

# FREE FLIGHT

## news

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### FFn DIARY

February 7-9 Lost Hills, California, USA	Kiwi Cup. F1A F1B F1C F1E F1P F1Q. World Cup event. Contact: Roger Morrell, tel: +1 310 483 8776, email: <a href="mailto:r_morrell@yahoo.com">r_morrell@yahoo.com</a>	March 7-8 Hranice, Czech Rep.	Winter Cup I and II. F1E. World Cup event. Contact: Vojtech Zima, Smetanovo nab 1840, 75301 Hranice, Czech Rep., tel: +420 604 589 792, email: <a href="mailto:voziteam@seznam.cz">voziteam@seznam.cz</a>
February 8 Area Venues.	BMFA 1st Area. F1A (SMAE), F1G (Plugge), C/P (White), E36 Plugge), Mini Vintage (Plugge).	March 14 Gjovik, Norway	Holiday on Ice. F1A F1B F1C F1Q. World Cup event. Contact: Tor Bortne, Jernbanev 28, 2840 Reinsvoll, Norway, tel: +47 920 95 329, email: <a href="mailto:tobortne@bbnett.no">tobortne@bbnett.no</a> web: <a href="http://www.frifluktvegar.no">http://www.frifluktvegar.no</a>
February 10 Lost Hills, California, USA	North American Cup. F1A F1B F1C F1Q. World Cup event. Contact: Tony Mathews, tel: +1 705 754 55 53, email: <a href="mailto:tmathews180@gmail.com">tmathews180@gmail.com</a> web: <a href="http://www.torontofreeflight.org">http://www.torontofreeflight.org</a>	March 22 Area Venues.	BMFA 3rd Area.Vint' G (Plugge), C/R (Gamage), F1C (Halfax/Plugge), F1Q, HLG-CLG (Plugge).
February 12-16 Lost Hills, California, USA	MaxMen International. F1A F1B F1C F1E F1Q F1G F1H F1J. World Cup event. Contact: Bill Booth Jr, tel: +1 760 842 1079, email: <a href="mailto:booth@boothsuarez.com">booth@boothsuarez.com</a>	March 28-29 Tapolca, Hungary	Herend Cup. F1A F1B F1C F1P F1Q F1H. World Cup event. Contact: Ferenc Kerner, Táncsics u. 67, 8440 Herend, Hungary, tel: +36 20 584 53 49, email: <a href="mailto:ferenc.kerner@herend.com">ferenc.kerner@herend.com</a> web: <a href="http://www.herendimodellezose.hu">http://www.herendimodellezose.hu</a>
February 22 Nova Pazova, Serbia	6th Koplas Pro Cup. F1N. Contact: Martin Grubic, S. Solaje 15, Nova Pazova 22330, Serbia, tel: +381 63 86 58 182, fax: +381 22 323 597, email: <a href="mailto:martin.grubic@yahoo.com">martin.grubic@yahoo.com</a> web: <a href="http://www.aknovapazova.com">http://www.aknovapazova.com</a>	March 28 - April 2 Slanic Prahova, Romania	Indoor European Championships F1D. Contact: Popa Cringu tel: +40 21 316 24 54, email: <a href="mailto:cringupopa@gmail.com">cringupopa@gmail.com</a>
February 28 Viabon, France	12th Philippe Lepage - Rubber Days. F1B. World Cup event. Contact: Jean-Pierre Challine, 13 ch des Chêneaux, 91220 Bretigny sur Orge, France, tel: +33 1 75 59 94 37, email: <a href="mailto:mjp.challine@sfr.fr">mjp.challine@sfr.fr</a>	April 3 (Good Friday) North Luffenham	BMFA Northern Gala. C/G (CMA), C/R (Caton), B/P (Hamley), C/E, SLOP (Falcons), F1H, P30, BMFA ½A, Mini- Vintage, HLG-CLG. Contact: G.Warburton 0113 2852947
March 1 Area Venues.	BMFA 2nd Area. F1H, P30 (Plugge), F1J (Plugge), BMFA 1/2A, CE (Plugge), HLG- CLG.	April 10-11 Orim, Israel	Passover Open. F1A F1B F1C F1P F1Q F1G F1H. World Cup event. Contact: Aviad Levy, POB 26261, Tel Aviv 61263, Israel, tel: +972 3 517 50 38, email: <a href="mailto:office@aeroclub.org.il">office@aeroclub.org.il</a> web: <a href="http://www.aeroclub.org.il">http://www.aeroclub.org.il</a>
March 5 Säkylän Pyhhäjärvä, Finland	Swedish Moose Cup. F1A F1B F1C F1P F1Q. World Cup event. Contact: Per Findahl, Bergvägen 8, 738 33 Norberg, Sweden, tel: +46-223 22957, email: <a href="mailto:per.findahl@gmail.com">per.findahl@gmail.com</a> web: <a href="http://norbergsfk.se/swedishcup">http://norbergsfk.se/swedishcup</a>	April 11-12 Oberkotzau, Germany	11 <sup>th</sup> : World Cup Oberkotzau, 12 <sup>th</sup> : 4th Föhrberg Cup. F1E. World Cup events. Contact: Peter Kuttler, Schneebergstrasse 26, 95145 Oberkotzau, Germany, tel: +49 160 945 164 69 / +49 928 66 187, email: <a href="mailto:peter-kuttler@web.de">peter-kuttler@web.de</a>
March 7-8 Säkylä, Pori, Finland	Bear Cup. F1A F1B F1C F1Q. World Cup event. Contact: Kim Henriksson, Ymmerstanmäki 9B, 02750 Espoo, Finland, tel: +358 44 7688 370, email: <a href="mailto:kim.henriksson@vahanen.com">kim.henriksson@vahanen.com</a> web: <a href="http://lennokkipojat.fi/">http://lennokkipojat.fi/</a>		

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Compiled and produced by Ian Kaynes, Paul Masterman and Michael Warren

## E36 BY PER GRUNNET.

Extracted from an article in Modelflyvenyt

When I was 11-12 years old at the end of the 1950s the Danish industry produced a very simple model "Baby" that could be built in a few hours model flight. Many of my friends also built the "Baby". We met and threw our models off a small escarpment and when they flew 20-25m we were lucky. It was a delight when one model was staying in the air longer than the others or flew furthest.

Recently I experienced the same thrill several times in a relatively short time when I was trying out my new E36 model! Each flight was a pleasure. The small electric motor is plenty big enough for that model to reach a nice height. When the motor stops after just 15 seconds, you have the excitement of will it be a good transition or stall, will the glide be in a thermal? Try it - it's easy and it's fun.

If you are used to building your models, you could build an E36 model in a very short time. If you have materials and equipment, you can build a simple model like "Super Pear 202" in less than 20 hours. Some things may make it take longer, for example, previously I had never covered a model with Microlite film covering film. It is a plastic film that has a layer of super thin heat-sensitive glue on the back and a carrier film that must be peeled off.

A minimum of materials and tools are needed. My first E36 model was made from balsa wood, white glue, a pair of bits 1 and 2 mm plywood, quick-drying epoxy, and the most part of a roll Microlite. The tool were a balsa knife, pins, sandpaper, a sheet iron and copious amounts of masking tape - masking tape is good as "extra fingers".

It is also cheap to make E36 models, particularly in comparison with the bought models. Electric motor, propeller, timer, ESC and two LiPo batteries can be purchased for under £100. If you do not have a charger for LiPo batteries you must also get one of those.

If you want to make the construction easier you can build a "Super Pearl 202" from the kit which the creator Don DeLoach sells online see [www.pearlfreeflight.com/Home\\_Page.html](http://www.pearlfreeflight.com/Home_Page.html) The short kit includes laser cut balsa and plywood parts and costs \$21 but you do have to make other simple balsa parts for yourself. The full size plan costs \$7.

### Flying E36 models

The idea of a free-flight models is that at the beginning you get it up in high altitude, so from there it can float freely. Powered models are taken aloft by a motor – for E36-models, an electric motor that gets power from a two-cell LiPo battery. It is necessary to trim the model to fly stably both in the climb and the glide.

The simplest way to get a free flight power model to fly stably in both climb and glide is to let it fly in right circles and giving it a little wash-in right wing, so as to ensure a greater angle than the left wing. This model is automatically right in the glide because the wash-in provides greater drag at glide speed. When the engine is running, the model will fly faster and the wash-in provides greater lift than drag. This means that the right wing lifts more than the left. The right wing will then be trying to force the model left, but since the model has the nose up and the engine running the model flies upwards in a spiral climb which is amazingly stable when you've got a trimmed model.

When the engine stops, the engine model loses speed, and right wing will give more drag than lift. Thus the model will automatically turn right and nose down to glide in right circles.

Should the turn become so tight that model enters a spiral dive, the lift of the right wing will increase when airspeed is increased and this opens out the spiral dive. If the glide circle is too wide or too tight it should be adjusted by tail tilt.

A typical E36 model like "Super Pearl" must have 2-3 mm wash-in for right inner panel. The left inner panel should be flat, and both tip panels should have 2-3 mm washout at the tip.

### Trimming in practice

For the first launch, the motor run should be approximately 2 seconds. Set the DT for one second after the engine is stopped (not simultaneously - it can strain the wings so they break). Try it sometimes without launching the model. Only when you feel comfortable and have found that everything works as it should, you can launch the model for real.

The model's body should be pointing diagonally up, with the nose up about 45 degrees and the wings tilted slightly down on the right side, so the model will fly to the right. Watch closely what happens during the three seconds before the DT. If the model flies upward in a right turn with the body at 45 degrees to the horizontal, then everything is OK. If not, then look in the previous section and find out what you need do. Remember also to assess whether you launched the model correctly. If you launch at an angle it will affect the climb pattern.

Make a few more starts with the 2 seconds run so you become comfortable with the model. Increase the motor run slowly by one or two seconds at a time. Also change the DT so that it continues to work 1 second after the motor stops. Continue to increase engine time until you are up to 9-10 seconds. If the climb is OK, you start to trim the glide. Start by letting the DT go 5-10 seconds after the engine stops. That is enough to determine whether the model for example, goes into a spiral dive in the glide.

Once you are sure that it is safe, you can incrementally increase the engine time to the maximum 15 seconds, with the glide time increased according to the conditions. Now start the fine tuning of both the climb and glide trim. You must also watch the transition – model must not stall once or twice before it goes into a consistent glide. If the model glides stably, the turn can be opened so a full circle takes between 20 and 30 seconds.

Now you are here you can fly in competition and have the great pleasure of being able to find thermals.

### The battery

Virtually all E36 flyers use a two-cell LiPo battery of 300mAh. It has plenty power for a flight and you one can get relatively light batteries with this capacity.

While trimming, when you use power for short motor times of 2 to 5 sec you will be able to make 6 or 8 flights with a 300mAh battery. However, note that the motor will run slower the more your battery is discharged. Change the battery for a fully charged one before it drops too far. Normally the ESC will disconnect power when the battery voltage falls below approximately 7.5V. The initial voltage of a fully charged two-cell LiPo battery is 8.4V.

If you forget to change the battery, you risk the ESC switching off power at an unfortunate time, so the model may stall in the ground from low altitude and risk damage.

For competition flights it is important to fly with a freshly charged battery on every flight, at least if you want to get the maximum height of your model.

Many flyers have a small, lightweight charger on the airfield, so they can recharge their batteries after each flight.

## Enjoy E36-flying

I hope this article on E36 models will get some more to try to build and fly these models. You will really get a lot of pleasure both building and flying.

Don DeLoach's "Super Pearl" is a good model to select. You can also choose to build my "El Filur" that you find in the attached drawing. The model is heavily inspired by "Super Pearl" but I just think my version is prettier! There is no full-size drawing or kit but all parts are easy to make.

The American magazine Model Aviation have building and flying instructions for "Super Pearl" at [www.modelaviation.com/superpearl](http://www.modelaviation.com/superpearl). There are lots of good tips, particularly if you build "Super Pearl".

## Motors

Here is what you need to know about the motor and its source of power for E36 models. Thick books can be written on the subject, but below is sufficient if you just want to build and fly E36.

The battery is the engine's power source. According to the rules you must use LiPo batteries with a maximum of two cells (rules allow also NiCad batteries, but no one uses them anymore). Battery capacity (energy) must be decided. The larger the capacity of the battery, the heavier it will normally be. Therefore, most people select batteries with a capacity of about 300 mAh (mAh stands for milli-Ampere-hours). It gives a reasonable relationship between the battery weight and the energy.

A battery of 300 mAh can - when it is fully charged - in theory supply a current of 300 milliamperes for one hour. When the hour is up, the battery will be completely discharged. Or it may deliver a current of 3 Amps for a tenth of an hour, that is 6 minutes. Or a current of 9 Amps for 2 minutes.

The electric motors usually used to power E36 draw a current of 8-9 Amps when they are fully loaded. As the maximum motor run is 15 seconds (plus the short time the motor is running before the model is launched) the battery does not use much of its energy before the engine stops. If we have a battery of 300mAh and a motor that draws 9A and an overall running time of 20 seconds, then we have used 50mAh of battery energy. In theory there should therefore be energy in the battery for a total of six left.

The motor is connected to the battery by the "ESC" (Electronic Speed Controller), which processes the power before it is sent to the engine. The electric motors used for E36 are of the "brushless" type and they can only work if they receive power in a series of pulses that ensures the creation of the appropriate electromagnetic field in the motor at the right time. This is what the ESC provides.

## Battery

A few times I have written "theoretical" in connection with LiPo battery. LiPo batteries are energy source "drama queens". They must be addressed carefully and with great respect if we want them to function optimally. With proper treatment their energy storage exceeds the other types of battery.

LiPo batteries cannot tolerate being discharged to less than about 50% of capacity. They are damaged so they cannot provide maximum energy. If a LiPo battery is fully discharged, it cannot be recharged and must be discarded (i.e. for destruction at the recycling centre). LiPo batteries can deliver large amounts of energy in a very short time. It is the property that makes them so good at free flight where we have very short engine run times. If, for example, we had a two minute

engine run, we would in the example above draw 300 mAh of battery capacity - the total capacity - and thus destroy the battery completely.

ESC is programmed to turn off the engine when about half of the battery's energy is used. This protects the battery from excessive discharge. A fully-charged two-cell battery has a voltage of about 8.4 volts. When the discharge voltage drops - and ESC one interrupts the flow when the voltage drops to approximately 7.5 volts.

There are a few more things you need to know about LiPo batteries:

LiPo batteries are really good to give energy, both when they are fully charged, and for instance when they are 75% charged. However, if for example, the battery has the capacity for three flights before it is so depleted that the ESC can stop further discharge, then you will pull most energy out of the battery in the first start. Slightly less in the next and further less in the third. You will therefore have the greatest height on the first use and least on the third.

LiPo batteries are affected by temperature. If the battery is five degrees hot, it will deliver energy more slowly than if it is twenty degrees. It is worth warming the battery in your pocket before you fly in cold weather.

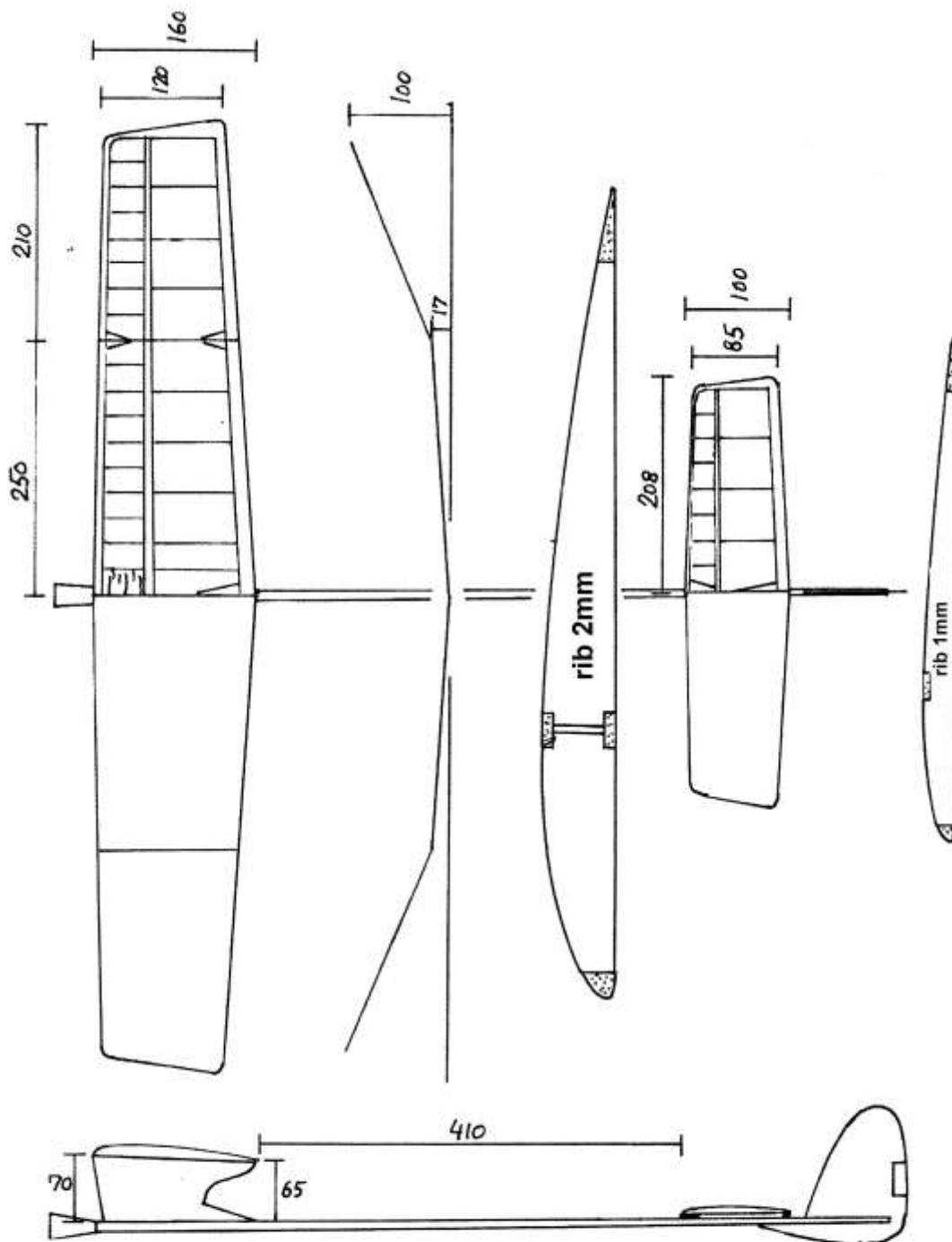
After a long time (i.e. over a week) not using your LiPo batteries, you discharge them to about half capacity. This keeps them in shape for a very long time. Many chargers offer this discharge function, or alternatively you can discharge them until the voltage is about 7.5 volts for a two-cell battery.

You may have heard that some batteries have a kind of memory. If repeatedly drained for example to 75%, the battery eventually "forgets" the residual capacity and believe that it has only 25% of its full capacity. That can be solved by discharging and charging 100% a few times, so it reminds the battery for its full capacity. This is NOT for LiPo batteries. They have no memory and they cannot tolerate being discharged below approximately 50% of capacity!

Charging LiPo batteries: It's easy to charge a single cell LiPo battery, but here we use only two-cell batteries, and so it is somewhat different. Each LiPo cell can be charged to about 4.2 volts. When this voltage is reached the cell is fully charged. In a two-cell battery, both cells are charged to 4.2 volts and the battery fully charged. It is, of course, elementary - but the mischievous LiPo cells do not necessarily charge equally quickly. There is a risk that one cell might be charged to 4.25 volts, while the other only reaches 4.15 volts when the charger says that the battery has reached 8.4 volt current.

On following charges the relationships become more skewed and gradually there is a risk that the "weak" cell becomes discharged so much that it is damaged. It can also result in damage to the "strong" cell when there is imbalance. Therefore, multi-cell LiPo batteries must always be charged "balanced". The batteries usually have two connectors - a power plug and a "balance connector". During charging, the charger all the time checks the voltage of the cells through the balance plug and compensates in the event of the voltage differences between the cells.

Finally: LiPo batteries must only be charged with the appropriate charger. There are examples of batteries having exploded and caused fires. So stay nearby when charging. For extra safety you can use a safety bag which you can buy in a hobby shop. Place the battery in the bag while it is being charged so, if anything happens, it reduces the damage.



**El Filur  
E36  
by Per Grunnet**

Span 910mm Length 880mm

**WEIGHTS**

Wing 32g

Fuselage 112g

Tailplane 6g

Total weight 150g including motor 24g, prop 9g, battery 25g

CG 69%

**WARPS**

right inner panel 2mm washin

left inner panel flat

both tips 2mm washout

Motor: AX-1206N

Prop Graupner 7.5"x4"

Battery 325mAh Thunder Power 70C 2-cell LiPo

Timer Texas Timers eMAX

abbreviation MM or WC for World Champs, etc) in year 2013 and 12 points were gained and 3 points lost from comparison with the other flyers.. The column headed "CH" indicates the number of places changes since the November 1 ranking (+ moved up, - moved down). Since there has only been one FIA FIB FIC competition in this period a number of changes are the result of scores in 2012 or early 2013 falling in value or dropping out of the total 2 years after they were held.

1	Alexander Andriukov	USA	259	4	HN14=52	MM14=56 SR14=0-2 KW13=5	EF14=54 WC13=13-1 EU13=9-4	CN14=41 HL13=10 NA13=4	SR13=40 MM13=6	KW14=20-2 PT13=5
2	Svetozar Gostojic	SRB	252	-1	MS14=51 SB13=35	SM14=50 SZ13=0-2	DZ14=50 PR14=0-6	MC14=41 ZA14=0-6	DZ13=39 PR13=30	



					SL13=26	EC14=20-3	BD13=16	MC13=15	SZ14=17-3
					WC13=11-1	SM13=7			
3	Evgeny Gorban	UKR	250	0	PT14=53	RB14=51	ZA14=42	NA14=29+9	KW14=29+8
					SA14=32	IC14=0-1	KZ14=0-2	HV14=31	MC14=26
					J114=27-1	EU13=12+14	PR14=26	LC14=20-1	AN14=17-1
					VS14=17-2	RH14=16-3	MM14=0+3		
4	Anatoli Ribchenkov	RUS	249	-2	MC14=52	HM14=51	IC14=51	AL13=38	NL14=34
					ZA14=32	MC13=0-2	PR14=0-3	NL13=0-4	AA13=27
					HN14=26-1	EA14=24	IC13=21	EL14=22-1	HG13=15
					PR13=13	SF13=10	HM13=11-2	KW13=2	NA13=2
					MM13=2	EU13=5-4			
5	Timur Useynov	RUS	236	-1	HG14=53	EC14=47	HM14=41	AM14=41	HI13=35
					EA14=35	ZM13=0-1	MK14=0-1	DK13=0-1	SE13=0-2
					AN13=0-3	AA13=0-3	EL14=0-5	HM13=30	KA14=30
					MK13=29	SL14=28	NL14=23	NO13=20	BD14=21-1
					SA14=13-4	CB13=9-1	SZ14=11-4	NL13=4	
6	Adam Krawiec	POL	221	1					
7	Bernd Silz	GER	215	1	10	Vin Morgan	AUS	202	1
8	Andriy Stefanchuk	UKR	212	-2	11	Radoje Blagojevic	SRB	201	1
9	Ismet Yurtseven	TUR	204	0	12	Gil Hagay	ISR	194	-2
								HN14=0-3	
F1E									
1	Frantisek Kanczok	POL	275	0	UE14=53	HB14=51	MR14=47	TC14=45	HA14=41
					UE13=38	TZ14=32	GC13=31	MR13=23+1	PC14=21-2
					GC14=20-1	TZ13=12-1	EC14=11-5	OB13=4	FB13=4
					WC13=5-1				
2	Florian Winker	GER	212	0	MR14=57+3	NS14=56+2	JEC14=52	MR13=36+4	OB13=7+2
					NS13=7	CP14=0-6	VL14=0-8	VL13=6	CP13=5
					FB13=2				
3	Peter Brocks	USA	188	0	KE14=50	CA14=50	CE14=40	MR13=30	WC13=14
					PE13=14-1	TE14=0-1	NS13=0-8	PM13=11-2	CA13=6
					KE13=3				
4	Stanislaw Kubit	POL	183	-1	GC14=52	TZ14=42	GC13=38	UE14=33	TZ13=30
					UE13=23	OB13=0-2	HA14=0-5	HB14=0-5	NS14=0-9
					MR13=0-14	PM13=23	EC14=22	NS13=17	MR14=19-2
					PE13=13-1	TC14=12-4	PC14=10-5	WC13=7-3	FB13=2
5	Jaromir Orel	CZE	176	2	9	Eugeniusz Slomka	POL	151	-1
6	Christian Winker	GER	170	-1	10	Nathan Laura	FRA	148	0
7	Robert Sifleet	USA	165	-1	11	Tom Ioerger	USA	141	-1
8	Vojtech Zima	CZE	157	2	12	Wieslaw Dziuba	POL	136	2

## CORRESPONDENCE

From Dave Hipperson.

*The Future for your Free Flight. (A letter to the FAI).*

I am lucky now to be in a position of complete impartiality on this subject. I have absolutely no 'axe to grind'. I have no 'favourite class' – certainly not that I am flying. However from my experiences in the past I cannot help but still have a deep passion for what you are all doing and hoping to do in the future. I really want it to continue and succeed.

Quite reasonably you are talking of changing the rules. Trying to reign in performances. Trying to fit things into the practical limits of venue size and space and at the same time encouraging more to participate. I have read the current proposals carefully – I can understand the standpoints but please remember each and everyone of them comes from a source with a vested interest. As it happens (rather uncharacteristically) I am the most impressed with what the BMFA has to say in as much as at least it consciously tries to avoid the pitfalls inherent in over reaction. It suggests a more metered approach over some time. However you all have to think carefully about actually **what you want to achieve**. Where do you really want to go. Think before you answer that! Be careful what you wish for. **Do you really want more people participating?** If the aim is to attract large handfuls of youngsters (18-25) you certainly are not going to do it by regressing to the 50s and flying lovely balsa and tissue with dt fuses burning under their tail planes. For me absolutely yummy including the smell but not for them. Hi-Tech is the only way forward. The higher tech. and the more electronic the better. But if the hoards came would you really welcome them? Somehow I doubt it.

Now lets look at how you have got where you are. At the end of the Sixties you had upped the flights to 7 and instigated the 30 second increment between flyoff rounds. However you were still flying in what I would call 'real' outdoor conditions. By that I mean the weather that comes along - whatever it was. Then around the beginning of the 80's things started to change when some Eastern Bloc counties (heavily sponsored by their bankrupt Communist regimes and in a last ditch attempt to impress the World) appeared with advanced composite materials. Not everyone – the '85 WC was still won by what we would now consider to be conventional 'balsa' models. 'He that was to be King' was left standing in the middle of a heap of broken Pirelli on that occasion but he wouldn't be the next time. The writing was on the wall. The decision to allow purchased finished airframes was brought about because you (The FAI) were first seduced by sympathy for this small impecunious but enormously talented group of eastern bloc flyers and then cornered when you realised you had allowed their business acumen to de-stabilise a hobby that had existed comfortably balanced for over half a century. Easy to see in hindsight – no one could have predicted the political future just then. The removal of the Iron Curtain and the Builder of the Model rule was therefore inevitable and is water under the bridge now so lets not dwell on that but look constructively at where it has taken you.

Now you have extremely expensive airframes being committed to essentially risky free flight procedures and scenarios in the interests of deciding a competitive result between persons that are in effect all flying the same 'model'. I agree that is a slight simplification and is meant as no insult to that tiny number that are actually creating their own machinery, but it paints the general picture.

So wind speed limits were reduced to lessen the chances of these precious pieces of equipment being lost or broken. You got bored with all those incremental stages in flyoffs and have for some time been heading towards the system that has worked perfectly for the SMAE and other organisations World wide for fifty years or more; that being, a short collection of flights and then one unlimited flyoff at a time when lift was at a minimum. You haven't quite got to it yet but you are close. Didn't it take you a long time?

So you have encouraged these wonderful high tech creations. For goodness sake don't turn your back on them now. In the world of professional mechanical sports such vast quantities of sponsorship money is involved that individuals and teams can easily accommodate drastic and regular rule changes. Free Flight competitors although clearly well heeled are nowhere nearly in this league. Neither are their suppliers. Model specification changes are dangerous even if gradually introduced. Actually that's almost worse. People can actually *plan* when they are going to stop and take up something else! A bit like telling the Taliban when you are going to pull out. Tactically a disaster.

You have had the three smaller classes for some time. Wonderful though they are – particularly FIG - if they were ever going to be suitable replacements then they would have taken over already. Don't go down the smaller model route just to fit in with these so called physical site limitations. Furthermore reign in this R/C business. It's a great asset for DTing but it creates another layer for possible, shall we say, cheating! If you let it go any further you will have to call what you do something other than Free Flight because it won't be. Some say it's inevitable. Well if it is then it's not the same game. Head it off at the pass **now**. Keep it for DT if you have to although I still believe there should be no link between flyer and model once launched in Free Flight but I appreciate the wonderous advantages of being able to DT on command.

Better address *how the competitions are flown*. The field rules. Be imaginative graduate them - make them different for domestic events, World Cup events and then Championship events. Bigger max (4mins as standard, longer if it's calm), make fewer flights, and fly in any wind speed or certainly a lot more wind than you do at present. There are few sports as three dimensional as yours create something that as well as rewarding the tech and the thermal detection also rewards the successful retrieve. Move it more towards the sport side – limit it to one model only. Remember you can always tweak or even completely reverse field rules.

Despite us having to approach this problem scientifically really it is impossible to ignore the intrinsic value of the FIA, B & C specifications and their place in contest Aeromodelling history. You have been flying one of those specs unchanged for - well as long as any of you have been alive! Well done! Even current FIB & C rules have obvious routes in the original specs, areas, wing loadings etc even if you have "Mickey Moused" the rubber weights and the power run lengths. Changes to the specifications – any changes - now you have made so many - could have them running for the hills. You haven't got long. The decisions you make next could make it or break it. Be careful – don't chuck it all away.

## 60<sup>TH</sup> KING ORANGE CONTEST, PALM BAY, FLORIDA, DEC 29 – 31

Report by Paul Masterman

It's been several years since we (Frannie and myself) visited the 'King Orange' but, although we're now based on the West Coast of the United States, we decided to take the perhaps idiotic decision to renew our acquaintanceship with this long-established event. Partly, it was our recall of attending the 50<sup>th</sup> contest which inspired us to make the journey. Also, it provided an opportunity to retrace the famous (infamous?) Route 66, which "runs from Chicago to LA". We were traveling in the reverse direction, of course, west to east, and

only took in the road from California, through Arizona, New Mexico and part of Texas, but at least we managed to see the 'half-way' café at Trent, but only to take a photograph, since it's closed for the season at the end of December! Much of the route is now either covered over by the Freeway Interstate 40, with the old road sometimes running in parallel, a short distance to the north or south. Also, where it still exists, it's sometimes closed with a barrier because the condition of the 'pavement' is so degraded that it's farm tractor territory rather than being 'roadworthy' (even though we were in a Jeep). The broken-down signs and abandoned 'gas' stations are now part of ancient history in this region.

Another reason for visiting the very hospitable group of free fliers who comprise the Florida Modelers Association was to offer moral support for an event with such a long-standing history. We were also aware that numbers participating have been tailing off in recent years. This appears to be the story of free flight competition almost everywhere, with the exception of FAI contests, perhaps. In fact, the trend continued this year, too, since at least one regularly attending family were prevented from travelling due to medical issues. Another well known Texan regular and his wife were unable to make it, being in the process of moving house on retirement. The final line-up of those registering proved to be 58, but with so many events on the schedule, numbers participating in each category were such that it's fairly easy to take first place, when it's also last place...

Given that domestic competitors can collect points in the 2014 Americas Cup contest, there will always be the usual suspects attending these events to supplement their scores. So one sees friends from Texas, Oklahoma, Louisiana and states along the Atlantic shore making the journey south, not least because it offers an escape from the cold and snows invading the northern regions, if only for a few days, at least. As well as more comfortable temperatures, the Palm Bay weather usually offers reasonable flying conditions, although rain can be a problem – as it was on the last day, New Year's Eve, this time. However, the field itself is much improved in recent years. Assiduous work cutting back the bushes and vast areas of grassland with a powerful tractor towing an even more powerful cutter now provides a wonderful area for free flight, shared only by other model aviation sectors – RC pattern, Pylon and Helicopters, each with dedicated sites, as well as Powered Paragliders. These latter guys are extremely helpful in discovering lost free flight aircraft when they disappear into what remains of the trees and bushes on the edges of the site. Several were found and returned to their owners the day after a wind shift resulted in stuff disappearing into inhospitable ground. The canals are also something of a hazard, though no-one appears to have had anything float away this time. Or be chewed by an alligator...

The three day contest offers the usual mix (for the USA) of FAI, AMA, NFFS Nostalgia, SAM's 'Old Timer' and Flying Aces events – each day with twenty on the calendar, together with an additional mass-launch for the Golliwock class, held in the middle day, which is popular across the nation. This year, the organizers went to the trouble of offering cooked food on the field at lunchtime, which proved to be a boon for all competitors. Having to disappear to the local Sub-Way for 'foot-longs' (only about three miles, but it takes time away from flying) earned the cooks a pat on the back. Nor was the cottage industry element absent. The change in the rules for 2015, which now discards the 'builder of the model' rule for AMA events – aligning with FAI, of course – resulted in Skyscraper flyer Jean Paillet bringing to the field a selection of his older, and now redundant, airframes. His comment was "buy to fly in 2015" and give the purchase money to the FMA. At \$25 a model, I'm not sure how much the benefactors made on the deal, but the box contents were well depleted by the end of the contest. It helps pay for tractor fuel, anyway.

Day's one and two started with significant mist, which curtailed those flying for scores early on, but that soon changed when the weather warmed up and a slight drift developed. The only difficulty, on the middle day, was a change in the

direction to westerly, towards the ocean, which resulted in some aircraft going AWOL in the trees and the residential areas. Nevertheless, the locals are very cooperative; one lady drove out to tell us there was an aircraft in the middle of the street. We advised her to move it to a safe location as someone would be out searching. She disappeared, but was back about ten minutes later with it in the back of her truck. Also of help, there were several local flyers who were not competing that day and operated as model retrievers. You're aware that they're out there when you realize that the retrieval beacon installed in your model is moving and coming in your direction.

After two days of very acceptable flying conditions, the weather gods turned against contestants on the last day, with rain arriving very early. Those who managed to start 'on the whistle' at 08:00 hrs got flights in before the sky became really soggy. When the reports from upwind advised that the weather was not going to change, the organizers took a straw poll of flyers and it was agreed that they would curtail the final day and make the final day's awards around lunchtime – in the rain. For those who were making a start for home, it made for driving more in daylight than using headlights.

So what does it take to increase attendance at these events? Maybe the reduced price of vehicle fuel will make a difference this year; the AMA's July National Championships may provide an indicator that things are looking up. Otherwise, we're still stuck with our attempts (particularly via the NFFS-related promotions and Science Olympiad activities) to encourage young people to put down their I-Pads and use their hands to construct a flying model aircraft. The STEAM project, being run by the Connections Academy – a virtual school with operations in Oregon, California and Indiana, among other states – may help us recruit flyers. But what is STEAM? Science, Technology, Engineering, Arts and Mathematics; an attempt to tempt students away from jobs in commerce and other disciplines towards work where they may need to get their hands dirty. Industry here is now finally recognizing that they're going to have a significant labour shortage within a few years if they don't get off their tails. The older engineers are retiring and there's no-one to replace them...

## Monday, 29<sup>th</sup>

### A Gas 7 flew

1	Gil Morris	480
2	Gerald Brown	471
3	Denny Dock	312

### Classic II 5 flew

1	Bob Hanford	598
2	Gerald Brown	478
3	Denny Dock	321

### Electric B 5 flew

1	Dale Elder	443
2	Duncan McBride	355
3	Jim Bradley	334

### FAC Embryo 5 flew

1	George White	196
2	Al Miltarian	181
3	Don DeCook	174

### Nos 1/4A 2 flew

1	Al Vollmer	319
2	Brian Malin	117

### FAC No-Cal 3 flew

1	Charlie Shepherd	131
2	Steve Bacon	100
3	Al Miltarian	61

### FAC Phantom Flash 6 flew

1	Tim Miller	186
2	Henry Hill	169
3	Al Miltarian	150

### F1H 3 flew

1	Jean Paillet	429
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### D Gas 3 flew

1	Gerald Brown	600
2	Charles Caton	390
3	Skeeter Surguine	342

### Nos A Gas 4 flew

1	Bob Hanford	480
2	Denny Dock	434
3	Larry Davidson	358

### HLG S/O 3 flew

1	Jim Juhl, Sr.	160
2	Skeeter Surguine	142
3	Dan McCall	86

### Thom/Gr Lch 3 flew

1	George White	
2	Rex Hinson	
3	Jack Coyle	

### Nos Rub Stk L 2 flew

1	Paul Masterman	463
2	Patrick Sullivan	141

### FAC 2 bit+1 5 flew

1	Don DeCook	340
2	Jack Coyle	120
3	George White	65

### FAC OT Rub Stk 2 flew

1	Tim Miller	
2	Gary Hunter	

### F1J 3 flew

1	Gil Morris	581
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2	Bob Hanford	283
3	Tom Bell	187
O.T. T Rep	1 flew	
OT Rub Stk L	1 flew	
F1G	1 flew	

## Tuesday 30<sup>th</sup>

### C Gas 3 flew

1	Charles Caton	1005
2	Gerald Brown	637
3	Dave Platt	81

### Classic III 4 flew

1	Bob Hanford	600
2	Skeeter Surguine	207
3	Gerald Brown	312

### Nos 1/2A Gas 3 flew

1	Larry Davidson	415
2	Denny Dock	318
3	Don DeCook	112

### Gollywock Mass Launch 7 fl

1	Don DeCook	
2	Bob Hanford	
3	Dan McCall	

### Moffett 2 flew

1	Bob Hanford	360
2	Gerald Brown	342

F1B	1 flew
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F1Q	1 flew
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Payload	1 flew
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Super D	1 flew
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FAC Simp. Scale	1 flew
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## Wednesday 31<sup>st</sup>

### P-30 J 3 flew

1	Derek Ballard	262
2	Timothy Mayes	236
3	Gregory Ballard	225

### P-30 2 flew

1	Paul Masterman	211
2	Skeeter Surguine	137

### FAC Rub Scale 3 flew

1	George White	127.5
2	Jack Coyle	114.7
3	Rex Hinson	94.2

### Classic I 2 flew

1	Gerald Brown	689
2	Bob Hanford	480

1/2A Gas	1 flew
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Mulvihill	1 flew
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Classic T/L	1 flew
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Early 1/2A	1 flew
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OT HLG Cat	1 flew
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Beat the Varterian	7 flew
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### TOP GUN

AMA (18)	
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Nos (10)	
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Classic (10)	
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2	Jean Paillet	527
3	Denny Dock	378
Brian Malin	126	
Duncan McBride	342	
Paul Masterman	262	

### Electric A 5 flew

1	Dale Elder	902
2	Duncan McBride	599
3	Drake Hooke	393

### Cat Glider 13 flew

1	Al Vollmer	360
2	Joe Juhl	207
3	Fran Masterman	171

### FAC Jet Cat SC 4 flew

1	Duncan McBride	73
2	Jack Coyle	72
3	Steve Bacon	71

### F1A 3 flew

1	Jody Miller	839
2	Denny Dock	274
3	Dick Bertrand	74

### F1C 2 flew

1	Gil Morris	1102
2	Charles Stiles	789

Jim Bradley	863
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Paul Masterman	701
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Denny Dock	226
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Joe Clawson	318
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Rex Hinson	130
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### Hi-Start Glider 3 flew

1	Dave Platt	81
2	Charlie Shepherd	58
3	Dan McCall	54

### E-36 2 flew

1	Drake Hooke	240
2	Duncan McBride	93

### B Gas 2 flew

1	Charles Caton	584
2	Skeeter Surguine	

Gil Morris	166
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Gerald Brown	534
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Jean Paillet	86
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Tom Bell	120
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Bob Whitney	66
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Al Vollmer	
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Charles Caton	1005
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Bob Hanford	480
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Gerald Brown	689
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## UK SUPPORTERS AT WORLD CHAMPS

F1A F1B F1C World Championships in Mongolia. Any people who would like to join the British team as supporters are asked to contact the team manager Mike Woodhouse as soon as possible Mike Woodhouse ([Mike@freeflightsupplies.co.uk](mailto:Mike@freeflightsupplies.co.uk) tel 01603 457754). It is likely that the travel will leave the UK on about July 24 and return on August 5.

## CIAM PROPOSALS

There was one inaccuracy in the report on CIAM proposals which were summarised in FFN last month: The proposal to reduce F1B motor from 30g to 25g was from Poland, not from Germany.