

# FREE FLIGHT

## News

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### FFn DIARY

February 12-13	BMFA Trimming Weekend. See FFn 1012 Must call Peter Tribe on Friday before 01225 862748.	March 12-13	Holiday on Ice. F1A, F1B, F1C, F1Q World Cup event. Contact: Tor Bortne, Jernbanev 28, 2840 Reinsvoll, Norway, tel: +47 611 97 463 or +47 920 95 329, fax: +47 611 52 606, email: tobortne@bnet.no http://frifluktvegar.no
February 12-14	Anselmo Zeri Memorial Dutch World Cup. F1A, F1B, F1C, F1E, F1P, F1Q World Cup event. Contact: Pim Ruyter, Kantemarsweg 36, Hoevelaken 3871 AP, Netherlands, tel: +31 33 25 81 459, e: pim.ruyter@planet.nl	March 12-13	BMFA Salisbury Plain. See Feb 12-13.
February 14	Chobham tree chop. Meet at Staple Hill car park at 10am. (NB Monday). <i>Extra date, replacing washed out January date.</i>	March 15-16	Matfors VT International. F1A, F1B, F1C World Cup event. Contact: Mikael Holmbom, Österlo 140, 86013 Stöde, Sweden, tel: +46 76 116 91 33, e: mikael.holmbom@matforsmfk.se, web: http://www.matforsmfk.se/matforsvt
February 15-21	Maxmen International. F1A, F1B, F1C, F1E, F1P World Cup event. Contact: George Batiuk, 2221 King St #2, San Luis Obispo, CA 93401, USA, tel: +1 805 305 0340, fax: +1 805 546 0700, email: slogb1@gmail.com	March 19-20	Bear Cup. F1A, F1B, F1C, F1Q World Cup event. Contact: Kim Henriksson, Ymmerstanmäki 9, 02750 Espoo, Finland, tel: +358 41 5152 481, email: kim.henriksson@inspecta.fi, web: www.flyhigh.fi/bearcup2011
February 19-20	BMFA Salisbury Plain. See FFn 1012.	March 19-20	BMFA Salisbury Plain. See Feb 12-13.
February 20	BMFA 2nd Area. C/P (White), F1A (KMAA/Plugge), F1G, Vintage R/P (Plugge), Vintage Glider, HLG- CLG(Plugge). Contact: Area Comp Secs.	March 20	Coupe Europa. F1G, Vintage CdH. Start 10am. See FFn 1002. Contact Martin Dilly 0208 777 5533, martindilly@compuserve.com
February 21	Chobham tree chop. Meet at Staple Hill car park at 10am. (NB Monday)	March 26-27	BMFA Salisbury Plain. See FFn 1012.
February 26	8th Philippe Lepage. F1B World Cup event. Contact: Jean-Pierre Challine, 13 ch des Chéneaux, 91220 Bretigny / Orge, France, tel: +33 6 11 95 57 11, email: mjp.challine@sfr.fr	March 27	BMFA 4th Area. C/R (Gamage), F1C(Halfax/Plugge), F1Q, F1H(Plugge), SLOP (Plugge). Contact: Area Comp Secs.
February 26-27	BMFA Salisbury Plain. See Feb 12-13.	April 2	14th Kup Slavonije I Baranje. F1A, F1B, F1C. Contact: Vinko Tomljanovic, Trg I Krizanica 5, 31000 Osijek, Croatia, tel: +385 91 532 1422, email: vinko.tomljanovic@gmail.com, web: http://www.aeromodelarstvo.net
March 5-6	BMFA Salisbury Plain. See Feb 12-13.	April 2-3	BMFA Salisbury Plain. See Feb 12-13.
March 6	BMFA 3rd Area. C/G, F1B (Duce/Plugge), F1J-/2A, Mini Vintage(Plugge), P30 (Plugge). Contact: Area Comp Secs.	April 9-10	London Gala. 9th: C/R, C/G, C/P, Vintage R/P, P30, CO2, CLG, F1E. 10th: F1G, F1H, F1J-BMFA1/2A, Vintage Glider, Mini Vintage, SLOP, E30, HLG. Contact: T.Grey 01892 539221.
March 11-13	Mura Cup. F1A, F1B, F1C, F1Q World Cup event.. Contact: Bogdan Lemut, Borovnjakova 1, 9000 Murska Sobota, Slovenia, tel: +386 41 210 144, fax: +386 2 534 81 51, email: muracup@siol.net, web: http://freeweb.siol.net/muracup	April 9-10	2 F1E World Cup events. Contact: Peter Kuttler, tel: +49 9286 61 87, email: peter- kuttler@web.de

The CIAM Plenary meeting will be held on April 15 and 16. The agenda has not yet been published but presented here are known free flight proposals. **These are unofficial until the agenda is published, which you will be able to see via [www.fai.org/aeromodelling/meetings](http://www.fai.org/aeromodelling/meetings).** As usual the route for comments is to follow your national route for making input to the brief given to your national CIAM delegate. For example, in the UK give your views to the FF Technical Committee who are responsible for briefing the UK CIAM delegate.

These proposals all affect paragraph 3.Q.2 Characteristics.

- Reason: To reduce the upper limit on motor run to reflect model performance, a lower value has been used in many competitions (*although 20 sec is still long for current models*)

- Maximum mass of the motor including a connector and the cables from the motor to the connector must not exceed 8% of the mass of the model (including motor and batteries) with an upper limit maximum motor mass 45g.

The cells must be in original manufactured condition.

Batteries should be wrapped in a transparent **shrink tube** to allow their classification. The batterypack will power the motor(s) as well as the controller(s) if they are used.

Maximum weight of battery pack (including connectors on the battery; **lithium type batteries of more than one cell need to have a balancer connector**):

e) **From Germany.** Replace the battery weight and motor run limits in 3.Q.2 by:

The motor run time will be determined by a maximum energy amount. In addition, motor runs over 20 seconds are regarded as overruns. The energy budget of each model is 5 joules per gram of the total weight. For energy calculations, weight exceeding 600 grams is to be ignored.

## Reasons

A weight to energy based ratio suits to a wide range of models providing a comparable potential energy to reach similar altitudes. Any sportsman may decide which kind of flight pattern he prefers. Different model configurations are competitive within one event.

With a limiter, there is no need any more for the newest, most powerful and lightest motors and batteries. Both, an endless and expensive rush to the most advanced components and the unwanted “uniform” models (like in the other free flight classes) will be avoided. Each sportsman needs just one energy limiter - if it's adjustable - for all of his models, reducing the overall costs.

Cutting the energy calculation at the 600 gram limit avoids models too large, and allows converting of FIC models into FIQ. Furthermore, if needed in the future, it's simple to reduce the energy amount which is permitted. Such an adjustment of the rule doesn't need to change the models.

Neither a type nor a weight limit of a battery has to be defined. The energy limit per gram determinates the performance possible.

Fixing an energy amount of 5 joules per gram of the total model weight will reduce the performance of current high performance models for about 1/3. As an example, the WCup 2010 winning model from Matti Lithamo:

- Model weight round about 550 grams, energy consumption for 6 seconds is 4200 joule (input on average about 700 watts), enough to reach an altitude of 150 meters.
- The limited energy budget of the proposed formula will be 550 grams x 5 joules = 2750 joules. So the estimated altitude is 100 m.
- Successful models with a spiral climb pattern like those of Frank Pollard or Klaus Salzer reach the same altitude with motor runs between 12 and 15 seconds.

Energy limiting makes different model configurations comparable.

- f) From Denmark** to introduce energy limiters:-

- i) In 3.Q.2 replace battery weight and motor run limits by:  
Maximum used energy from the battery during motor run:  
4 Joule/g total weight of model.
- ii) Replace motor run reference in 3.Q.8. (classification) by  
energy limiting particularly in item (b):-
- b) In order to decide the individual placings when there is a tie, additional flights shall be made after the last flight of the event has been completed. **The maximum allowed energy from the battery for the first of the deciding flight shall be 1 Joule/g total weight of model lower than that used in the rounds. The maximum allowed energy from the battery will be reduced further 1 Joule/g total weight of model for each subsequent flight, subject to a minimum of allowed energy from battery of 1 Joule/g total weight of model.**

The maximum time for the deciding flights will remain at that defined in 3.Q.7.

- iii) In 3.Q.5 (attempt). 3.Q.9.(timing) delete references to timing motor run.

Reasons:

Using the Energy-limiter Principle minimizes the need for the newest and lightest (and often most expensive) technology

Makes different model types and configurations comparable

Promote innovation (Avoid "uniform" models.)

In F1A the energy is a 50m long towline plus the ability of the competitor to run and release the model at high speed. In F1B the energy is extracted from 30 grams of rubber, of which the best stuff tends to become more and more scarce and therefore almost impossible to pay for.

In F1C and F1J the engine size plus 5 seconds engine run is the limiting factor, and very difficult to time correctly. With an ENERGY-Limiter in F1Q the amount of energy/gram available is exactly the same for each competitor, and the challenge is solely to use it in the best way.

**g) From USA F1Q motor runs.** (Note: at the time of going to press it is not yet confirmed that this proposal will be included on the agenda for a technicality of submission).

Replace the 3-line paragraph "Maximum duration of motor .... Release of the model" with

#### Motor runs

- A. The energy budget of each model is up to 4.5 (four and a half) watt-sec per gr. Calculated motor runs under 4 (four) seconds or above 15 (fifteen) seconds will be rounded up/down to 4/15 seconds respectively. A +0.2 second will be considered an over run.
- B. The motor's energy in watt-sec over the motor run is calculated as the average wattage over the motor run multiplied by the motor run, using a freshly charged battery (4.15 volts per Li cell, 1.2 volts per NiCad or NMH cells). Average wattage is calculated as:
  - B1. Statically (the default): averaging of the initial wattage as the motor is powered and the terminal wattage just before it's powered down by measured by a commercial wattmeters via 3.5 mm male and female bullet connectors furnished by the contestant.
  - B2. Using pre or post flight controller dumps. Controllers with this feature can display a wattage profile over time on a PC from which the initial and terminal wattage figures can be read. The contestant is responsible for the appropriate display device.
- C. Motor run satisfying (A), rounded to the closest 0.5 second will be posted on the model. Motor runs exceeding 0.1 second are considered overruns.
- D. If programmable energy limiters are used, then only (A) applies.

Reasons:

Each model will have its own motor run, depending on its weight and power train. A common watt-second per gram ceiling allows all models to attain the same potential altitude. The efficiency of electric models, accounting for losses due to the controller, motor, (gear) and propellor, as well as aerodynamic losses is between 30-35%. A 4.5 watt\*sec/gram value allows models to reach altitudes of 115-135 meters.

The upper motor run limit is designed to prevent heavy low powered models from cruising up with 40 second motor runs. The 4 second lower bond marginally effects the very high powered models, as it is difficult to build them under 500 grams. Furthermore, timing sub 4 second motor runs is likely to be inaccurate. (Note that motor runs can be measured statically before or after the flight, independent of whether the battery is fully changed.)

An energy/weight approach allows a wide range of models in the event. A 250 gram model with an average power of 125 watts would have a 15 second motor run while a 600 gram model with an average power of 700 watts would have a 4 second motor run. These examples correspond to very successful models by Frank Pollard (USA) and Matti Lihtamo (Finland).

Programmable energy limiters will obsolete motor run timing. Until they become available, motor runs would have to be timed, per paragraphs (B) and (C).

Height in metres

watts/g	Efficiency			
	35%	30%	25%	20%
3	107.1	91.8	76.5	61.2
4	142.8	122.4	102.0	81.6
4.5	160.6	137.7	114.7	91.8
5	178.5	153.0	127.5	102.0
6	214.2	183.6	153.0	122.4

Motor runs for 4.5 WS/G

gram	watts						
	100	200	300	400	500	600	700
250	11.3	5.6	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>
300	13.5	6.8	4.5	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>
350	<b>15.0</b>	7.9	5.3	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>
400	<b>15.0</b>	9.0	6.0	4.5	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>
450	<b>15.0</b>	10.1	6.8	5.1	4.1	<b>4.0</b>	<b>4.0</b>
500	<b>15.0</b>	11.3	7.5	5.6	4.5	<b>4.0</b>	<b>4.0</b>
550	<b>15.0</b>	12.4	8.3	6.2	5.0	4.1	<b>4.0</b>
600	<b>15.0</b>	13.5	9.0	6.8	5.4	4.5	<b>4.0</b>
650	<b>15.0</b>	14.6	9.8	7.3	5.9	4.9	4.2
700	<b>15.0</b>	15.0	10.5	7.9	6.3	5.3	4.5

#### **Definition of free flight**

From FFSC. Change Volume ABR, 1.3.1 Category F1 – Free Flight by adding the text indicated:

Closed loop control systems with active sensors and operating aerodynamic flight controls **or moving mass** are not allowed, except for steering in F1E.

Reason: To close a loophole that the ban on closed loop controls applied explicitly to aerodynamic controls only. Similar complication could be generated with a closed loop control system moving ballast or other mass to control the aircraft. *(May introduce alternative questions of applicability).*

### F1C and F1Q radio DT/motor stop

From FFSC. Modify the indicated part of 3.3.2 Characteristics of model aircraft with piston motors F1C:

F1C models may use radio control only for irreversible actions to **terminate the flight, (dethermalisation). This may include stopping the motor if it is still running.** Any malfunction or unintended operation of these functions is entirely at the risk of the competitor.

Reason: To state that it is not permitted to use radio as an alternative way to stop the motor during a regular flight. There are safety implications when using radio in this manner. Same change to be applied to corresponding item in F1Q.

### All volumes of Sporting Code 4 except ABR

From FFSC: Change the numbering system in the technical volumes of Sporting Code to replace the leading numbers of the current numeric system N.x.x by the class abbreviation.

Reason:

The numbers used in the Sporting Code originally related to its position as part numbers of the Sporting Code. Since the Code now appears only as separate volumes it is redundant to continue the use of the numbering system starting with 3 and higher for specific classes.

Instead it is proposed that all paragraphs in volume F1 start with "F1", those in volume F2 start with "F2", etc. This serves to identify the volume within the current format of the Sporting Code. Furthermore by adding the class letter, the specification for each class can be considered alone with completely self-explanatory evidence of the class to which the rules apply. Any cross-references to rules (for example from Annexes) are also made more comprehensible. You do not need to make the mental conversions such as "3.4 applies to F1D" or "5.2 applies to F3D" since it is obvious which class a rule covers. When rule changes are being considered there is also greater clarity in knowing which class is affected by a specific paragraph. The system also resolves the anachronism of both Scale and Promotional classes have volumes numbers beginning with "6."

To give some examples:

In volume F1 Free Flight paragraph 3.4.7 in the F1D rules becomes F1D.7.

In Volume F2 Control Line paragraph 4.3.6 in the F2C rules becomes F2C.6.

This change was proposed in 2009 for volume F1 but was withdrawn without submission to Plenary under the objection that all the technical volumes should have consistent format. The application of the system to all other categories has been investigated and no problem was found which would hinder application to all technical volumes. A paper summarising this study was submitted to the CIAM Bureau and agreement reached that subcommittee chairmen make the changes to their volumes to identify any problems.

### Official flights in all outdoor competition classes

From FFSC. Change 3.1.3 Number of Flights by adding the indicated text to item (b).

b) Each competitor is entitled to one official flight in each round of the event. The duration of rounds must be announced in advance and may not be less than 30 minutes or greater than 90 minutes. **The competitor must tow and release his model during the round for the official flight, including attempts and repeated attempts.**

Reason: To clarify that flights must be made during the round including any reflights and second attempts.

Equivalent changes to be made to F1B, F1C, F1E, F1P, F1G, F1H, F1K, F1Q. In F1B and F1G to include winding the motor within the round (as currently specified only for flyoffs).

### Definition of free flight launch

From FFSC. Change Volume ABR, 1.3.1 Category F1 – Free Flight by adding to the end of the first paragraph:

Unless specifically stated in the rules for a class, free flight models must be launched with at least one hand holding the fuselage of the model

Reason: To remove the possibility of discus-style launching by one wing tip for general free flight models. Such launching can give potential performance benefits at the possible cost of some safety. Such performance gain goes against the general aim of keeping model performance within reasonable bounds, and should be eliminated before people invest effort in developing such launches. In another proposal an exception is requested for F1N, which class already uses such launching and has launch conditions which are suitable for its use.

### World Cup rules

Canada request World Cup status for the "Pan American Cup":

Change World Cup selection form countries:

A maximum of two contests may be selected for any **European country. A maximum of three contests may be selected for none European countries**

Reasons: It will give a better chance for none European modellers to compete for World Cup points. The idea is also supported by the international community of competitors.

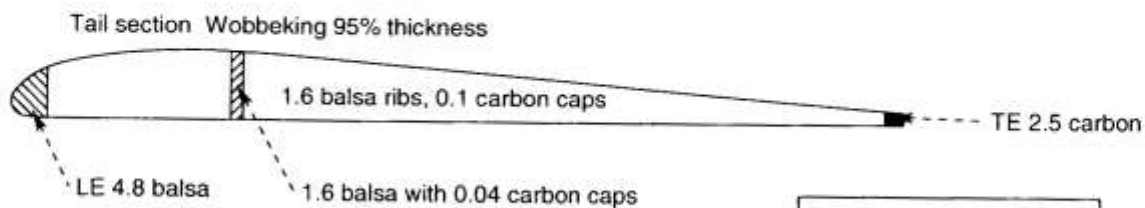
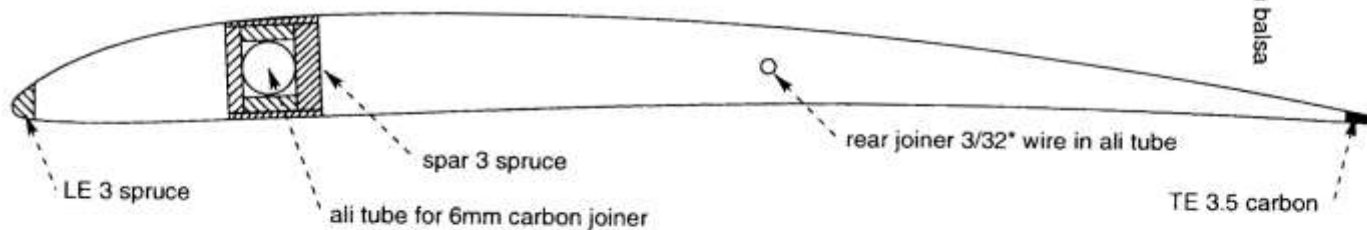
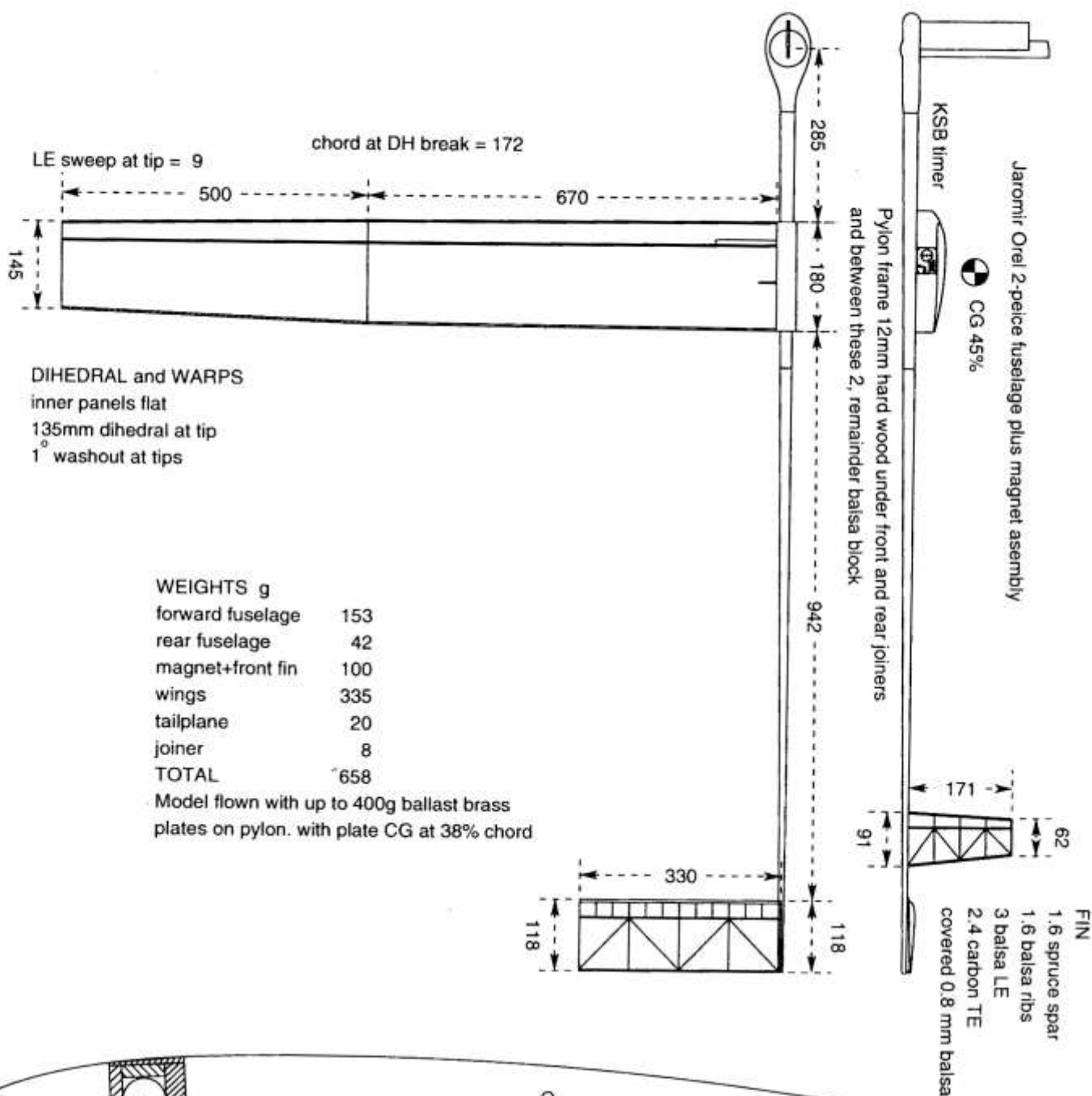
### IK-92, F1E BY IAN KAYNES

The plan shows my most successful windy weather model. I used it for the windier last rounds in the European Championships in Romania last year. I must explain the name since it doesn't indicate that I have specifically built 91 previous models - the 9 indicates that it was built in 2009 and the 2 that it was my second model in that year.

The wing section is one that I developed using XFOIL/Profili for efficiency in F1E flying with the weight and speeds of this model. It turns out to be very similar to a Verbitski power section from some years ago. The wing is made from blue foam covered with glass fibre. The wings are heavy but given low speed is not an aim for windy weather flying this is only detrimental in the added roll and yaw inertia of the model. On the other hand they are pretty sturdy, for example when flying with ballast the model has flown into a telegraph pole hitting one wing and survived with just a small dent and could continue flying.

I will now go into detail of the construction sequence for the foam wings. I cut the foam with a Tekoa Feather Cut bow which is a ready made solution to providing a good wire tension and as a means to produce tapered wings with a controlled speed of the cut.

First I cut the required planform from the basic 1" foam sheet. This is accurate with regard to the inner and outer chordwise cuts and the leading edge but left over-length at the trailing edge. I make upper and lower surface templates from L-section or T-section aluminium filed to suit the specific section surface allowing for the wire thickness on the finished wing and also including any wash-out between the inner and outer ends of the panel.



**IK-92**  
**F1E by Ian Kaynes**

FFn Scale 1:10 All dimensions mm

The templates have locating blocks stuck on to position them against the front part of the foam – which is set at 3mm behind the wing leading edge, the leading edge being added as a piece of wood of this thickness.

To make the section cuts the foam is weighed down on to a special board which has aluminium supports of the same thickness as the template material. Thus the base part of the templates can slot under the foam without distorting it. I first cut the upper surface, with the bow moving from trailing edge to leading edge. This direction helps the bow pass over the \*more steep leading edge profile because it is dropping over that part rather than being pulled up against the bow weight if done in the other direction. Having cut the upper surface the lower surface is then cut, in this case going from leading edge to trailing edge, because this gives a more consistent cut at the trailing edge (the gradient is very shallow at that point and if the wire enters from the trailing edge it can deflect up or bite down into the foam slightly inconsistently. Both the upper and lower pieces of removed foam are retained as essential elements in the rest of the production .

A spruce leading edge is now stuck to the front of the foam and shaped to section. I then use a small vertical hot wire on a base to cut the wing along the spar line (a hot-wire equivalent of a band saw) The leading edge runs against a stop for the constant width front section of the inner panels, and for the tapered width tip section the wing is taped to a support base angled to give the required taper.

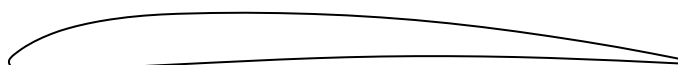
A simple full depth 1/8" spruce spar is used as part of the simplicity of this structure. Well, there is one complication in that it is cut under-height and has caps of soft balsa stuck to the top and bottom of the spruce. Although these do reduce the strength at the extremities (where maximum structural efficiency is required) it greatly helps when sanding the spar to blend into the wing section. For the tip panels the spar can be stuck directly to the front part of the foam but for the inner the spar is more complex since the joiner is attached to it at the wing root. Pieces of hard balsa are stuck to the top and bottom front of the spar – for the 100 mm length of the joiner plus a taper to zero width at about 40mm further out. The arrow tube into which the joiner fits is Araldited in to this space in front of the spar and then a piece of balsa stuck to the front of it to make a box. The box is then bound with Kevlar thread and this box part is covered with thin balsa sheet like the rest of the spar/. A cut-out is made in the front piece of foam to accommodate the joiner tube assembly and then the front foam can be stuck to the spar.

The rear pieces of foam are now stuck to the rear of the spar (which does introduce a section error by moving back the rear of the wing by the spar thickness, but I regard this as negligible on a typical 170mm chord) with the wing resting on a polythene sheet on top of the lower surface mould. Now the wing is cut to the precise planform at the trailing edge to give the required chord when the carbon trailing edge has been stuck to the rear of the foam.

Finishing work on the wing now includes cutting slots for dihedral braces directly in front of or behind the spar and covered with this balsa, inserting supporting wood and tubes for the rear joiners and sticking on root ribs and tip blocks. The wing is then sanded smooth and is now ready for covering with 25 g/sq m glass cloth. The chordwise strips at the root and either side of the dihedral joint are covered with an additional 50mm wide layer of cloth with 0-90° weave, then the full wing panels are covered with cloth oriented at  $\pm 45^\circ$ . I do this as a single piece wrapping round the leading edge. I cut the required piece of cloth with masking tape along the edges to control it, spray the wing with photo-mount, then place the lower surface on to the cloth. Then the wing is rotated about

the leading edge so that the upper surface is now resting on the other half of the prepared piece of cloth. Pressing it down to stick to the cloth then allows it to be lifted up and any extra pressure applied to stick the cloth on uniformly.

When both inner or both tip panels have been covered, epoxy is applied to the pair of panels. Both upper and lower surface moulds are covered with polythene, a panel is rested on its upper surface mould and epoxy rolled on to the lower surface, then it is turned over to rest on the lower surface mould, epoxy rolled on to the upper surface, then the upper surface mould pushed on to the wing and taped round to the lower surface mould holding the assembly together. I then put the pair of panels between a pair of clamped boards to apply pressure – undoubtedly vacuum bagging would be better but I have not got around to organising it yet. A later extension after model IK-92 was to follow Ken Bauer's technique of applying paint to the outer surface of the epoxy by covering the wing with a sheet which has had release agent applied then spray painted. Works well, but again would do better with more even pressure!



Model IK-92 wing section ESEC SA									
Nose radius=0.79 Upper surface max= 7.26 at 35									
Camber max= 3.81 at 45 Max thickness= 7.49 at 22 Area= 508									
X	0	1.25	2.5	5	7.5	10	15	20	25
YU	0.000	1.448	2.307	3.607	4.574	5.288	6.266	6.840	7.111
YL	0.000	-0.914	-1.030	-1.143	-1.150	-1.081	-0.858	-0.611	-0.363
X	30	40	50	60	70	80	90	95	100
YU	7.229	7.209	6.873	6.190	5.144	3.780	2.174	1.251	0.278
YL	-0.116	0.347	0.690	0.848	0.802	0.579	0.203	-0.033	-0.278

## BMFA 1ST AREA MEETING, JANUARY 23

Area	Weather
Scotland	calm!
Northern	no venue
North East	cool light wind
North West	no scores
Midland	cool 10-15
East Anglia	poor vis 15 to 20
South East	cloud 8 to 15
Western	cool overcast
Southern	cool 10mph
London	cold 10 mph poor vis
South West	sunny 10 to 15

### Combined Rubber 18 flew

1	P Ball	Grantham	7.30	5.20
2	C Chapman	Bristol & West	7.30	5.10
3	J Leadbeater	NWFFG	7.30	5.03
4	D Neil	Bristol & West	7.30	4.58
5	N Rogerson	NWFFG	7.30	3.45
6	M Marshall	Impington	7.30	2.07
7	P Hall	Crookham	7.27	
8	J Northrop	Morley	7.23	
9	R Marking	CVA	7.15	

### Combined Power 20 flew

1	A Shepherd	Crookham	7.30	5.49
2	S Dixon	Birmingham	7.30	4.48
3	P Watson	Birmingham	7.30	4.43
4	T Grey	Crookham	7.30	4.37
5	F Rushby	CLEEMAC	7.30	3.50
6	A Brown	Novo	7.30	3.25
7	R Wykes	Timperley	7.30	3.30
8	M Lester	Birmingham	7.30	
8	T Payne	Biggles	7.30	
10	C Chapman	Bristol & West	6.37	

### Combined Glider 31 flew

1	A Gibbs	B&W	7.30	4.11
2	B Bow	B&W	7.30	2.36
3	R Jack	Grantham	7.30	2.19
4	B Baines	Grantham	7.30	1.31
5	T McLaughlin	Scotia	7:25	
6	J Carter	Grantham	7.24	
6	D Cox	Crookham	7.24	
8	Chris Edge	Scotia	7:12	
9	J Hook	Crookham	7.09	
10	C Parry	Biggles	7.07	
11	P Ball	Grantham	6.59	
12	D Hambley	Scotia	6:58	
13	P Tribe	B&W	6.48	
14	R Audley	CV A	6.33	
15	P Seeley	B&W	6.27	
16	K Burt	B&W	6.07	

### Mini Vintage 20 flew, 10 F/O

1	J Foster	Morley	6.00	3.44
2	R Foster	Morley	6.00	3.11
3	G Beal	Morley	6.00	3.00
4	Neil Allen	East Grinstead	6.00	2.58
5	G Warburton	Morley	6.00	2.49
6	D Ginns	Market Harborough	6.00	2.31
7	J Godden	Morley	6.00	2.28
8	Ken Taylor	East Grinstead	6.00	2.24
9	D Barber	NWFFG	6.00	2.18
10	C Foster	Morley	6.00	1.19

### SLOP 3 flew

1	M Quinn	Novo	7:30	3:57
2	Rob Taylor	East Grinstead	7.00	
3	M Sibson	Grantham	2.30	

### Plugge

		OR	OG	OP	
1	Bristol & West	177	197	105	479
2	Crookham	67	158	185	410
3	Grantham	100	184	35	319
4	Birmingham	22	65	185	272
5	Morley	89	51	30	170
6	Biggles		103	65	168
7	NWFFG	167			167
8	CVA	100	58		158
9	CLEEMAC		64	80	144
10	Scotia		142		142
11	Timperley	50		70	120
12	Crawley		80		80

### CEMINAC INDOOR, CROATIA, JAN 22

NB It is understood that F1N-150 is a Croatian national class for small catapult gliders.

F1N 30 flew			totals			F1N-150 69 flew			totals		
			9 ft	best 3					9 ft	best 3	
1	D Kosir		320.0	115.2		1	M Balaško (J)		244.8	93.2	
2	M Balaško (J)		162.1	102.1		2	D Kosir		209.6	83.2	
3	I Herman		175.8	94.7		3	I Herman		131.5	83.0	
4	V Zobec		156.2	94.3		4	V Zobec		192.1	82.4	
5	F Masnjak (J)		166.9	92.1		5	D Pacanović(J)		145.4	77.2	
6	D Pacanović (J)		120.6	82.4		6	D Vukajlović		172.8	69.9	
7	F Novoselec (J)		184.7	80.8		7	D Špehar		128.7	69.4	
8	D Špehar		164.3	75.3		8	M Ivanković(J)		93.4	69.2	
9	A Tucman (J)		168.7	74.7		9	B Cik (J)		121.7	67.4	
10	M Ivanković (J)		121.0	71.4		10	B Grubić		149.9	66.6	
11	S Vidč		165.4	68.8		11	M Grgić (J)		125.8	65.8	
12	M Čiček (J)		158.1	66.7		12	F Novoselec(J)		101.4	62.6	
13	D Vukajlović		162.5	66.7		13	M Grubić		135.0	61.3	
14	F Glogoški (J)		157.5	66.4		14	A Tucman (J)		148.2	61.0	

### UK MUSEUM OF MODEL FLYING

For several years the concept of rescuing significant models, documents and artefacts is discussed at BMFA Council meetings; usually we all agree that something ought to be done, and then move on to debate the need for changes in the RC Achievement Scheme or how gas turbine flying should be regulated. The recent death of Ron Moulton, who knew more about the history of model flying than anyone else I know, probably focussed a few minds on what we had lost and a few weeks ago at Council the idea of a model flying museum again arose: I queried how we would ever decide how to select items and what criteria should be used. As is often the case when anyone raises a question, I ended up with the job of drafting a paper on this.

One of those at the meeting was Jim Wright who used to fly at Chobham and is now the chairman of Ivinghoe Soaring Association. Within a week he had sent me an outline of how we might progress the idea of a museum and selecting what goes into it, thus doing a lot of my work almost before I'd had time to think about it. Of course we need to consider all disciplines and to bear in mind that most BMFA members aren't contest flyers. I'm already in touch with the curator of the AMA's museum at Muncie, but I'd be grateful to hear your own ideas, as I need to have something ready in time for the May Council meeting.

Maybe World and European Championship-winning models should be acquired, but what else? 'Iconic' models? What constitutes one of those? Significant developments? Which ones in free-flight? Equipment? Engines?

There are probably three stages on the way to a museum. Stage 1 is deciding what should be saved, Stage 2 is storing it somewhere safe and Stage 3 is finally the museum itself. Discussions on a museum tend to merge with the idea of a new BMFA headquarters and also a national flying site; the latter seems to lose its appeal to most RC flyers if it's more than about ten miles from where they live, so may be a non-starter.

Anyhow, please e-mail me at: martindilly@compuserve.com with your ideas on all this.

### INTERNATIONAL COMPETITION NEWS

ILBESHEIM CONTEST SERIES AUGUST 19- 22. From Ansgar Nüttgens.

You have seen on the FAI international World Cup schedule, our new 2 World Cup contests Ikarus Cup and Dädalus Cup of Switzerland will take place in Ilbesheim/ Germany (50 km southwest of Frankfurt/ Main). In addition, we will also fly the Europe Coupe Revival contest in the following classes without World Cup status: F1G, F1H, F1H(N), F1A Low Tec, F1B Low Tec and F1H Low Tec as unofficial open European Championships.

Here is a little bit of history for all non-Europeans and younger free flight participants: **Europe Coupe Saar** was a traditional free flight contest of Aero Club Saar, starting in 1954, and held every other year between the World Championship. The official FAI status as European championships started in 1970. The last time this contest officially had the title "European Championship" was in 1976, then starting in 1978 the Euro Champs rotated around European countries. You can say that the **Europe Coupe Saar** was the precursor to the actual European Championships. Perhaps in the future, the classes F1G, F1H, and F1Q will also be part of the FAI European and World Championships. As clarification, especially for non-European free flight sportsmen, even though we have the word "Europe" in our contest name, this event is an open to all contestants regardless of country or origin or citizenship. With



our Europe Coupe Revival we want to recapture the spirit of this historic contest. So please join us for a true revival of international sportsmanship and camaraderie.

As well as bringing your modern models for the IKARUS and DÄDALUS World Cup events, I'm sure, every one of you has older models in the cellar, and should bring them along to let them fly in a contest "like in the old days", this is the main task of this event. Also camping will be possible around the small vineyard village and a banquet will be held on Saturday evening to allow all members of the global free flight community to socialize, network, and discuss the future of our sport.

Initial information is published on the internet [www.creasus.com/Ikarus](http://www.creasus.com/Ikarus), which will be updated with more details in the next weeks.

As organizer of this new event, it would be very helpful to have a preliminary overview about your interest in our contests, especially the Europe Coupe Revival. Hence we ask you to give us as some early feedback only for information and organizing efforts. Since only 20 entries are possible on each link, here are different links for entering

in English: <http://doodle.com/y9se47gf3qreqqb8> or <http://doodle.com/a4q6a4cximxpna>

in Russian <http://doodle.com/yfqz8e2dfkz57dq>

in French <http://doodle.com/yfqp488ag725adae>

in German <http://doodle.com/7ifusryx3rrkh2dn> or <http://doodle.com/hgh9tuy53zayq3p8>

Please open the link <http://doodle.com/wmf6d7gbn8f2mn3a>, fill in "surname and name", modify the appropriate fields and save it. you can write also here some comments or send me an e-mail. I sincerely thank you for your time and assistance.

*(Ed: I had always thought it was called Europa Coupe rather than Europe Coupe, this is confirmed by my commemorative glass boot from the 1970 event.)*

## NFFS SYMPO FROM FFN

The current FFN stock of 2010 NFFS Symposium Reports sold out last month. It is planned to bring more copies back from Lost Hills and so they should be available again by the end of this month.

## NOTICEBOARD

BIGGLES NEWS 2011. From Dave Brawn: I am now in position to email out our new Biggles News 2011 along with a full size plan of Disco Stu DLG beginners glider. If you would like to receive a copy of the News (1.2Mb pdf) and plan (0.1Mb pdf) just email me at: [david.brawn@ntlworld.com](mailto:david.brawn@ntlworld.com)

PLANS. The following plans have been kindly donated by Malcolm Wood to swell the FF Team Support Fund. All are unused.

Andres Lepp's original AL-29 F1A (1989 World Champs winner, with Russian notation)	£5.00
Bob White's Vol Libre #8 F1B (1987 World Champs winner)	£5.00
Hardy Brodersen's KMA F1C (2 sheets)	£5.00
Joe Savini's Vital Classic F1C (£18 from X-List)	£10.00
Tom Smith's Nig Nog .29-powered Open model (£19.50 from X-List)	£10.00
Trevor Payne's Forte .40-powered Open model (£21.50 from X-List)	£10.00

Mike Thomas's Predator Open Rubber model (£9.95 from X-List) £5.00

Norman Marcus's Bazooka Vintage FAI Rubber model (£8.00 from X-List) £5.00

Please contact Martin Dilly, 20, Links Road, West Wickham, Kent BR4 0QW or call 020 8777 5533 or email [martindilly@compuserve.com](mailto:martindilly@compuserve.com) before sending a cheque payable to BMFA FF Team Support Fund for the ones you want.

LARGE OPEN RUBBER MODELS. Is there anyone out there who would like to have two big models that I no longer have room for. They are my 1984 Cabaret Star 500 sq in flyoff which had many successes in the eighties, and the big 2m Orion which won the last unlimited flyoff at the 2006 Southern Gala. I could hand over at the Nats. Mark Croome 01872 223610

## UK COMPETITION NEWS

CROYDON WAKEFIELD DAY will be held at Middle Wallop on April 25. The events will be F1B for the Thurston Trophy, 4oz Vintage Wakefields for the Fairlop Cup, and 8oz Vintage Wakefields for the Ted Evans Trophy. SAM-eligible models will be allowed. An addition this year will be a Marcus Lightweight Challenge for the four Marcus lightweight designs (see below). The start is 10 a.m. and the F1B contest will be flown in rounds. The airfield will be available for other free-flight trimming on the same day. Contact : [martindilly@compuserve.com](mailto:martindilly@compuserve.com) or call 020 8777-5533.

Norman Marcus Lightweight Challenge: At most Mini-Vintage contests probably half of the models flown are Marcus designs and each design is a potential winner. To mark Norman's 66 year association with Croydon & DMAC we are holding a special event at Croydon Wakefield Day on April 25<sup>th</sup> at Middle Wallop. It will be for the four Marcus lightweight designs, - Raff V, Supa Dupa, Dynamite and Bazooka. Most aeromodellers have at least one of these models in their box so come and fly it and make Norman proud.

OXFORD MFC DREAMING SPIRES GALA will be held at Port Meadow, Wolvercote, Oxford on July 3. Events will be :

Vintage (10 am start) L/W Rubber, Vintage Glider, Classic Glider (both 50 metre line max), Vintage HLG inc Catapult.

Modern (10am start) P30/E30 Combined, Silent Open Tailless, Rapiet R30.

F/F Scale ( 2.00pm start ) all-in, no documentation, IC engines 1.5cc max.

All flyers require BMFA insurance. Contact Charlie Newman 01865 426129

TYNEMOUTH MINI RALLY. The Tynemouth Club are to run a Mini Rally for Combined BMFA 1/2A/Brit Power (8 SEC MOTOR RUN), Combined F1G/Mini Vintage Rubber, F1H (3X2min), and Combined HLG/Catapult Glider (5x1min) on Sunday 31st July, 11am to 4.30pm. Reduced maxes and D/T fly offs depending on weather. No thermal detection devices. The venue is Newcastle Town Moor, a flat grass field site measuring approx 1/2 mile East to West and 3/4 mile North to South, situated North of Newcastle City centre bordered by the A167, A187 and B1318 roads. Free parking on Claremont Road, Forsyth Road and the Eastern end of Grandstand Road. The Rally qualifies for the F1H Biggles League. Contact Brian Martin on 0191 4161096 or email [brian\\_martin\\_uk@hotmail.com](mailto:brian_martin_uk@hotmail.com)