.99
WOODPACK WP3396	£41.99 / \$71.99
FULL SET SET3396	£53.98 / \$91.78
SAVE £6.00 / \$10.20	

## CLIPPED WING PIPER J-3 CUB



Designer: Phil Kent Difficulty \*\*

WINGSPAN	56"
RADIO FUNCTION	4
LENGTH	58"

PLAN MW3307	£17.99 / \$29.99
WOODPACK WP3307	£50.99 / \$86.99
FULL SET SET3307	£62.08 / \$105.28
SAVE £6.90 / \$11.70	

## SPITFIRE MK. 22



Designer: John Lockwood Difficulty \*\*\*

WEIGHT	4LB 140Z
WINGSPAN	49"
RADIO FUNCTIONS	4

PLAN MW3202	£14.99 / \$24.99
ACCESSORY SET SET3202	£21.99 / \$37.99
FULL SET FSET3202	£33.28 / \$56.68
SAVE £3.70 / \$6.30	

## SPITFIRE IX



Designer: Giles Fowler Difficulty \*\*

WINGSPAN	36"
RADIO FUNCTIONS	4
LENGTH	29"

PLAN MW3201	£12.99 / \$21.99
F/G COWL P3201	£28.99 / \$49.99
ACCESSORY SET CA3201SET	£5.99 / \$10.99
FULL SET SET3201	£43.17 / \$74.67
SAVE £4.80 / \$8.30	

## GLOSTER JAVELIN



Designer: Steve Rickett Difficulty \*\*

WINGSPAN	90"
RADIO FUNCTIONS	6
ENGINE	2 X OS91 DF 2-STROKE

PLAN MW2793	£29.99 / \$48.99
CANOPY CA2793CY	£18.99 / \$32.99
ENGINE HATCH CF2793CL	£12.99 / \$22.99
FULL SET SET2793	£44.08 / \$73.78
SAVE £4.90 / \$8.20	

## RAF SE5A



Designer: Duncan Hutson Difficulty \*\*

WINGSPAN	73"
RADIO FUNCTIONS	4
LENGTH	58"

PLAN MW3290	£44.99 / \$72.99
WOODPACK WP3290	£140.99 / \$239.99
PLAN & ACCESSORY SET	£326.99 / \$556.99
SAVE £29.78 / \$47.88	

**For full details on all kits,  
woodpacks, plans and accessories  
visit [www.trapletshop.com](http://www.trapletshop.com)**

## DASSAULT MIRAGE 2000B Difficulty \*\*\*\*



Designer: Philip Noel	
WINGSPAN	43"
RADIO FUNCTIONS	4 +
ENGINE	.46 DF

PLAN MW2518	£21.99 / \$35.99
CANOPY CA2518CY	£11.99 / \$20.99
FULL SET SET2518	£30.58 / \$51.28
SAVE £3.40 / \$5.70	

## SPACEWALKER Difficulty \*\*\*



Designer: Dennis Tapsfield	
WINGSPAN	91"
RADIO FUNCTIONS	4
ENGINE	.61 2-STROKE

PLAN MW2222	£21.99 / \$35.99
WOODPACK WP2222	£98.99 / \$168.99
F/G SPATS CF2222ST	£22.99 / \$39.99
FULL SET SET2222	£129.57 / \$220.47
SAVE £14.40 / \$24.50	

## F100 SUPER SABRE Difficulty \*\*\*\*



Designer: Pavel Bosaks	
WINGSPAN	42.5"
RADIO FUNCTIONS	4 - 5
ENGINE	.81 2-STROKE

PLAN MW2195	£12.99 / \$21.99
CANOPY CA2195CY	£5.99 / \$10.99
FULL SET SET2195	£17.08 / \$29.68
SAVE £1.90 / \$3.30	

## FOURNIER RF -5 Difficulty \*\*\*\*



Designer: Duncan Hutson	
WINGSPAN	112"
RADIO FUNCTIONS	4 - 7

PLAN MW2540	£26.99 / \$42.99
CANOPY CA2540CY	£14.99 / \$25.99
F/G COWL CF2540CL	£21.99 / \$35.99
FULL SET SET2540	£57.57 / \$94.47
SAVE £6.40 / \$10.50	

## JIM BEDE BD-8 Difficulty \*\*\*



Designer: Duncan Hutson	
WINGSPAN	58"
RADIO FUNCTIONS	4 - 5
ENGINE	.61 2-STROKE

PLAN MW2541	£16.99 / \$27.99
CANOPY CA2541CY	£14.99 / \$25.99
F/G COWL CF2541CL	£20.99 / \$35.99
FULL SET SET2541	£47.67 / \$80.97
SAVE £5.30 / \$9.00	

## BRISTOL BEAUFIGHTER Difficulty \*\*\*



Designer: Tony Nijhuis	
WINGSPAN	70"
RADIO FUNCTIONS	4 - 6
ENGINES	2 X .25 - .35 2 STROKE

PLAN MW2605	£21.99 / \$35.99
CANOPY SET CA2605CY	£12.99 / \$22.99
FG COWL SET CF2605CL	£31.99 / \$54.99
FULL SET SET2605	£60.27 / \$102.57
SAVE £6.70 / \$11.40	

**ORDERING  
IS EASY!**

**[www.trapletshop.com](http://www.trapletshop.com)**

TEL: UK 01684 588599 • USA 217-355-2970

AUS 02 9520 0933 • ROW +44-1684-588599

Please note a wood pack consists of the ribs and formers for the model. You will need to source additional strip wood and balsa from your local modelling materials supplier to complete the model. All prices are correct at time of going to press but may be subject to change without further notification. Prices do not include P&P/S&H. For more information on postage, please see [www.trapletshop.com](http://www.trapletshop.com).

Check our website for a full list of events

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

# Diary Dates

A FREE service, advertise your club's event, show, fly-in, bring and fly, swapmeet, sale or whatever. Simply send in the details to: 'Diary Dates', RC Model World, Traplet Publications Ltd., Traplet House, Willow End Park, Blackmore Park Road, Malvern, WR13 6NN, UK. Or Email to [RCMW@traplet.co.uk](mailto:RCMW@traplet.co.uk) Traplet Publications Ltd. are unable to take responsibility for event cancellations. Check before you go.

## INDOOR

**26th Sep, 31st Oct, 28th Nov '15**  
**Tonbridge Gassers and Rubber Fanciers Indoor Flying**, at King's Rochester Sports Centre, 601 Maidstone Road, Rochester, Kent ME1 3QJ. From 6.30 pm until 10.00 pm. Freeflight and also lightweight R/C timed flying sessions throughout the evening. Contact Steve on 0208 942 5000 or Eric on 01622 737814 before travelling to confirm

**27th Oct, 24th Nov, 29th Dec '15, 26th Jan '16, 23rd Feb, 29th Mar, 26th Apr, 31st May, 28th Jun**  
**Indoor R/C Small Models Meets**, in the Main Hall at Wickham Community Centre, Mill Lane, Wickham, Hants PO17 5AL. All meetings run from 7.00 pm to 9.30 pm. Models are limited to a max weight of 95 grams (3.5 ounces) for fixed wing aircraft, including battery (not to exceed a 2-cell LiPo pack). Helicopters are to be limited to a rotor diameter of 12" (305 mm). All models will be weighed before flight, and will be judged on their suitability for the venue. Admission will be £4 for fliers and £1 for spectators. Flyers will be required to show proof of insurance. Please contact: Alan Wallington, 'Wrenbeck', Bull Lane, Waltham Chase, Southampton, Hants. (Tel. 01489 895157) or see our website: [www.wcaero.co.uk](http://www.wcaero.co.uk)

**3rd Oct, 7th Nov, 5th Dec '15**  
**Indoor Fun Flying** at Furze Field 2015. Furze Field Sports Centre, Mutton Lane, Potters Bar, Herts EN6 3BW. 6 pm until 10 pm. Flyers £8, spectators £2. Contact Mike Quille, Tel: 020 8500 3549 or Email: [mp.quille@live.co.uk](mailto:mp.quille@live.co.uk)

**10th Oct, 14th Nov, 12th Dec '15**  
**North London MFC Indoor Radio Control Meetings 2014**. Furze Field Sports Centre, Potters Bar, Hertfordshire EN6 3BW. Saturdays, 6 pm to 10 pm. All up weight for fixed wing 225 g, 36" span and helicopters 400 g. BMFA insurance required. Flyers £9, spectators £2.50. Contact Peter Elliot, Tel: 01707 336982

**10th Oct, 7th Nov, 5th Dec, 9th Jan '16, 6th Feb '16, 5th Mar '16**  
**Indoor R/C Meets**, in the Main Hall at Havant Leisure Centre, Civic Centre Road, Havant PO9 2AY. From 7 pm to 10 pm. No free-flight models. £7 for flyers, £1 for spectators, proof of insurance required. For further details please contact: Alan Wallington, 'Wrenbeck', Bull Lane, Waltham Chase, Southampton, Hants. (Tel. 01489 895157) or see our website: [www.wcaero.co.uk](http://www.wcaero.co.uk)

**24th Oct, 21st Nov, 23rd Jan '16, 20th Feb '16, 19th Mar '16**  
**Indoor R/C Meets**, in the Main Hall at Fleming Park Leisure Centre, Passfield Avenue, Eastleigh, Hants SO50 9NL. From 7 pm to 10 pm. No free-flight models. £8 for flyers, £1 for spectators, proof of insurance required. For further details please contact: Alan Wallington, 'Wrenbeck', Bull Lane, Waltham Chase, Southampton, Hants. (Tel. 01489 895157) or see our website: [www.wcaero.co.uk](http://www.wcaero.co.uk)

## GENERAL

**25th to 27th Sept '15**  
**Annual Bring and Fly**, hosted by the Lley Model Aero Club, at Penrhos (ex RAF), Pwllheli, Gwynedd LL53 7HG. As well as an excellent power site we have fantastic slope sites for the three-day event. We have refreshments and a good campsite adjacent to our power site. BMFA insurance is required or similar. For more info contact: [secretary@lleyrnmac.org.uk](mailto:secretary@lleyrnmac.org.uk) or go to [www.lleyrnmac.org.uk](http://www.lleyrnmac.org.uk)

**26th Sep '15**  
**GBR/CAA F3A League** competition. Skelbrooke. All schedules. See [gbrcaa.org](http://gbrcaa.org) then forum 'Competition News' for details and 'Competition Entry Form' for fees and payment. Visitors welcome but please contact Contest Director Bob Rowland on 07969 456441 for details

**26th/27th Sep '15**  
**Festival of Flight** including the Vic Smeed Memorial Day (bring and fly one of his designs). Vintage R/C models and all disciplines of sport flying welcome. Directions: Old Warden Airfield, Beds SG18 9EP. All pilots are required to show proof of insurance and BMFA membership, which shows 'B' certification. This is a requirement of the Shuttleworth management. All types of model are welcome at all events (maximum weight 10 kg). Contact: Ken and Sheila Sheppard; Email: [modelair.oldwarden@gmail.com](mailto:modelair.oldwarden@gmail.com) or phone 07799 132999

**3rd Oct '15**  
**Huddersfield & District MAC Swap Meet**, at Shepley Methodist Church Hall, Penistone Road, Shepley, Nr. Huddersfield, West Yorkshire HD8 8DB, 9 am to 12 pm. The Church Hall is situated on the A629, approximately half a mile North of Sovereign crossroads (A629 and A635), on the outskirts of Shepley village. Entrance Fee £3, tables FREE to sellers, 20 tables, plus bring your own camping tables. No table bookings. Parking for 30+ cars to rear of Church Hall. Refreshments available; tea, coffee and bacon sandwiches! Contact: 01226 766636, Mobile (3rd Oct. ONLY) 07790 647827

**3rd Oct '15**  
**Swapmeet at Waltham Chase Village Hall**, Winchester Road, Waltham Chase, Hants., SO32 2LX, hosted by the Waltham Chase Aeromodellers, from 10 am to 12 noon. The hall is located on the B2177 between Wickham and Bishops Waltham, and 15 minutes' drive from Junction 11 M3. The hall has a free car park. Admission will be £2 for adults, whilst accompanied children will be admitted free. Tables can be booked for £7 each (to include admission for two people). Please contact Alan Wallington (details below) for table bookings. Refreshments will be available throughout the event. Alan Wallington, 'Wrenbeck', Bull Lane, Waltham Chase, Southampton, Hants. (Tel. 01489 895157) or see our website: [www.wcaero.co.uk](http://www.wcaero.co.uk)

**4th Oct '15**  
**GBR/CAA F3A League** competition. Hurley. All schedules. See [gbrcaa.org](http://gbrcaa.org) then forum 'Competition News' for details and 'Competition Entry Form' for fees and payment. Visitors welcome but please contact Contest Director Adrian Harrison on 07976 244004 for details

**4th Oct '15**  
**North London MFC Large Model Day**, Warren Lane, Baldock, Herts, SG7 6RR. Flying from 10 am. BBQ and drinks available. All pilots need BMFA A certificate or LMA proficiency, those flying >7 kg models need BMFA B certificate or LMA proficiency. Proof of insurance required. No noisy models please. £5 pilots entry fee. Contact Maurice Northcott on 07866 105721 or Email: [mail@mpnlt.d.fsnet.co.uk](mailto:mail@mpnlt.d.fsnet.co.uk)

**10th Oct '15**  
**Mega Swapmeet**, at Meir Community Centre, Stoke-on-Trent, Staffs ST3 7DY, 9.30 am till 1 pm. Tables £7, Entrance £2. Contact Steve Ogden on 01782 853883 or 07504 287526. Email: [topgun@modelpilot.co.uk](mailto:topgun@modelpilot.co.uk) [www.modelpilot.co.uk](http://www.modelpilot.co.uk)

**10th/11th Oct '15**  
**PSSA Fly-In**, The Great Orme, Llandudno, meet at the 'Tank Track' car park for 10 am each day. Open to non-PSSA members – proof of insurance required. Usual 'Fly for Fun' format. For more information contact Phil Cooke on 07772 224719 or email: [webmaster@pssaonline.co.uk](mailto:webmaster@pssaonline.co.uk)

**11th Oct '15**  
**King's Lynn Aero Modelling Club 2015 Annual Swap Meet**, at West Winch Village Hall, Watering Lane, West Winch, King's Lynn, Norfolk PE33 0YJ. All manner of aero R/C paraphernalia for sale! Teas, coffee and bacon rolls available. £5.00 per table – bookable in advance. Additional helpers £1.00. Doors open to sellers from 8.30 am, open to public from 9.00 am. Admission £1.00. Booking form, Email: [klamc.2009@btinternet.com](mailto:klamc.2009@btinternet.com) Tel: 01945 582023

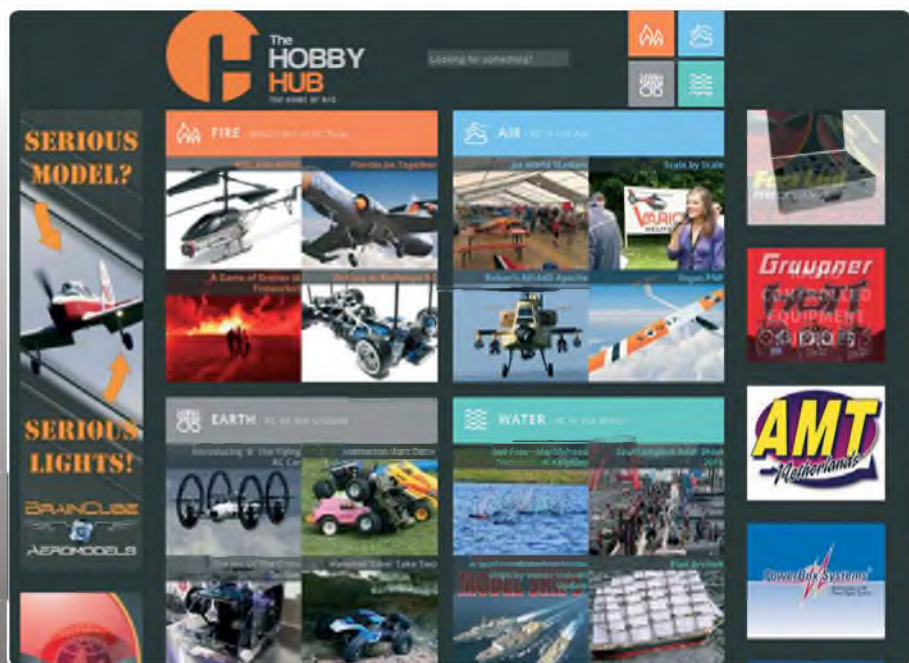
**11th Oct '15**  
**Beverley and District Model Aircraft Club Autumn Swapmeet**, at Tickton Village Hall, near Beverley, HU17 9RZ. 9 am till 12 noon, Entry £1.00, Tables £5.00. Contact Brian Jenkins, Email: [2bee.jays@live.com](mailto:2bee.jays@live.com), 07970 959875 or [www.badmac.btck.co.uk](http://www.badmac.btck.co.uk)

**21st Oct '15**  
**Phoenix MAC NW Area Autumn Swap Meet**, Deanwater Hotel, Woodford, Cheshire SK7 1RJ. (On A5012 Wilmslow to Poynton Road) Bar and seating in swap meet room. Food available. Entry £2, tables £3. Doors open 7.30 pm. Table holders 7 pm. Contact Terry Mason, 07950 052039 or 0161 439 3816. Email: [pmaccheshire@aol.com](mailto:pmaccheshire@aol.com)

**25th Oct '15**  
**LMA Gaydon**, Warwickshire (CV35 0BJ), further details from Paul Needham 07949 214282, Email: [mail@paulneedham.plus.com](mailto:mail@paulneedham.plus.com)

# INTRODUCING THE HOBBY HUB!

Visit Traplet's new modelling website for offers on Traplet products old and new, as well as lots of free digital content



Traplet Publications are proud to announce our new online portal: [www.thehobbyhub.com](http://www.thehobbyhub.com)

It's been designed as a one stop resource for everything that's truly cool in the world of R/C and uses a simple to navigate design that employs the four elements of Earth, Air, Fire and Water. It frankly couldn't be any easier to use!

## Earth

Is for any ground based vehicles, if it's got wheels, tracks or even a skirt (and yes, we mean a hovercraft!) this is the section of the website dedicated to any type of R/C vehicle that runs on, or over terra-firma.

## Air

This element is dedicated to anything that flies. From Jets to Multi-Rotors, and everything in-between. If it takes to the air in any form of flight, it's just a click away.

## Fire

Regardless of its genre, the Fire section showcases what's hot from every aspect of the hobby. If it's innovative or pioneering, ground breaking or revolutionary, or simply creating a frenzy for pre-orders at local hobby stores, the Fire element puts all of these products in one place.

## Water

If it sails, floats, or even skims H2O (at any speed) then the Water element is where you will find it. With the crème of boating articles condensed into this element, it's the ideal place to get all the latest news and product information from the R/C boating world.

## But That's Not All

The Hobby Hub also has its own R/C Guru, an interactive blog allowing Traplet model magazines' readership and Hub visitors to ask technical questions of the Guru, and to get an enlightened answer in return. The Guru is the 'Hive-mind' of all our editors and contributor teams, so expect not only help in solving your problem or answering your R/C question but the occasional additional words of wisdom designed to inspire you into action!

It's a resource designed to complement our existing print and digital magazines and will offer both sneak peeks into future content, as well as abbreviated versions of recent key articles from all our titles.

So don't forget to save [www.thehobbyhub.com](http://www.thehobbyhub.com) in your browser favourites!

RCMW



# Traplet Plans & Parts Service

## Get this winters build sorted today!

With 1000s of models to choose from you will find your next project at the Traplet Plans & Parts Service.

Our Lasercut Woodpacks are only cut once you order them meaning that the wood is as fresh as it can possibly be!

From Electric Scale, Electric Sport, PSS Model Designs, Sport Gliders, Scale Working Boats, Scale Fishing Boats, Scale Tug Boats, Scale Warships, Racing Sailboats and many more.

Save even more on full sets including Plan, Lasercut Woodpack and Accessories.

**Available Now!**  
**The RC Model World Plans & Construction Special**

Packed with over 1100 plans for all types of models, over 500 parts and accessories, plus 200 laser cut wood packs. From simple gliders to sophisticated scale models designed by championship winning modellers, there is something for every skill level.

Ref MWPGD15 **Only £5.99 / \$9.99**



**NOW IN STOCK!**

We now stock Balsa Wood packs. 3 options are available of varying size and thickness's, perfect for those models that need a bit more!



Check out [www.trapletshop.com](http://www.trapletshop.com) and visit the Plans & Parts section for full details, or phone our friendly customer service team on 01684 588599.

Make ordering even easier **PayPal** is now available on [www.trapletshop.com](http://www.trapletshop.com)

TRAPLET  
PUBLICATIONS

World Leaders in Hobby & Leisure Publications, DVDs, Plans & Parts

This month Gray has more on 'tissue over Mylar' coverings, reveals a refurbished Aquila glider and looks at some unusual rotary wing devices



# THE SPORT CHANNEL

Sid King reworked Henry J. Nicholls' incomparable 'Matador' from the early 1950s for electric R/C and tried tissue over Mylar covering for the first time

## This Month's Wise Words

Our continuing coverage (to coin a phrase) of the technique of finishing open model structures with traditional tissue applied over modern Mylar film seems to be encouraging more experimentation. Whilst writing this I've sent off four copies of the downloadable 'how to' article we've been offering (email us for yours).

We've previously mentioned Gloucestershire master modeller, Sid King choosing a mutual favourite kit design, the Mercury 'Matador' of the 1950's as his first tissue/mylar testbed project. Sid now writes:

"The Matador's test flights were successful, so a few notes may be of interest. Liberties taken with the original design: I'm sure designer Henry J. would forgive me! Well, it was originally a free flight model with some semblance of radio control. Basically, in 1957, when I built the first example, if it was making a noise – it was going up. If it wasn't, it was coming down. We must remember that the limited control systems that were available, mostly for home building, weighed around a pound and a half (just to waggle the rudder right or left).

Most of the weight was in the batteries, one 1.5 V 'D' cell, 'Low Tension' to heat the valves, a 45 V supply 'High Tension', comprising 2 x 22.5 V hearing aid batteries, the size of our modern PP3's and 4 x 1.5 V AA cells to power the rubber driven escapement. The two valve Hill receiver was around 4 oz and was suspended on four rubber bands to insulate its delicate relay from engine vibration.

I estimate that my original weighed between 3 and 3½ lb. Even with the massive 4¼ degrees of wing incidence it needed an A.M. 25 to haul it aloft. To

**"EACH WORK IS STARTED FOR A REASON, HENCE IT DESERVES A FINISH..."**  
(UNATTRIBUTED)

modify it to suit today's equipment and control requirements, I have lowered the wing leading edge to give 1½ degrees and replaced the lifting section tailplane with a 1¼" flat-plate unit, plus, of course, rudder and elevators. Even with the ubiquitous 3S 2200 LiPo right under the motor and its massive 30% tailplane area, it still required a disappointing lump of lead at the front. It finally weighed in at 2 lb 2oz.

Structurally, I retained the original material sizes, but the 1/8" square spars and 3/16" longerons were basswood. Power is supplied by a Turnigy D2822, 1450 KV motor driving a 7" x 5" prop. And yes - it will loop and roll.

I managed to find some thin Mylar (ex Flight-Hook) originally intended for wrapping cigarette packets. With no Balsaloc in stock, I used thinned PVA, not very successfully, probably my fault for thinning it. Looking round for a substitute, I used Latex carpet adhesive. A happy choice - just used 'wet', it can be shrunk 15 minutes later.

The shrinking power of Mylar caught me totally by surprise! My sample piece would

have made a fine propeller for an indoor rubber model. Clearly, the fragile tailplane would suffer a similar fate. To counter this I made a 'picture frame' from 1/2" x 1/4" pine slightly under the size of the tail, clamped the tailplane to it and shrank both surfaces using the heat gun, there were no warps, just a little ripple on the actual latexed areas. This was easily removed with the iron. Moving to the wing, the underside was shrunk first, then the wing was weighted down on a flat surface whilst shrinking the upper skin. Again a good result. Plain white Modelspar was doped on in the usual manner.

The finish was 'Authentic' – good old fashioned coloured dope, genuine HMG (from Flair). To get the 'light through the open structure' look, I diluted the yellow dope with clear non-shrink dope, again HMG. This time around I didn't even have to fuel proof it!"

Sid did his usual fine job of building and finishing the Matador and having seen it in action, I can confirm that it really looks the part. We'll bring you a couple of postscripts to this item in a later edition.

## Aquila In Africa

No sooner had we mentioned earlier topics from SC heading back to us, to join up in curious ways, than it happens yet again... From Mike White's adventures in Kenya to the growing interest in the 'Aquila' thermal soarer from the 70s, we hear of another interlinking theme.

From the continent of Africa comes an heroic little tale of our favourite retro glider design. Shaun Milesen writes from South Africa:

*"I want to share a pic of my old faithful Aquila. I was given this glider in the early 90s by a fellow club member; he had picked it up from a deceased estate sale and had no time to restore it as it needed some TLC. I had to fix some structural damage to the wing before recovering it and the fuz needed a revamp as well. All of this at the age of 12! This plane earned me 3rd spot in the Zimbabwe Gliding Nationals in '93 and it moved country with me in 2006 to South Africa, where it sat in a corner till last year when I revamped it again. I had to build new tail surfaces and redo the paint on the fuz."*

*I also had to make a new canopy for it as the old one was yellowed and cracked. As you can see by the pic it came out pretty good. I have flown it again off the slope, as well as the winch. I still love this old girl and would be heartbroken if I were to crash her."*



**Reader Shaun Milesen is a convert to SC's favourite 1970s thermal soarer. He acquired this Aquila in the 1990s at the age of twelve and it's travelled with him from Zimbabwe to South Africa as his comp and sport glider. The oldest Aquila around?**

What an inspiring story, Shaun – it must have been a formative modelling experience to own a performance ship like the Aquila at the age of twelve. It sounds like it's given reliable service over the years. I wonder if it's among the longest-lived Aquilas?

Shaun mentions that he's a keen scratch-builder and designer, so we're in the process of persuading him to share some of his O/D work.

Drop me an email at the address at the end of this column if you want to discuss downloads of the Aquila and Aquila Grande plans.

## Freunde In Hohen Plätzen...

The last time we caught up with our intrepid German pal Horst Fenchel was last year when we brought you some highlights of his trip to the USA, during which, in characteristic style, he made New York City and San Diego his home-from-home flying sites.

In his ongoing quest to find ever more unlikely venues from which to fly and make his world-renowned onboard videos, Horst has been experimenting with one of his most precarious launching platforms yet in his home town of Marburg.

Horst obtained permission to fly from a tiny window high on the spire of one of

Marburg's magnificent mediaeval churches. I'm still not sure how he managed to squeeze himself and his camera plane through the window, but somehow he took some dizzying 'selfies' and then launched his GoPro equipped foamie off on a videoing mission over the famous university town.

'Landing', as usual, was a hand catch. Not a problem to a flyer of Horst's experience, as he's flown successfully from hot air balloons and cross-Channel ferries!

I don't know if the footage of Marburg has yet appeared in a posting, but just have a look at the Vimeo and 'RC Movie' sites, search for 'Crazy Horst' and check out the

man's work. As it's part of our remit to promote good Health and Safety practice, we should point out that Horst has special training in dangerous environments and is utterly fearless, so please don't attempt to emulate his antics when you look for a flying site.

And a quick update. This year, Horst and partner Fay have set up home in a stylish neighbourhood high on one of those hills in the background. Not only is there a handy slope site on the doorstep, Horst can actually launch gliders and electrics directly off his balcony. What must the neighbours think?

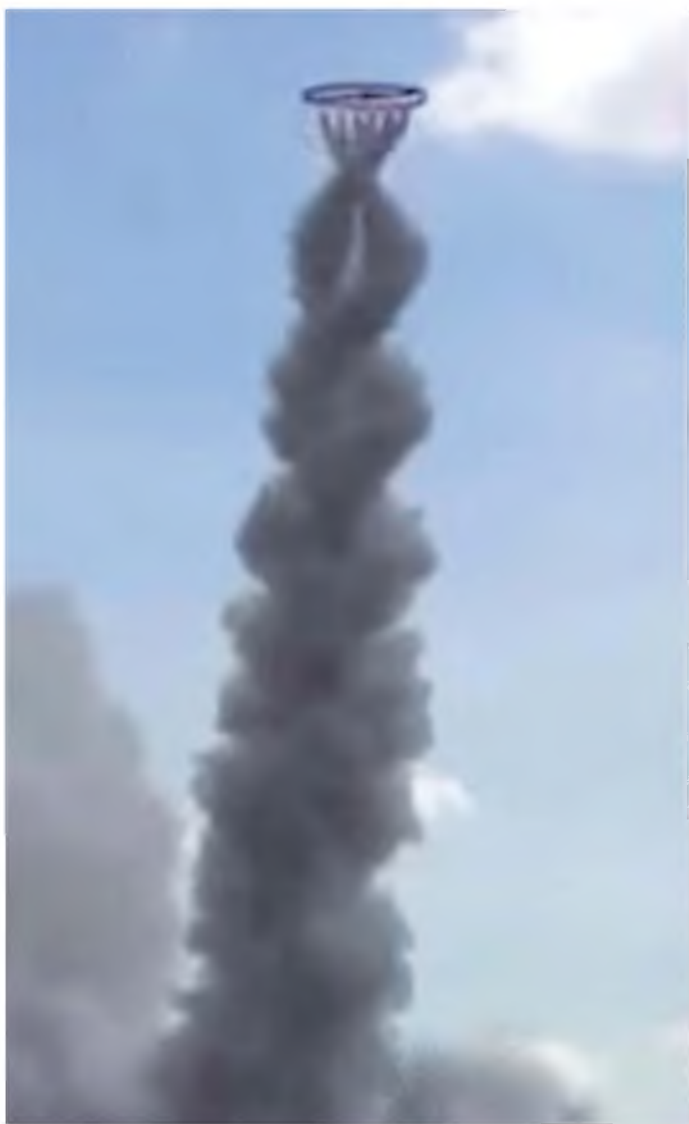


**Horst Fenchel nonchalantly grabs a 'selfie' at his most precarious launch-site yet – a church tower in his home town Marburg**



**Model's-eye view of the 'landing approach'; Horst catches it (and, of course, gets it right first time!). Naturally, don't try this at home...**

**Right:** A 'Things to Come' glimpse of a fearsome, futuristic anti-aircraft device, published at the end of WW1 in 'Electrical Experimenter' mag. Configured like an ancient 'Bolas' weapon, but with rocket power. Other inventions based on the principle existed much later. Does any reader have any further information on this one?



A national sport and outrageous public spectacle – 'Bamboo Rocket' festivals in Thailand attract builders of giant DIY rocket craft like this huge rotating wheel. See text

#### A Different Spin...

Finally, for no logical reason, three loosely connected items relating to odder forms of rotary-wing flight have arrived in quick succession. The first, from my long-time modelling pal, Jack Sidebotham in Chepstow, Gwent.

We've featured the 'Monocopter' a couple of times over the years. The principle is simple – a single rotor blade is dragged around in crazed rotary motion by a suitable power source out on a boom. The engine is counterbalanced by a weight on a cross-boom and the blade is stabilised by a rudimentary 'tailplane' set atop fins near the tip. In model form the monocopter dates from the 1950s as the 'McCutcheon Flying Machine' and 'Charybdis', though as we once described, a full size, man-carrying version existed decades before. More on that later.

Jack recalled sessions flying my Cox .020 'Chip-Chopper' back in the 1970s, which were hysterical – memories of them are undimmed today. Jack recently tried

to describe the monocopter to some clubmates, but they couldn't believe that it could fly!

Monocopters now enjoy renewed interest online. A quick trawl will yield variations, large and small, with power now including electric and rockets and including some clever R/C drone adaptations. Visit YouTube and search for 'Model Monocopters'.

Next in was from my old colleague, Murray Crannitch, from Christchurch, New Zealand. Murray first told me of a cultural phenomenon seen on family visits to Thailand. 'Bamboo Rocket Festivals' are held throughout the country and provide spectacular if traumatic entertainment. Amateur rocketeers fly incredible homebuilt craft, using mostly basic, natural materials (hence the name). Huge rockets up to 30 ft long are blasted aloft from bamboo launch gantries and, it seems, are judged for ingenuity and crowd appeal.

A favourite class is the wheel/helicopter vehicle, again of vast proportions, which thunders skywards leaving a dense

corkscrew exhaust trail. It seems that there have been safety 'issues' in the sport, but it continues to wow the crowds, having pre-dated aviation and space flight by centuries!

Finally, an astoundingly modern looking anti-aircraft weapon conceived at the end of WW1. On the cover of 'Electrical Experimenter' for September 1918 is a fearsome looking craft with rocket-powered explosive nacelles spinning on cables around a central pod, ripping fighters to shreds. Sadly, I have no further information on this device, just the mag cover. But, with equal measures of family pride and name-dropping, I must thank my talented nephew, the respected film critic and author Neil Mitchell for providing this pic.

Contributions, please to The Sport Channel c/o the Traplet Publications address. All email correspondence to: grayrcmag@hotmail.com

**RCMW**



A nostalgic study from the album. Who's tried a monocopter then? These rudimentary free flight helicopters, powered by small glows and today, electric motors, look and sound weird and are unbeatable fun. Concept has a long and surprising history

# WEB DIRECTORY

 **fighteraces** Warbird kits, CJM retracts, Warbird colors paint, Zenoah, Menz, ZAP adhesives, building & finishing materials, spraying equipment..... + much more

Phone +44 (0) 191 410 9523  
Email - [phl@fighteraces.co.uk](mailto:phl@fighteraces.co.uk)  
**www.fighteraces.co.uk**

**3d hobby shop**  
FLY THE BEST  
**GASHANGER.COM**  
APPROVED SALES & SERVICE CENTRE FOR **DLE**

**www.Mikes-Models.co.uk**  
The Midlands No.1 Model Shop  
Tel: 0121 360 4521

PLANS AND PLAN PACKS AVAILABLE DIRECT FROM  
**TONY NIJHUIS** designs  
**www.tonymijhuisdesigns.co.uk**

**PROGRESS AEROWORKS - PAW DIESELS!**  
**www.paw.ac**  
paul@paw.ac  
ENGINES - SPARES - SERVICE - STAYSTRATE C/L WIRE

Tel/Fax: 01625 423891  
Union Mill, Union St.,  
Macclesfield SK11 6QG  
Visa Mastercard Switch Solo

**Just ENGINES**  
"we're serious about engines"  
ASP JEN NGH OS IRVINE  
Spares and service RCXEL ignitions BCM mufflers  
Plugs Propellers spinners starting gear  
Custom exhausts and so much more  
**01747 835817**  
**www.justengines.co.uk**

**tjdmodels** Secure online shopping  
01322 865111  
**www.tjdmodels.com**

**ModelFixings.co.uk**  
also the home of **ModelBearings.co.uk**

- Taps, Dies & Drills
- Adhesives
- Miniature bearings,
- Circlips, etc. etc.

Tel/Fax +44 (0)115 854 8791 Email: [info@modelfixings.com](mailto:info@modelfixings.com)

**www.mantuaamodel.co.uk** **ops**  
179 Dedworth Road Windsor Berks SL4 4JN Tel: 01753 856321  
For all your modelling needs.

Metric and imperial Balsa, Plywood and Spruce. Radio Control - Accessories - Adhesives - Finishing Materials - Modellers Tools - OPS engines and spares  
Distributor for Mantua Model of Italy - Mantua & Aviomodelli kits fast mail order service

**BOCA BEARING**  
[www.bocabearings.com](http://www.bocabearings.com)  
info@bocabearings.com

**airtek** hobbies  
Lots of unusual items for the R/C enthusiast!  
**www.airtekhobbies.com**

**West London Models**  
**Hacker** **Thunder** **Power** **RC**  
Secure online shopping for All your modelling needs.  
**www.westlondonmodels.com** Tel: 020 8897 2326

**www.phoenixmp.com**  
The On-Line shop of Phoenix Model Products  
Famous for: • EPP kits • Realistic Prices  
• Excellent Service and Sound Advice  
e-mail: [sales@phoenixmp.com](mailto:sales@phoenixmp.com) Tel: 01626 332287

**Pegasus Models**  
Your Favourite Model Shop, Online  
NEW larger shop premises and improved website !!  
**www.pegasusmodels.co.uk** Tel. 01603 419515

**www.rcmodelworld.com**  
"see the NEW web site for this magazine"

To Advertise in this space  
phone Mel on  
**01684 588510**

**TO ADVERTISE HERE PLEASE CONTACT MEL ON**

**01684 588510**  **melanie.penkoks@traplet.com**

# WEB DIRECTORY

**electricwingman**  
www.electricwingman.com  
quality at great prices

**PROPGUY**  
Specialising in World Class Model Propellers at the best prices  
FALCON props and spinners EME petrol engines and Danhaki fuel & smoke tanks  
PRECISION • DEPENDABILITY • QUALITY • PERFORMANCE  
07949-274274 website - www.propguy.co.uk

**THE SONATA IS BACK**  
SONATA  
3 in 1 Kit. Can be Electric, Thermal or as a Slope Soarer. Modern electronics can be fitted without enlarging the fuselage from the original design. PRICE £59.99

**THE BALSACABIN**  
INDEPENDENT BALSA SPECIALISTS  
We Take Orders Over The Phone, Email and Through Our Website.  
Balsa Wood, Plywood, Accessories, All Types of Coverings, Batteries, SC Engines and many more items.  
Call For a Free Catalogue Tel: 01621 859711,  
balsacabin@hotmail.com, www.balsacabin.co.uk

www.wingsnwheels.net  
30th Anniversary!  
June 25th & 26th, 2016  
01242 6041256



**www.rcmodelworld.com**  
"see the NEW web site for this magazine"

www.modelheliworld.com  
**Helicopter**  
LOG ON FOR GREAT SUBSCRIPTION RATES

## Trapletshop.com

Supporting modellers for over 30 years

With 1000's of plans, woodkits, accessories, DVD's, books and more www.trapletshop.com is the one stop shop for all modellers from the beginner to the advanced.



### DH98 MOSQUITO PR.XVI (81")

Plan £25.99  
Woodpack £93.99  
Full Kit & accessories £211.64




### AVRO VULCAN B2 ABS SET

Plan £22.99  
Woodpack £119.99  
Full kit & accessories £160.97

See all our full range at [www.trapletshop.com](http://www.trapletshop.com)  
or call our friendly customer service team on UK 01684 588599

 Traplet Publications

**MODEL  
WORLD**

 @ Traplet

# CLASSIFIEDS

## Private For Sale Advertisements FREE.

Trade Advertisements Semi Display £12 per column centimetre plus VAT. Min. 2 cm, max 7 cm or £15 per column centimetre plus VAT colour.

Send your advertisements to:

R/C Model World Magazine, Traplet House, Willow End Park, Blackmore Park Road, Malvern, Worcestershire WR13 6NN. ☎01684 588510 or @advertising@traplet.com

We will print your prepaid classified advertisement in the next available issue of R/C Model World. Classified adverts received after copy date may be held over the following issue. We advise you to type or print clearly (capital letters preferred) the text of your advert on the coupon provided and clearly indicate whether the goods referred to are 'wanted' or 'for sale'. No responsibility will be accepted for misprints. Trade Description Act. Attention should be paid to the requirements of the Act when giving detailed descriptions of all goods offered for sale. The Business Advertisements (Disclosures) Order 1977 requires that persons attempting to sell goods in the course of business must make that fact clear. Consumers should know whether an advert relates to a sale by a trader or private seller.

## FOR SALE

### CHRIS FOSS designs

STYLE • PERFORMANCE • QUALITY  
DESIGNER AND MANUFACTURER OF TRADITIONAL  
R/C AIRCRAFT CONSTRUCTIONAL KITS SINCE 1976  
FOR THOSE WHO LIKE TO BUILD AND FLY

MIDDLE PHASE Versatile slope soaker trainer  
PHASE 6 Advanced fully aerobatic slope soaker  
UNO-WOT Basic power trainer/sport aerobatic model  
WOT-4 Amazing aerobatic trainer/stunt model  
ACRO-WOT Stylish fully aerobatic low winger  
WOTS-WOT Realistic yet highly aerobatic bi-plane  
XTRA WOT 25% enlarged & restyled Aero Wot  
ALPHA WING flexible composite undercarriages &  
GRP wheel spats.

Chris Foss Designs, Unit 1, Freehold Street, Shoreham,  
W. Sussex. BN43 5TQ. Tel/Fax: 01273 452642.  
www.chrisfoss.co.uk

TRADE AND EXPORT ENQUIRIES WELCOME

## FOR SALE

### D.B. SPORT & SCALE

Quality traditional builders kits.  
Auster, Piper Cub, Hurricane,  
SE5, Autogyro, Spitfire, and more,  
also Plan packs and materials.

www.dbsportandscale.com  
Tel/fax 01792 897501  
Major Credit cards accepted

## FLIGHT TRAINING

### Midlands Flight Training

Radio Control Training Specialists  
For Over 30 Years

Fixed wing training in a friendly, relaxed  
atmosphere at one of our private flying sites,  
based in Northamptonshire. All levels of skill  
and aircraft types including jet turbines catered  
for.

- Basic Flight Training course provided on  
school's dual controlled aircraft.
- Coaching to BMFA Achievement Scheme "A"  
and "B" level with qualified instructors.
- Take your "A" and "B" test with our BMFA  
Examiners.
- Special Advanced Flight Training with Former  
Multi-National Aerobatics Champion. All flying  
styles and aircraft types undertaken.
- Professional setting up and test flying service  
for all types.

Contact Midlands Flight Training now  
T 07711 963939  
E Colin.chapman19@btopenworld.com

## Trade Advertisements Semi Display

Mono £12 per column cm  
Colour £15 per column cm  
plus VAT.

Min 2cm, max 7cm

01684 588510

advertising@traplet.com

## Perma-Grit Tools



Tungsten Carbide Abrasives

Order on-line

www.permagrit.com

or Tel: 01529 455034

Tools despatched same day

## PRIVATE FOR SALE

**SELLING** up, SE5A, Cularis, Mirage, Futaba T10CP Tx, as new, flight box with starter, etc., electric motors, various props, many accessories. For free typed list, call Laurence 01372 373354, Surrey.

**E-FLITE** Super Cub, 68" span with servos installed, new condition, £140. Morse Scout, USA WWI electric biplane, 48" span, complete, just add receiver, £60. Call Peter 01970 832205, Ceredigion.

**SUPER** Tigre G4500 x 2, both are unrun and NIB, including mount and manifold adapter, these sought-after collectors items are available at £270 each plus p&p. 01279 850421, Essex.

**SAIA** Marchetti SF260, 42" wingspan, traditional build from Jamara plan pack, fitted with retracts, has wing tanks, 300 watt brushless outrunner, ESC, finished in red/white spray finish, ready to fly, lovely looking model, bargain at £185, cost to build £268, offers considered. Call Colin 01553 630506, anytime, Norfolk.

## PRIVATE FOR SALE

85 years old gentleman, selling up lots of stuff, engines, glow, diesel, transmitters, receivers, 2 Agastien Spitfires, 2 Cubs, 1 Tiger Moth, Irvine trainer, lots of spares, would like to sell as one lot. Futaba control. Call 01707 390479, Herts.

**FOR** sale all models and motors have to go, five transmitters and radio gear to go, 15 models, most not flown, radio all new, 2.4 g, giving up, 82 years old. 01767 314969, Beds.

**B.U.** kit, 85" Topflight Mustang, MVVS 40 cc, all servos, Sierra retracts, weight 19 lb, club field too rough and too small for heavy models, lovely to fly, £800 ono, undamaged. 01522 595145, Lincs.

**DJ1** Phantom and six batteries, little use, plus charger. 07827 683872, Lincs.

**SE5A** 53" span, 1/6 scale, Duncan Hutson kit, complete and untouched, £190. 01263 587345, Norfolk.

## PRIVATE FOR SALE

**85** inch P51 Top Flight Mustang, traditionally built, two piece wing, weight 19 lb, Sierra retracts and air system, all servos, 40 cc MVVS petrol engine, no damage, £800 ono. 01522 595145, Lincolnshire.

**BABY** Boomerang jet with Wren 54 Springair retracts, all servos, good condition, just add receiver and fly, ideal for first jet, breaks down into small parts, £1,200 ono. 07730 386387, Kent.

**UNTOUCHED** kits, Flair Attila, 46" span, £35. Ben Buckle Mini-Super, 48" span, £35. Great Planes Electro Streak, ARF, motor, glider, 44" span, fibreglass fuselage inc. motor, prop and ESC, £45. Call Ian 01747 823168, Dorset.

**DH98** Mosquito plans RCM&E, No. RC2084, also CNC wood pack and std wood pack, canopy moulding, all untouched, beyond my skills, £75 ono. 07717 154232, Suffolk.

**1/3 S1** Mike Smart Pitts Special, £250. 1/3 S2 Great Planes Pitts Special, £250. Yellow 101" AT6 and motor, £750. Zirolu Ju87 and motor, 110", £750. Topflite P51, 85" and motor, £450. Call 07477 532752.

**JETCAT** P60 turbine, had approx. 2 hours use and in perfect working order, £800. 07453 271868, Dorset.

## PRIVATE FOR SALE

**HAWKER** Sea Fury 48" span model, design scale kit, CNC pre-cut parts and cowl, canopy mouldings, complete and untouched, £120. 01263 587345, Norfolk.

**ACTING** for a man who isn't very well, he has a large number of flying models and parts, ZP Platinum 38 cc engine, still boxed. Jet Gnat RXi, still in box, untouched. Pre assembled large scale Spitfire E, Hawk trainer (large), Pawnee D (large scale), Stratos Firebird, Raptor helicopter (electric). Also a micro milling machine, mini capstan lathe and electric fretsaw, there are other items too many to list. Contact me, Ted on cathnted2@gmail.com  
**QUIET** and Electric Flight, first 69 issues, 2002 to 2007, free to collector. Elliott 01625 524572, Cheshire.

## WANTED

**ANY** made or unmade plastic model kits wanted, Tamiya, Airfix, Revell, etc. Also aviation and military books, diecast models, etc. Write 27A The Grove, Biggin Hill, Kent. TN16 3TA.

**WANTED** OS Wankel engine, would consider non runner. Peter 07754 669607, Essex.

# CLASSIFIEDS

## Trade Advertisements Semi Display

Mono £12 per column cm. Colour £15 per column cm plus VAT.

Min 2cm, max 7cm

Telephone: 01684 588510 or email: advertising@traplet.com

# **ADVERTISE FREE**

IN UP TO 3 OF OUR FLYING TITLES  
PRIVATE FOR SALE/WANTED CLASSIFIED ADVERTS ONLY

<b>RC MODEL WORLD</b> <input type="checkbox"/>	<b>Radio Electric Flight</b> <input type="checkbox"/>
<b>MODEL Helicopter</b> <input type="checkbox"/>	<b>Jet</b> <input type="checkbox"/>

Use this coupon for FREE private classified ads.  
Free ads are ONLY accepted on a coupon, by post,  
fax or email.

**TICK THREE BOXES ONLY**

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

COUNTY

## SEND US YOUR FREE ADS NOW!

PLEASE ENSURE YOUR NAME AND ADDRESS IS INCLUDED FOR RECORD PURPOSES. ANY INFORMATION GIVEN BELOW WILL NOT APPEAR IN YOUR ADVERT

Name..... Address.....

Postcode..... Tel. No.....

Send to: RC Model World, Traplet Publications, Traplet House, Willow End Park, Blackmore Park Road, Malvern, Worcestershire, WR13 6NN.

Fax no. +44 (0)1684 578558 Email: adcopy@traplet.com

If you do not wish to receive  
future mail shots please  
tick this box ☐

IF YOU DON'T WANT TO SPOIL YOUR MAGAZINE JUST PHOTOCOPY THIS FORM.

We will print your classified advertisement in the next available issue of RC Model World. Classified adverts received after the copy date may be held over for the following issue.  
We advise you to print clearly (capital letters) the text of your advert and indicate, which section you would like your advert to appear in. No responsibility will be accepted for misprints or printing errors.

## NEWSAGENT ORDER FORM • NEWSAGENT ORDER FORM • NEWSAGENT ORDER FORM • NEWSAGENT ORDER FORM

*Having difficulty obtaining your copy?*

**RC  
MODEL  
WORLD**

**RADIO CONTROL MODEL WORLD**

*Then place an order with  
your newsagent!*

All Traplet Publications Limited magazines  
are available from all good newsagents either  
as a stock item or via the ordering service.



Name.....

Address.....

Post Code .....

### DISTRIBUTED TO THE NEWS TRADE BY

Seymour Distribution Limited, 2 East Poultry Avenue,  
London, EC1A 9PT, England.  
Tel: +44 (0)20 7429 4000 Fax: +44 (0)20 7429 3628

### DISTRIBUTED TO THE HOBBY TRADE BY

Traplet Publications Ltd., Traplet House, Willow End Park, Blackmore  
Park Road, Malvern, Worcestershire, WR13 6NN, England.  
Tel: +44 (0)1684 588500 Fax: +44 (0)1684 578558  
Email: general@traplet.com

### DISTRIBUTED TO THE NORTH AMERICAN HOBBY TRADE BY

Traplet Distribution USA Ltd., 816 Country Fair Drive, Suite 5.  
Champaign, IL 61821, USA  
Tel: 217 355 2970 Fax: 217 954 0472  
Email: usa@traplet.com

**ON SALE THE SECOND THURSDAY  
OF EVERY MONTH**

# SHOPPER'S DIRECTORY

**To advertise in the RCMW Shopper's Directory**

Call Traplet ☎ 01684 588510 ☎ 01684 578558 or email: [advertising@traplet.com](mailto:advertising@traplet.com)

📖 Indicates retailers who stock RC Model World. Are you missing out on extra sales?

## ENGLAND, CHESHIRE

### STEVE WEBB MODELS

**Tel. 01928 735225**

80 Church Street, Frodsham, Cheshire.  
WA6 6QU  
sales@servoshop.co.uk  
www.servoshop.co.uk  
Mon-Tues, Thurs, Fri, Sat 9.30-5.30  
Closed Wed & Sun.  
Most major credit cards

## DEVON

### TOTEM HOBBIES

**Tel. 01752 268122**

Totem Timber Ltd, T/A Totem Hobbies, St John's Road, Cattedown, Plymouth, PL4 0PA  
www.totemhobbies.co.uk  
hobbies@totemtimber.co.uk  
Open 9.00am-5.00pm Monday-Saturday,  
Closed Sunday  
Accept all major credit cards

### RC EVERYTHING

**Tel. 01752 249612**

90 Wilton Street, Plymouth, PL1 5LT  
rceverything@hotmail.com  
www.rceverything.com  
Tues-Fri 10am-6pm, Sat 10am-5pm  
Most major credit cards  
+ paypal

## ESSEX

### ACTIVE SCALE MODELS

**Tel. 01702 202155**

Unit 22, The Foundry Business Park,  
Hockley, Essex. SS5 4HS  
sales@activescalemodels.co.uk  
www.activescalemodels.co.uk  
All major credit cards + Paypal + BACS  
Mail Order

## GLOUCESTERSHIRE

### C J MODELS

**Tel. 01452 308007**

121 Barton St., Gloucester. GL1 4HR  
Open Mon-Tues, Thurs-Fri: 10am-  
5.30pm, Wed: 2.30pm-5.30pm,  
Sat: 10am-5pm.

**PLEASE MENTION**

**MODEL  
WORLD**

**WHEN REPLYING  
TO THESE ADVERTS**

**PLEASE MENTION**

**MODEL  
WORLD**

**WHEN REPLYING  
TO THESE ADVERTS**

## HAMPSHIRE

### MAINLY PLANES N TRAINS

**Tel. 02392 581402**

79 Stoke Road, Gosport, Hampshire.  
PO12 1LR  
Mon-Sat 9.00-5.00  
www.mainlyplanesntrains.com  
enquiries@mainlyplanesntrains.com  
All cards accepted (apart from AMEX)

**PLEASE MENTION**

**MODEL  
WORLD**

**WHEN REPLYING  
TO THESE ADVERTS**

## KENT

### ASHFORD MODEL SUPPLY CENTRE

**Tel: 01233 635837  
Fax: 01233 639761**

Unit 23, Ellingham Way, Ellingham Ind.  
Estate, Ashford, TN23 6NF  
Email: admin@kalmsservices.com  
Open Mon, Tues, Thurs, Fri. 10-4  
Sat 10-3, Closed Weds & Sun

### AVICRAFT LTD.

**Tel. 0208 460 0818**

www.avicraft.co.uk  
15 Chatterton Road, Bromley, BR2 9QW  
Mon-Sat: 10am-6pm, Closed: Wed,  
late night, Thurs: 9pm  
Email: avicraft@yahoo.co.uk  
Easy Parking  
Mastercard Switch Visa Mail Order

### TJD MODELS

**Tel. 01322 865111**

83 Main Road, Sutton At Hone,  
Dartford. DA4 9HQ  
Mon-Fri: 9am-5.30pm, Thurs: 9am-8pm,  
9am-5pm Sat, 10am-4pm Sun.  
sales@tjdmodels.com www.tjdmodels.com  
We accept all major credit cards Mail Order

## LEICESTERSHIRE

### STEVES MODELS

**Tel/Fax. 01530 416827**

Bullens Courtyard, Mill Lane Mews,  
Ashby-de-la-Zouch. LE65 1HP  
Mon-Sat: 9.30am-5pm,  
Wed: Closed  
Mastercard Visa Mail Order

**PLEASE MENTION**

**MODEL  
WORLD**

**WHEN REPLYING  
TO THESE ADVERTS**

## LINCOLNSHIRE

### MASONS MODELS

**Tel. 01775 722456**

20 New Road, Spalding, Lincs.  
PE11 1DQ  
Open Mon-Fri: 9am-5pm,  
Sat: 9am-4.30pm, Closed: Thurs. & Sun.  
www.masonsmodels.co.uk  
All major credit cards Mail Order

**PLEASE MENTION**

**MODEL  
WORLD**

**WHEN REPLYING  
TO THESE ADVERTS**

**PLEASE MENTION**

**MODEL  
WORLD**

**WHEN REPLYING  
TO THESE ADVERTS**

## NORFOLK

### ANGLIA MODEL CENTRE

**Tel. 01493 664815  
Fax. 01493 658005**

Unit 4 Riverside Ind. Estate. NR31 6PU  
Open Mon-Sat: 9am-5pm.  
www.modelshops.uk.com  
All major credit cards accepted  
Mail Order

**PLEASE MENTION**

**MODEL  
WORLD**

**WHEN REPLYING  
TO THESE ADVERTS**

## NOTTINGHAMSHIRE

### GEE DEE MODELS & HOBBIES LTD

**Tel. 0115 9412211  
Fax. 0115 9417717**

21 Heathcote St, off Goosegate,  
Nottingham.  
Open: 9.30am-5.30pm Mon-Sat  
hobbies@geedee-modelshop.com  
www.geedee-modelshop.com  
Mastercard Visa Mail Order

**RcBazaar**  
India's Coolest Hobby Super Store

### BANGALORE

RcBazaar  
1193, 26th Main  
Jayanagar 9th Block  
Bangalore 560069  
Karnataka, India  
Tel: (+91) 80 41738892

### PUNE

RcBazaar  
Shriram Yashoda Building  
Baner Road,  
Baner-balewadi Phata  
Pune-45  
Tel: (+91) 020 65006575

**www.rcbazaar.com**

RCBazaar is a proud stockist of Traplet Magazines and associated products.

TRAPLET  
PUBLICATIONS

World Leaders in Craft and Hobby Magazines,  
Books, DVDs, Plans and Parts

# SHOPPER'S DIRECTORY

**To advertise in the RCMW Shopper's Directory**

Call Traplet ☎ 01684 588510 ☎ 01684 578558 or email: [advertising@traplet.com](mailto:advertising@traplet.com)

📖 Indicates retailers who stock RC Model World. Are you missing out on extra sales?

**PLEASE MENTION  
RC  
MODEL  
WORLD  
WHEN REPLYING  
TO THESE ADVERTS**

## SURREY

### ADDLESTONE MODELS

Tel. 01932 845440  
Fax. 0870 706 4463

130 Station Road, Addlestone, Surrey.  
KT15 2BE  
Open 7 days: 9.30am-5.30pm, Sun: 11am-2pm.  
[sales@addlestone-models.co.uk](mailto:sales@addlestone-models.co.uk)  
[www.addlestone-models.co.uk](http://www.addlestone-models.co.uk)  
All major credit cards accepted Mail Order

## SURREY

### MICK CHARLES MODELS

Tel. 020 8393 3232

192-194 Kingston Road, Ewell.  
Mon-Sat: 9.30am-5.30pm,  
Closed All Day: Weds,  
Late Night Thurs: 9.30am-7pm  
[info@mickcharlesmodels.co.uk](mailto:info@mickcharlesmodels.co.uk)  
[www.mickcharlesmodels.co.uk](http://www.mickcharlesmodels.co.uk)  
Mastercard Switch Visa Mail Order

**PLEASE MENTION  
RC  
MODEL  
WORLD  
WHEN REPLYING  
TO THESE ADVERTS**

## EAST SUSSEX

### THE HOBBY BOX

Tel. 01825 765296

121 High Street, Uckfield,  
East Sussex. TN22 1RN  
Closed Sunday and Monday, Tues-Fri  
10am-5.30pm, Saturday  
9.30am-5.00pm  
[www.thehobbybox.co.uk](http://www.thehobbybox.co.uk) Mail Order

## WEST MIDLANDS

### PENN MODELS

Tel. 01384 400085

134 Moss Grove, Kingswinford. DY6 9ES  
Open Mon-Fri: 9.30am-5pm,  
Sat: 9am-5.30pm. Free car parking  
Email: [pennmodels@btconnect.com](mailto:pennmodels@btconnect.com)  
'New Website Coming Soon'  
Mastercard Visa Mail Order

**PLEASE MENTION  
RC  
MODEL  
WORLD  
WHEN REPLYING  
TO THESE ADVERTS**

**PLEASE MENTION  
RC  
MODEL  
WORLD  
WHEN REPLYING  
TO THESE ADVERTS**

# WANT TO STAND OUT FROM THE CROWD?

**ADVERTISE HERE**

Call: Melanie Penkoks

+44 (0) 1684 588510

E-mail: [melanie.penkoks@traplet.com](mailto:melanie.penkoks@traplet.com)



# NEXT ISSUE

## GOLD FEVER



Next month's feature plan is Gold Fever, a semi-scale Formula 1 air racer that delivers sparkling performance in return for a quick and easy build. Make space on your building board for this cutie from Peter Miller

## RED BARON GOES INDOOR



Donatas Pauzuolis is a regular visitor to the Dortmund Intermodellbau expo in Germany, where the indoor flying displays attract some of Europe's top indoor pilots to show off their skills – and some impressively large models! This year Donatas interviewed Jürgen Schönle from Germany about his fabulous Depron Fokker DR1, built to 50% scale. Truly awesome!

## NOVEMBER 2015 ISSUE ON SALE THURSDAY 15TH OCTOBER

## FABULOUS FOKKER FINALE



In the fourth and final instalment of his Scale Model Building For Fun series, Peter Maw concludes his build of a Fokker D.VIII from the Traplet Plan MW3599. Wake up and smell the balsa dust!

## PLUS...

More features, columns and reviews from across the complete spectrum of the R/C model-flying hobby

All contents are subject to change without notice

## THE NOVEMBER ISSUE WILL BE ON SALE THURSDAY, OCTOBER 15TH, 2015

Order your copy TODAY from your newsagent or model shop. Alternatively, check out the Subscription Offers in this issue and be among the first to take advantage of our FREE classified advertisement service

## Advertisers Index

Airtek Hobbies	89	Horizon Hobbies	2, 14, 50,	Ripmax	124	TPL Digital	101
Al's Hobbies	10-11		65	Sarik Vacform	64	TPL Plans & Parts	107-109
BMFA	76	Inwood Models	101	Solarfilm	76	TPL Products	92, 112
Boca Bearing	101	J. Perkins	123	Stoney CNC	97	Web Directory	116-117
Braincube	97	Macgregor	7	Subscriptions	32-33	Weston In The Park	101
CML Distribution	3	NI Models	89	Surrey Models	15	Weston UK	27
Electric Wingman	71	Optifuel	97	Sussex Model Centre	64	Zap Glues	81
Hacker Models	81	Pegasus Models	57	Tony Nijhuis Designs	51		

# HITEC FLASH8

## Trust evolution

The new Hitec Flash 8 has intuitive, logical programming with push button plus jog dial controls together with a large, clear back-lit LCD. Precision engineered, ball raced stick units provide perfect feel with high quality user-assignable switches for incredible control flexibility. Triple 2.4GHz protocols ensure the Flash 8 is fully compatible with previous and current Hitec air receivers and it is telemetry enabled straight out of the box.

The legendary Hitec reliability comes as standard. Of course.

### Features:

- AFHSS 2.4GHz / SLT
- Smooth & precise 4096 resolution
- Aero, glider & heli programming
- 30 model memory
- 10 character model naming
- Large, back-lit LCD screen
- Five 3-position, two 2-position switches and dual sliders for the ultimate in control



Hitec Flash 8  
with Optima 9  
telemetry enabled  
receiver: £229.99SRP



8 channel  
computer  
radio system  
for aero,  
glider and heli  
applications.



Conveniently  
located  
auxiliary  
sliders left  
and right.



Large,  
back-lit  
LCD makes  
programming  
simple.

Available from all good model shops. Distributed throughout the UK and Ireland by:  
J Perkins Distribution Ltd, Lenham, Kent, ME17 2DL.  
[www.jperkins.com](http://www.jperkins.com) | [www.facebook.com/goJPModels](http://www.facebook.com/goJPModels)

**HITEC** **AFHSS** **2.4GHz** ADAPTIVE  
FREQUENCY HOPPING  
Pilot-speak for Peace of Mind

# Futaba

# T18SZ

18-Channel Digital Proportional R/C System



For many years Futaba have led the way with the ultimate in radio systems, and they have done it again with their new T18SZ.

Packed full of possibilities, the T18SZ includes a Li-Fe battery for extended run times, S-FHSS, T-FHSS, FASST and FASSTest transmission systems, 4.3" colour ultra quick response touch screen, flight conditions, a massive range of mixing and programming options for Aircraft, Gliders, Helicopters and Multicopters, Telemetry, Data Logging, etc, not to mention full 18 channel operation.

Supplied complete with the 8/18 channel R7008SB receiver, the T18SZ is the perfect radio for any serious pilot, and of course the regular software updates provided by Futaba will keep this superb radio up to date. More information available at [www.ripmax.com](http://www.ripmax.com)



**S.BUS 2**



Distributed to all good model shops by:  
Ripmax Ltd., Green Street, Enfield, EN3 7SJ.

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