

Thames Valley Silent Flyers



LIFT

ISSUE 80

MARCH 2016

All about lipo balance connectors



Diary Dates

AGM minutes

IN THIS ISSUE



Annual Presentations



Indoor Chuckie



Giant Dornier

From the Slope



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TVSF Committee



Chairman	Graham Stallard (GS)	01344 481275
Vice Chairman & Safety Officer	Chris Moynihan (CM)	01753 889825
Secretary	Steve Elkin	01628 605510
Treasurer	Richard Thornton	01189 629168
Competitions Secretary	Colin Hutchinson	01252 654618
Membership Secretary	Ian Lancaster	01189 760523
Records Officer	Graham James	01932 226327
Newsletter Editor	Tony Ridler	01252 542720
Other contacts;		
(JP) John Price 01189 414766;	(TH) Trevor Hornby 01252 870677	
(PW) Peter Williams 01252 842120	(TM) Tony Morgan 01189 691027	

Edited by: Tony J Ridler, 109 Pierrefondes Avenue, Farnborough, Hants. GU14 8NZ

Email: tonyridler@sky.com, Phone: 01252542720, Mobile : 07989243599

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Front Cover
Tony Ridler's Minimoa on Rhew



Rear Cover
Martin Gilbert's Ventus on Rhew

Do you know someone who would like our club newsletter? To order a copy of the next issue (March 2016) send a cheque to Tony Ridler, 109 Pierrefondes Ave, Farnborough, Hants. GU14 8NZ for £4.00 which covers P&P. A few back issues are available @ £2, email Tony for availability. Make cheque's payable to Thames Valley Silent Flyers. Orders must be received by the cut off date. - **19th February 2016 for the March Publication.**

Editorial *By Tony Ridler*



Now winter is behind us we can get down to some serious flying.

Those winter projects which have been waiting for the "right" weather conditions for their maiden flight can get an airing .

At Blackbushe Model Air Show (*this year's has been cancelled due to the sale of the airfield*) I purchased a small electric glider kit from Balsa Cabin, it seemed so simple I could build it in a few hours however due to many commitments and some CBA the project has fallen behind. Hopefully I can finish it in time for Wales this year!

This is the first newsletter of 2016 so I will wish you all a Happy New Year, with no competitions having taken place this year I do not have any CD reports for you to analyse and think "what if". However the season will be well under way by the July issue so CD's get your reports to me.

I am short of material to include in this issue. This newsletter is the mouthpiece of the club members and with around 70 members I should be inundated with articles. If only half the membership submitted an item once every 5 years I would have more than 10 items for each issue. (*my usual moan over*).

I am looking forward to Wales as usual, particularly the promised drone racing in the back garden. After watching the Blue Peter programme I am sure with my advancing years this is one aeromodelling activity I must leave to the younger members.

Bill Cooke has done a fascinating article on servo's in this issue, I was surprised at what seemed to be cut and dried manufactures information particularly the Torque figures need to be taken with a pinch of salt. It is almost make your mind up time as the figures do not all start with a level playing field.

There is an amusing article from Vic Thomas on the trials and tribulations of a "free" skylark he has acquired.

Those of you preparing for an "A or B" qualification have a go at answering the BMFA mandatory questions on page 8. It would also be of benefit of the experienced pilots to brush up on their knowledge.

Well that's all for this issue, safe flying. Tony



Went around to a friend's house today. His wife was sat there with their new-born baby. She asked if I'd like to wind it. I thought that was a bit harsh so I gave it a dead leg instead.

I was driving this morning when I saw an RAC van parked up. The driver was sobbing uncontrollably and looked very miserable. I thought to myself "that guy's heading for a breakdown."

Chairman's Chat

By Graham Stallard



Already February and busy organising activities for this year. Among these is a combined slope day out on the second Thursday in May, the 12th. Members from the MVSA and WSRFC will be joining us or is that us them. As the potential venues are at each of the club sites it will be interesting to see how this works. The venues are White Sheet, Knap Hill, Martinsell, Mercury, Watership and Westbury. The format is as our other trips of enjoying a day's flying followed by an evening meal and maybe a pint in a nearby pub. More details nearer the time.

At the last committee meeting it was suggested we have a flat field aerobatic comp based on the slope aerobatic with electric powered models. This was put to the members at the February club meeting, who supported this. So we have a trial comp planned for Sunday 24th July with a reserve 25th September. Any fixed wing electric model is allowed. As this is a trial, there is only the kudos of winning to be gained. The lack of a strip will also influence what is practical to fly.

I know a number of club members are busy building, ranging from Depron foam creations, Top Model Ventus (Graham James, very nice) thru to wonders in laser cut ply and balsa (Clive). Do take some photos as you build and jot a few notes down. We would all like to see what and how you did it.

Whilst the recent weather has not been conducive to thermal flying, flying FPV drones has been possible. As these are a stabilised platform they make easy work of flying in windy and variable conditions. A number of club members own these machines and are at various stages of learning to fly. Lost model alarms are important, as once the drone has landed it's hard to see in the grass. Bright LED's are also essential to allow the spotter to keep track of the model. If you fancy seeing what's involved, pop down to the field Sunday morning to see how it's done.

My journey in full size gliding continues. I have started practicing the training manoeuvres such as stalling, drop wing stalls and spinning in a single seater, Grob 102. The spin recovery was a bit of a surprise to the pilot as the exit attitude was looking straight down, yikes. It was alright really just an unexpected vertical. The next transition is approaching with a couple of instructors suggesting getting cleared to fly a DiscusJ. The CFI has OK'd this once I have completed a few more flights in a Duo Discus. Recently an instructor wanted to do some aerobatics in our new K21. "Graham do you want to come along?" " Oh yes please (I think)". Two loops, a stall turn (the most significant manoeuvre for me), chandelle, another loop with hold in the invert (brill) followed by two knife edge circles at 4G (blimey 4G for what seemed minutes) concluding with a no brakes side slip approach, side slip in the hold off finally landing and rolling to the hanger, without wheel braking. One-day maybe, although first, there is a lot to learn for thermalling, cross country flying and field landings. Future fun includes flying a Duo Discus in the Pyrenees in Spain near Pamplona. With a bit of luck this will include thermal, slope and wave soaring, all in one trip.

The year is shaping up to be a busy one, slope days out, possible full-size trip(s), talks, Wales trips, comps, BBQ and a new comp. Plenty to enjoy gents. See you at the field or on slope.

Graham



Diary Dates

Date	Day	Item	Contact
01 March	Tuesday	Club Night - Speakers Afandi Darlington and Howard Torode on 'Sailplane Development'	
06 March	Sunday	Slope Aerobatics	JP
20 March	Sunday	Slope Cross Country	GS
03 April	Sunday	Slope Spring Spare	TBA
05 April	Tuesday	Club Night - Speaker is our own Mark Pitts on laser cutting.	
10 April	Sunday,	Scale Fly In - White Sheet	
16 -23 April	Sat - Sat	Wales week - Spring	CM
26 April	Tuesday	Mini Glider L 1	JP
29 April	Friday	eSoaring FNL 1	PW
03 May	Tuesday	Club Night - Speaker to be confirmed	
06 May	Friday	eSoaring FNL 2	PW
07/08 May	Sat/Sun	Aerotow - Ghost Squad' - Middle Wallop	
12 May	Thursday	Slope Day Out with MVSA and WSRFC	GS
13 May	Friday	eSoaring FNL 3	PW
20 May	Friday	eSoaring FNL 4	PW
22 May	Sunday	Scale Fly In - White Sheet	
24 May	Tuesday	Chuckie Free Flight outdoor	JP
28/29/30 May	Sat/Sun/Mon	BARCS Radio Glide	
03 June	Friday	eSoaring FNL 5	PW
07 June	Tuesday	Club Night - Speaker Graham Stallard on Wave soaring.	
10 June	Friday	eSoaring FNL 6	PW
14 June	Tuesday	Mini Glider L 2	JP
17 June	Friday	eSoaring FNL Spare	PW
24 June	Friday	eSoaring FNL Spare	PW
25 June	Saturday	F3K Open (national league)	MF
26 June	Sunday	eSoar Open and 2m	GS
05 July	Tuesday	Club Night - Speaker to be confirmed. Possibly how to do full size glider aerobatics.	

Changes to the BMFA achievement scheme

There are some significant changes within the scheme for 2016. The first of these is the introduction of three new achievements, which will specifically cater for aircraft that feature stabilisation technologies.

The new tests will be known as Basic Proficiency Certificates, and there will be one for Fixed Wing aircraft and another for Rotorcraft (helicopters and multirotors).

The third new achievement, will be the option for existing certificate holders of (FW or Rotorcraft) to gain an FPV Extension, where desired.

The new certificates don't change the underlying philosophy of the scheme, which is to provide goals and challenges to encourage flyers to improve, but will operate alongside the existing certificates, to acknowledge and support the way the current 'A' and 'B' tests are often used by clubs, and others, to assess member's capabilities.

Whether you take a BPC or a conventional 'A' cert depends entirely on what model you present for the test. If you present with a model that is <1 kg, you will take a BPC, (irrespective of whether it has stabilisation or not).

If you present with a model with stabilisation, you will take a BPC (irrespective of mass).

If you present with a model without stabilisation and >1kg, you will take an 'A'.

The second major change within the scheme has been stimulated by the raised profile that 'drones' have brought to model flying. Whether we like it or not, it has become apparent that many model flyers appear to be unaware of their legal responsibilities when operating model aircraft.

As a result of this, the ASRC has considered it prudent to introduce mandatory questions, relating to the legal considerations of operating model aircraft, to all Achievement Scheme tests. The rationale is that it is better to self-regulate, rather than have external regulation, which could well be unnecessarily restrictive, imposed upon US.

As a result, from March 31, 2016 onwards, all Achievement Scheme tests will require the candidate to correctly answer five legally based questions, in addition to those currently required for each of the individual tests. The questions will be chosen by the examiner, at the point of test. These five questions will be taken from a published list of 20 questions, which are included at the end of this article and will also be published shortly on the BMFA website. The 20 questions are all based on CAP 658 and a number of ANOs. — see how many of them you can answer without looking them up!

The final important development within the scheme is the publication of the new, dedicated, Achievement Scheme Handbook. For the first time, the new handbook allows all of the achievement scheme materials to appear in the same publication, and importantly, the guidance documents for each of the tests will accompany the relevant test schedule.

All achievement scheme materials have been removed from the main BMFA Handbook. The new Achievement Scheme Handbook, which will include all of the above developments, will be published very shortly in time for the coming season. [FULL ARTICLE IN BMFA News](#)→

BMFA Achievement Scheme

Mandatory legal questions for all future tests. Candidates must correctly answer five questions, chosen from the list below by the examiner during the test.

- Q(1) Who Regulates all civil flying activities over the United Kingdom, including model aircraft?
- Q(2) How are the rules and regulations for flying established in law by Parliament (statute)?
- Q(3) What does Article 137 of the ANO state?
- Q(4) What does Article 138 of the ANO state?
- Q(5) Who is legally responsible to ensure that a model is flown safely?
- Q (6) Which Civil Aviation Publication (CAP) relates specifically to the use of model aircraft, and for which specific purposes only?
- Q(7) According to CAP 658, which model aircraft are required to have an operating failsafe and what is the minimum setting? — three key points
- Q(8) What does Article 166 of the ANO say about the responsibilities of the person in charge of a small unmanned aircraft?
- Q(9) What does Article 166 of the ANO say about visual contact with small unmanned aircraft?
- Q(10) What does Article 166 of the AND say about small unmanned aircraft over 7Kg? — three key points
- Q(11) What does Article 166 of the ANO say about 'aerial work' for small unmanned aircraft?
- Q(12) How is a flight for the purpose of 'aerial work' defined?
- Q(13) How is 'a small unmanned surveillance aircraft' defined?
- Q(14) What are the separation requirements of Article 167 - for small unmanned surveillance aircraft - when operating over or within a congested area or organised open-air assembly of more than 1,000 persons?
- Q(15) What are the separation requirements of Article 167 - for small unmanned surveillance aircraft - in respect of any vessel, vehicle or structure which is not under the control of the person in charge of the aircraft?
- Q(16) Except during take-off and landing, what are the separation requirements of Article 167 - for small unmanned surveillance aircraft — excluding the person in charge of the aircraft or anyone under their control?
- Q(17) What must be obtained before any flight within controlled airspace or an ATZ?
- Q(18) CAA General Exemption E 4049 - permits FPV flight without a buddy box, but with a competent observer.
- (a) How must the competent observer monitor the flight and (b) What is the maximum mass of aircraft that may be flown under this exemption?
- Q(19) Who has legal responsibility for the safety of an FPV flight (a) conducted with a buddy box lead and (b) conducted without a buddy box lead?
- Q(20) According to CAP 658 what are the 8 'Only fly if' checks for an FPV flight of an aircraft over 3.5kg?

All about lipo balance connectors

By TJinTech

This is one of those subjects that just baffles many pilots, new or seasoned. Many see it as some magical device that does nothing but cramp their style. If you are one of these baffled folks or even if you think you have it figured out, read on for an explanation of both what they are and the differences between the various types.

What is a balance connector?

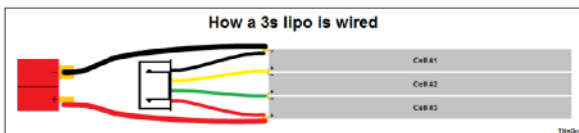
A balance connector is nothing more than a breakout connector for accessing all the individual cells contained in a lipo. This allows for the monitoring and manipulation of each cell individually.

Why are balance connectors needed?

Like everything in the world, no two things are exactly the same, and batteries are no different. When multiple batteries, or cells, are assembled into packs, those different differences can lead to imbalances within the pack. In most cases, like NiXX cells, this is not a problem due to the chemistry of the cells. But when using lithium based cells, these imbalances can damage the cells and in some extreme cases even result in a fire.

Looking at how lipos are wired

The best way to understand how something it put together is to take it apart. Well I don't have any lipos to take apart to show you but I can draw you a diagram to illustrate it.



As you can see this pack is composed of 3 cells wired in series. Then the main leads are connected to the outer most (-) and (+) tabs. The balance leads are connected at both the (-) and (+) of each cell. As such there will always be one more balance wire than the number of cells, in this case 4 wires for 3 cells.

Monitoring and manipulating each cell

Finally it's time to get down to the real reason for having the balance connector, the ability to monitor and manipulate each individual cell. This ability exists because there is a wire going to the (-) and (+) of each individual cell. As such you, or more often your charger, can use each pair to access a specific cell. For example below is the breakdown of cells (voltage) by colour in the above photo when using a volt meter.

Black -> Yellow = cell 1 (3.7v)	Black -> Green = cells 1 + 2 (7.4v)
Yellow -> Green = cell 2 (3.7v)	Yellow -> Red = cells 2 + 3 (7.4V)
Green -> Red = cell 3 (3.7v)	Black -> Red = cells 1 + 2 + 3 (11.1V)

When a lipo's balance connector is plugged into a lipo balancer, the balancer can both monitor the voltage of each cell and if need be, discharge any high cells in order to balance the pack.

Other uses for the balance connector

Some chargers only charge through the balance connector. Many cheap oem chargers do this but some nicer models will also allow for it. In this case the charger is both charging and balancing through the balance connector.

Sometimes there is a need for a connection to a battery and you don't want to use the main leads. In that case you could use the balance connector for a low current draw connection. For example lets say you have a camera setup on a bird. Instead of wiring the power for camera system into the main bird, you could connect a separate bec to the balance connector on the battery in order to power this separate system.

Charging one cell through the balance connector

Since the balance connector has access to each cell, it is possible to charge each cell individually. All that is needed is an adapter and a charger that can charge single cells.

In conclusion

As you can see balance connectors are not magical at all. They simply break out all the individual cells in a lipo so you or the charger can monitor and manipulate each individual cell.

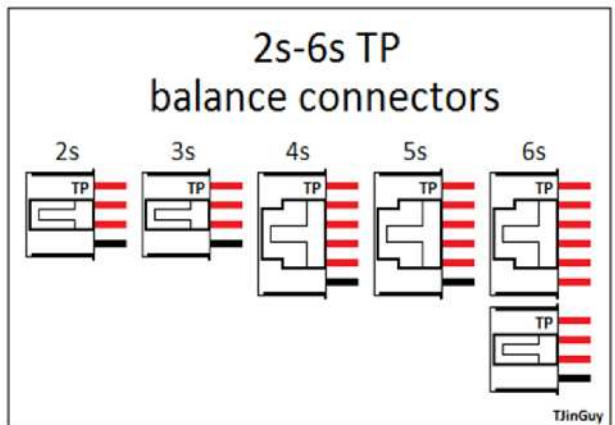
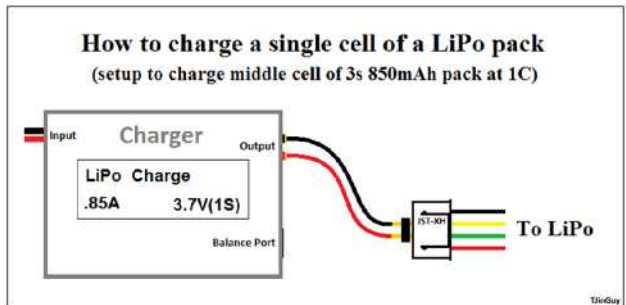
Explaining the differences between the various types

This is where balance connectors get irritating. Like cell phone chargers, battery companies seem to all have a proprietary balance connector on their lipos. What a waste if you ask me but that is just how it is. The good news, if there is such a thing, is that all balance connectors are attached to the same wires, they just arranged in different orders and ways.

The popular types

By my counting there are 3 popular balance connector types:
Thunder Power (TP)

Found on many high-end brands including Thunder Power, Flight Power, Outrage, Voltz, etc.
The pin spacing is 2mm.



All about lipo balance connectors.....cont.

JST-XH

Found on many model brand batteries including Align, E-Flite, E-Sky, Electrify, as well as many cheaper brands like Zippy, Turnigy, Mega Power, etc.

The pin spacing is .1in.

Hyperion (Polyquest) TP

Found mostly on Hyperion packs.

The pin spacing is .1in.

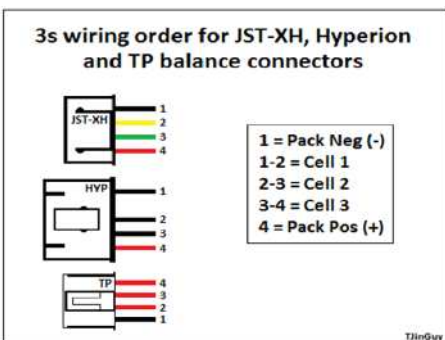
Other balance connectors

There are a couple of other connectors but they are rare. One is Kokam but they appear to be very similar to JST-XH connectors, in terms of layout and wire order, but use a slightly different connector. Another is FMA Cellpro. Like TP, they have 2 connectors and use one or the other or both depending on how many cells are in a pack. These also use 2mm spacing and have a similar pin to the TP connectors but use a different housing and wire layout.

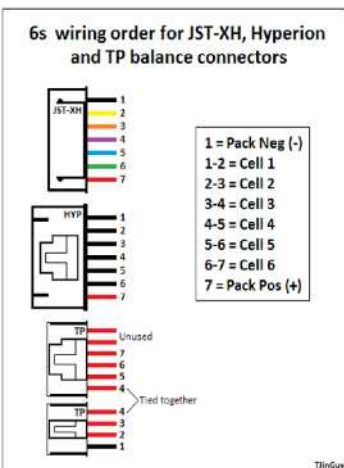
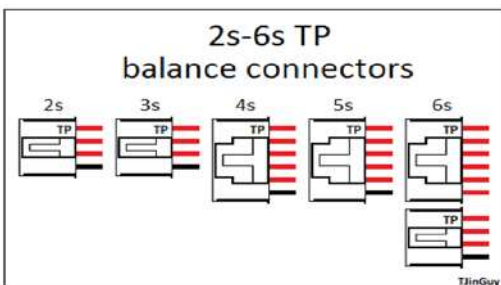
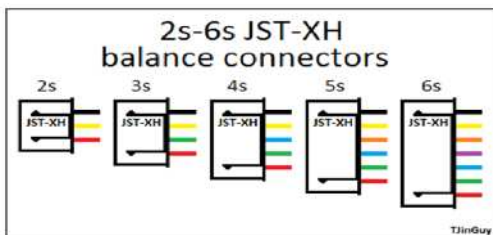
Wiring differences

Now that the connectors have been defined, it's time to talk about the wiring. Like I said before, the wires going to each balance connector are all the same, save for the colour. They all connect to the same places in each battery and all do the same thing.

I am not going to explain how every individual connector is wired up but instead I am going to two examples to get the basics across.



The above diagram shows how the 4 balance wires needed for a 3s pack are connected to each connector type.



This diagram shows how the 7 balance wires needed for a 6s pack are connected to each connector type.

JST-XH

JST-XH connectors are by far the simplest. All the wires are simply attached in order starting with Neg (-) at the top of the connector and finishing with Pos (+) at the bottom. This is the case for all 2s-6s balance connectors.

Hyperion (Polyquest)

Hyperion uses a 5-pin connector for 2s-4s, so in the case of 3s there is an unused pin in the connector. Unfortunately Hyperion fills the connectors by placing the Pos (+) at the bottom and then filling up from there. Then when it gets to the Neg (-) wire, it places it at the top. This causes the unused pins to be in the middle. In the case of 4s-6s batteries, all the pins in each connector are used making them essentially the same as JST-XH. In fact they can be interchanged.

Thunder Power (TP)

TP is the odd ball. In a way they are efficient because they only use 2 different connectors but this makes them more complicated when you get past 5s. For 2s-3s a 4-pin is used. A 3s pack uses all 4 pins and a 2s uses the first 3 and leaves the 4th unconnected. For 4s-5s the 6-pin is used. A 5s pack uses all 6 pins and a 4s uses the first 5 and leaves the 6th unconnected. For 6s-8s both a 4-pin and a 6-pin are used. An 8s pack uses all 10 pins (pins 4 of the first connector and pin 1 of the 6-pin connector are tied together), a 7s uses the first 9 and a 6s uses the first 8. Notice a trend? All TP connectors have all the wires in them but only connect the needed wires to the battery. The remaining wires are unused and are just along for the ride.

FMA Cellpro

A quick note on the Cellpro balance connector wiring. Cellpro used 2 connectors, a 5-pin and a 6-pin. The 5-pin is used for 2s-4s packs. The 6-pin is used for 5s packs. Then 2 connectors are used for larger packs. All connectors are filled by placing the Neg (-) wire at the bottom of the connector and filling up from there. Then when it gets to the Pos (+) wire, it places it at the top. This is similar to how Hyperion does it but just backwards, starting with Neg (-) at the bottom instead of the top.

In conclusion

As you can see all balance connectors use the same wires but just use them differently. As such you can rewire any pack to work with any balance connector.

Adapting and converting between the various types

Due to the fact that most of us are not going to use a single brand of lipo or that out lipo's very likely won't match the charger we use, we are forced to buy/make adapters.

Changing out the connector

Many times it is best to have just one type of connector on all of your batteries. Some do this by always buying the same brand of pack but what if you want to use different brands and still have the same connectors? The answer is to rewire the packs.

All about lipo balance connectors.....cont.

The actual rewiring of packs is not difficult and anyone with basic soldering skills can do it but there is snag, where do you get the connectors? Some places sell extra pigtail connectors like the ones they use but most of the time you have to find other sources. For example you can easily buy JST-XH pigtailed connectors off eBay.

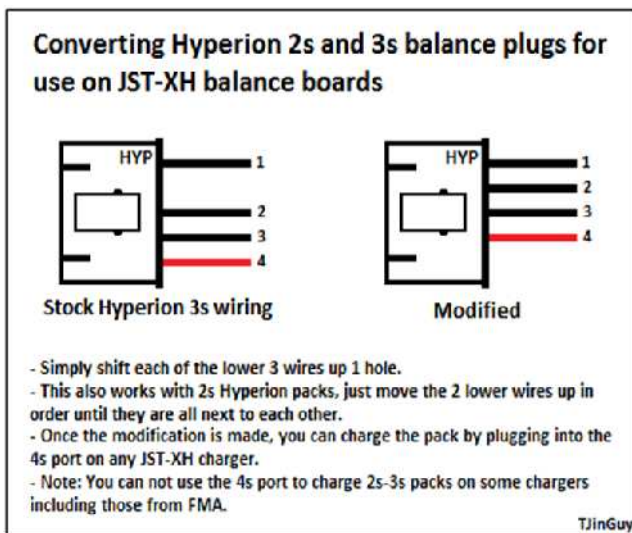
Modifying the connector

There are a couple of cases where a simple modification will allow a connector, or at least the wires and pins, to be used on a different type of balancer plug. I know of 2 of these so far, Hyperion -> JST-XH and Cellpro -> TP.

Hyperion battery -> JST-XH balancer

As it turns out most Hyperion and JST-XH use the same basic plug. They are both .1in spacing and have the same footprint. The only real difference is that the Hyperion plug has a catch for the connector clip. So a Hyperion connector will plug right into a JST-XH plug but we know they are not all wired the same. If you are using a 4s, 5s or 6s Hyperion pack then the connector and wiring is 100% compatible with any JST-XH balancer. If you are using a 2s or 3s pack then some modification is needed in the form of shifting some pins around so they are in the correct places.

Here is a diagram that shows what needs done.



It is that simple, really it is. Just take a tiny screw driver or knife blade and carefully push the catch down on the pin you want to move until it just pops. The pull the pin out, bend the catch back up with a knife and push it into the right hole. Just make sure you do the pins one at a time so you don't have a potential short or mess up the order of the pins.

This can be reversed but I very much doubt you would ever want to because JST-XH is so common, much more so than Hyperion.

Cellpro <-> TP

Both of these connectors use the same pins but the housings are different. So if you have the housing for the other type, you can take the pins out one at a time and put them into the other connector. Of course you will need to know the correct order for the pins but that

should be easy enough to figure out.

Making adapters

Most people that have mismatched balance connector/plug issues will just buy an adapter and that is just fine. The adapter may be in the form of a generic balance adapter board for their charger or it may be a specific single use adapter. Both will work fine and some even offer other, more advanced wiring options. But what if you would rather make your own? This is totally fine if you have the correct connectors but finding the correct connectors can be challenging.

Of course the bonus with making your own is that you can make whatever you want. Maybe you want a short balance lead? Or maybe a long balance lead? Or how about a parallel charging lead? Anything is possible given you have the parts and know how.

In conclusion

Just because your battery comes with a certain balance connector does not mean you are married to that type. There are always ways to adapt a battery to a charger whether you change the connector out for another type, make an adapter or even rewire the one that is on there. Find out what works best for you and make it work. ➔



On a lighter note

*Jonathan Ross has been accused of shoplifting a kitchen utensil from Tesco.
Ross says it was a whisk he was prepared to take.*

*My mate just hired an Eastern European cleaner, took her 15 hours to Hoover the house.
Turns out she was a Slovak.*

*I've been charged with murder for killing a man with sandpaper.
To be honest I only intended to rough him up a bit.*

*A mummy covered in chocolate and nuts has been discovered in Egypt .
Archaeologists believe it may be Pharaoh Rocher.....*

Annual Trophy and Award Presentations

Competition	Award name	1st	2nd	3rd
Indoor Chuck- ie	Picton Pot	Trevor Hornby	Roger Henderson	
Hand Launch F/F	TRL Cup	Mike Fantham	Colin Hutchinson	
Hand Launch R/C	Bill Hatton Me- morial	Colin Hutchinson	Mike Fantham	
100S	Moss End Plate	Graham James	Graham Stallard	
Open	Moss End Tro- phy	Colin Hutchinson	Martin Gilbert	
Electric Ther- mal	Electric Cup	Martin Gilbert	Colin Hutchinson	
Aerobatics	Kingsclere Cup	Colin Hutchinson	John Price	

Best F3J Per- formance	Findlay Trophy	Graham James		
Improver Award	Lift Cup	Andy Paterson		
Photo Contest	Wasserkuppe Cup	Roger Stacey		

Thermal Fri- day Night League	Moynihan Shield	Colin Hutchinson	Peter Williams	Graham James
Electric Friday Night League	Miles Shield	Peter Wood	Colin Hutchinson	Peter Williams
EFNL 2m		Paul Harvey		
Mini Glider League	The Binfield Bucket	Colin Hutchinson	Mike Fantham	John Price

Thermal All- Rounder	Chris James Memorial Tro- phy 1	Colin Hutchinson	Peter Williams	Graham James
Electric All- Rounder	Bracknell Bowl	Colin Hutchinson	Peter Williams	Martin Gilbert
TVSF All- Rounder	Kings Cup	Colin Hutchinson	Peter Williams	Trevor Hornby



Indoor Chuckie - Trevor Hornby



Hand Launch F/F - Mike Fantham



Hand Launch RC - Colin Hutchinson



Best F3J Performance - Graham James



Electric Thermal - Martin Gilbert



Aerobatics - Colin Hutchinson



Best Improver - Andy Paterson



Photo Contest - Roger Stacey



Thermal Friday Night League - Colin



Electric Friday Night League - Peter Wood



Thermal All-Rounder / Electric All-Rounder / and TVSF All-Rounder - Colin Hutchinson

Giant Dornier DO-X Flying Boat

A true scratch-built project, this 1/10-scale Dornier DO-X done up in 1929 Lufthansa livery was designed, built and piloted by Michael Bräuer. This impressive built-up plane has a 16-foot wingspan and weighs in at 132 pounds, and it's powered by twelve (12!) O.S. .62 4-strokes. Michael notes that he spent a year building this giant plane and that it has Futaba



servos, fiberglass engine cowls and retracts and that its top speed is 59mph. The sound those 12 powerplants make is incredible, and the video shows how well the model flies.

Thanks to RC Media World for taking this footage at the Hausen am Abis Flight Days Air-show in Switzerland .

Video at <https://youtu.be/vNpiD9ddKCI>



SERVOS

By Bill Cooke



Like most of us, I suspect, I select my servos on the basis of advice and experience. And, bigger model, bigger servo. I rather think that the manufacturers do it the same way. Certainly I've never heard of any data on the actual flying loads on servos though I guess that it would be possible, these days, to install a sensor and collect some data.

Up to this year my selections have worked pretty well. I had problems with two Hitec5125s which stopped centering consistently and an MKS servo where I exceeded the voltage specification but otherwise, no issues.

However, my problems with the Blanik servos failing has peaked my curiosity; 'how well do these servos meet their specifications'. So I made up a test rig and tested a few servos.

I'm not sure what the accuracy is, but I'll bet that its better than 10% though I'd be surprised if it was better than 5%

The first question though is 'what does the torque specified by the manufacturer mean'.

There's three torque specifications;

- Holding Torque which is the torque available to hold the servo arm in place once it has moved to the angle required by the signal from the Tx.
- Stall Torque which is the torque load at which the servo arm will be unable to move.
- Dynamic Torque which is the torque available to move the servo arm and at which all the specs for speed etc will be delivered.

According to Hyperion, Dynamic Torque is 50% of Holding Torque, while according to Turnigy, it's more like 65%.

Only Hyperion and Hyperflight stated which version of Torque was quoted (Holding Torque and Stall torque respectively) Everybody else simply said 'Torque' but an enquiry with Futaba, Turnigy and Hitec confirmed Holding Torque and given that, you can bet that everybody else is also quoting Holding Torque.

And the results are as follows;

Note all tests were at voltages between 5.6 and 5.8 volts so strictly the 6 volt spec was a little high.

Servo Tests													
All tests at 5.6 to 5.8 volts													
Make	Type	Holding Torque		Dynamic Torque								Torque	Pass
		Spec @ 6V	Spec @ 4.8V	Min Spec @ 6V	Torque	Pass	Torque	Pass	Torque	Pass	Torque		
Hitec-1	HS125	3.50	3	1.75	2.54	Y	2.99	Y	3.76	F			
Hitec-2	HS125	3.50	3	1.75	1.26	Y	2.34	Just	3.14	F			
Hitec-3	HS125	3.50	3	1.75	1.26	Y	2.34	Just	3.14	F			
Dymond	DS1800	7.00	-	3.50	2.03	Y	2.40	Y	3.01	F			
Turnigy	A55H	8.60	7	4.30	3.05	Y	3.59	Y	4.51	Y	5.44	Just	
Hyperion-1	DS095 FMD	9.00	8	4.50	2.54	Y	3.00	Just	3.76	F			
Hyperion-2	DS095 FMD	9.00	8	4.50	2.51	Y	3.10	Y	4.48	F			
Hyperion-3	DS095 FMD	9.00	8	4.50	2.51	Y	3.10	Y	4.48	F			
Hyperion-4	DS20-UMD	23.50	20.9	11.75			6.77	Y	7.18	F			
Hyperion-5	DS20-UMD	23.50	20.9	11.75			7.25	Y	9.09	Y	11.08	F	
MKS	6125	@5.5V 7.6	4.8	3.80	2.03	Y	2.40	Y	3.00	Just			
Futaba	3150	-	3.7	@4.8V 1.85	2.03	Y	2.40	Just+	3.01	F			
Futaba	3152	6.30	5	3.15	2.03	Y	2.40	Y	3.01	Y	3.63	Just	

Cont.....

The first Hitec HS125 was out of the elevator of the Blanik, its brother having failed (the left and right elevators are independent, each with their own servo).

As you can see, it far exceeded its spec. So I tested another two, both used. These weren't quite as good but still exceeded the spec. though on both these the gears were slipping at the higher torque.

The Dymond was out of the Blanik aileron, its brother also having failed. It failed badly. I queried this with the supplier who said that it was probably faulty which may be true given that its brother had failed but I'm not buying another to test.

The Turnigy A55H was one of two purchased to replace the Dymonds. It was, in fact, one that I had rejected because it 'twitched'. HobbyKing, the supplier immediately replaced it. Reject or not, it exceeded its spec.

The Hyperions were a real disappointment.

Unit 1, the DS095 wing servo, was from the rudder on my Supra and was about 3 years old. My recollection was that the spec. at the time of purchase was more in the region of the Hitec 125s but the current Hyperion datasheet clearly states '9Kg/cm' which was why I purchased the other two but these too failed despite being brand new.

Unit 4, the first of the DS20-UMDs came out of the retract on the Blanik its brother having failed. It too failed to achieve its spec. but again it may have been on the way to complete failure (and it, too, failed completely a few days later) so I purchased another but that too failed to meet its spec. despite being brand new.

The MKS was a few years old, but never used, and failed while the two Futabas both comfortably passed.

In respect of the servos that failed in the Blanik, none smelt so overheat doesn't appear to be the problem. Unfortunately I threw both the Dymond and Hitec servos away but I've still got both Hyperions from the retract and these are seized. They won't rotate even with a hefty pair of plyers.

So 'what is the mechanism of a servo failure' ? The tests above on the servos out of the Blanik seem to indicate a progressive failure which I don't understand. How can a servo fail progressively?

Shock loads can strip gears or fracture solder joints but that's instant. Overload causes overcurrent and excess heat which can breakdown the insulation but again the failure happens fairly quickly and it's obvious because it smells. So what would cause the torque to progressively reduce and ultimately fail and in the case of the Hyperions, seize up?

Anybody enlighten me?→

Bill Cooke.

Thames Valley Silent Flyers

Annual General Meeting Minutes

1st December 2015

8.00pm – 10.00pm

Attendance No. = 27

1) Apologies:- Graham James, Vic Thomas, Brian Jordon, Terry Weeks, Terry Antell, Ian Lancaster

2) Request for Any Other Business (AOB)

A request was made by the chairman, for any other business, there was no AOB received.

3) Minutes of 2014 AGM

The Minutes of the 2014 AGM, as published in the March 2015 issue of LIFT, were put to the floor as a true report of the 2014 AGM.

Proposed by Chris Moynihan – Seconded by Colin Hutchinson.

A vote was taken by the floor and the results were:-

For=25, Against=0, Abstention =2.

4) Matters Arising

There was no other matters arising.

5) Committee Reports:

Secretary:

Steve Elkin

The Secretary's Report

During the year, I have managed to attend all 12 of the monthly Club meetings, and all the committee meetings. This is my 3rd Year, in the position as the secretary, and it has been a very much an uneventful year as far as secretarying, with just the routine minute taking and report writing of the minutes. I think the members email address list seems to be more or less sorted out, as no one has shouted that they are not getting the club emails, so that's good. I'd like to think that I was one of the regular Sunday morning flyers, trying to get down the field every Sunday morning, weather permitting, along with Richard, Graham, and John Skinner, who we actual have not seen for a while, John, and I am happy to carry on in the secretary's position for 2016.

Membership Secretary:

Ian Lancaster

Membership Secretary's Report

Unfortunately Ian was unable to attend the meeting, so there was no report from him.

Competition Secretary: Colin Hutchinson

Competition. Secretary's report

The competitor's numbers were generally down on this year's comps, due to cancelled comps and bad weather, and the loss of our usual flying field. I'm looking forward to better weather and wind strengths next year, so we can have a full year's competition program. We could do with a few more competitors to take part in next year's comps so everybody is welcome to come along and have a go.

I would also like to thank all the CD's for this year, for all the work they have done, to keep the comps. running, and to carry on into next year.

Records and Assets Officer: Graham James

The Records Officer's report.

Unfortunately Graham could not attend the meeting, so there was no report from him.

Newsletter Editor: Tony Ridler

The Newsletter Editor.

Another year, my 5th, still a long way to go to equal Brian's time as editor.

The November issue was my 15th newsletter, time fly's when you are having fun. The past 15 copies have been quite enjoyable to build and publish apart from pressuring members for material. One of my regular contributors who likes to remain anonymous, feeds me with interesting items, look on the last page for his musings. LIFT 80, will include his latest contributions, which is of course if I am re-elected as TVSF "LIFT" editor.

Keep the articles coming in, I know I print the cut off date one week before printing but I cannot physically put the newsletter together in one week, I need you to feed me material right from the issue of the last copy.

All I need is some text and a few photos on any topic which the members find interesting. It could be the latest project, a visit to a model show or exhibition, the list is endless.

One thing I would like to know is how I can improve the newsletter; any advice would be welcome.

Well having completed five years, where did it go? Providing you vote for me to continue I am prepared to stand for at least another year.

Webmaster: Trevor Hornby

Webmasters Report

The Web site is carrying along as usual and this is my 4th year in the position, a few high lights are, the back issues of LIFT are being added to the site, thanks to Tony, the home page has been redesigned with links to bigger organizations, ie BMFA and some popular weather sites.

The forums are pretty active, with the "Who's up for Sloping" receiving 223,000 hits,

the club handbook has been updated, which was also added last year.

I would like to thank Keith and Paul Vale who do all the engineering on the site, in the back ground, and keep it running smoothly, and to Tony Ridler for photo updates.

If you have not looked at the web site recently, then please have a look around, because there is a lot of interesting information there.

Vice Chairman:

Chris Moynihan

Vice Chairman's Report

In the dual role of Vice Chairman and Safety Officer, I'm pleased to report an accident free year for the club, I've organized the 2 trips to Wales this year, which I think it would be fair to say, well off very well, and the Wales trips for 2016 are already booked to go.

I thank Graham James for CD'ing the comps. that I was unable to fulfill, It's been a very busy year for me on the BMFA front, with many meetings involving the new National Centre project.

I would like to thank Graham, our chairman, for the splendid work he has done, in securing a new flying field for the club, after losing Oldlands.

With the way the club is developing, with different types of models being flown by members and the attendant's figures dropping, maybe it's time to review the clubs competition structure.

I am pleased to carry on in the position of Vice Chairman for next year, and support Graham in his role as Chairman.

Chairman:

Graham Stallard

The Chairman's report.

The year has been a challenging one. At short notice we were advised we were going to lose our field, but thanks to Martin Slade, a new flying field has been acquired, Big Barn.

The weather has also affected club activities, delaying comps, changing trips out, extending cropping Big Barn. Hopefully next year will be more favorable.

Members have supported a number of activities including visits to Lasham Gliding Heritage Centre, Wyvern Gliding, Royal Aeronautical Society lectures, club day outs, competitions, BBQ and so on. All being well we will again enjoy an active year in 2016.

Finally, our club is fortunate to have a committee and club members who step up to make it happen. Please put your hands together to thank them.

6) Treasurer Report on Accounts: Richard Thornton

The Treasurers Report.

A copy of the yearly accounts sheet of distributed around the room, for everybody's attention, Richard reported that the club finances were more or less the same as the last four years, with a very small deficit, but he did enforce that the club was in the fortunate position that through Graham's sterling effects, it still had a rent free field to use, which saves a lot of club expenses.

To maintain the clubs financial position, the committee is proposing to put to the floor, an increase in the yearly club fees, of £2-00.

Richard thanked Peter Williams for his efforts in the roll of accounts examiner, and the time he spent checking over the necessary paperwork.

The proposal to accept the accounts as an accurate record was put to the floor, it was proposed by Martin Gilbert and seconded by Phil Hill.

A vote was taken, and the results were For=27, Against=0, Abstention=0

7) Elections of Officers for 2016

All the existing members on the committee agreed to carry on in their respective positions, for 2016.

It was put to the floor, asking if any other club members would like to step forward and take on a position on the committee, there was nobody who came forward.

Graham did emphasize that in the future, the club would be looking for other club members to step forward and “do their bit” on the committee.

The proposal was proposed by Phil Hill and seconded by Terry Peeling.

A vote was taken by the floor and the results were:-

For=27, Against=0, Abstention =0.

8) Appoint of an Accounts Examiner for 2016

Peter Woods offered to act as the Accounts Examiner for 2016.

This was proposed by Terry Peeling and seconded by Chris Moynihan.

A vote was taken by the floor and the results were:-

For=27, Against=0, Abstention =0.

9) Subscription for 2016

The Committee proposed that the yearly membership fees should be increased by £2.00 a year, to keep the clubs finance on an “even keel”. This is the first increase in a number of years.

The proposal was proposed by Roger Stacy and seconded by Peter Williams.

A vote was taken by the floor, and the results were:

For=27, Against=0, Abstention =0.

10) Proposals/Motions

Proposal – Aerobic contest – (Handbook 5.19, Aerobic Maneuver Table)

Background

We have been running to the existing set of manoeuvres for many years, some of which were considered had unbalanced K factors and also could benefit from a few new maneuvers. A small team of Trevor, John and Colin conducted a review and included other sources of slope aerobic maneuvers. Our proposal is the outcome. All of the existing rules of 5.19 in the handbook remain the same, this simply proposes a new table of the aerobics table with rationalised K factors

Proposal:

- 1/ That the “Aerobatic Manoeuvre Table” page 5-42 be replaced with a revised version, as following table :-
- 2/ It is also suggested that an annex be added with diagrams to better support the manoeuvres, in the club hand book.

There was a lively debate deliberating the pros and cons of the proposals by the club members. During the debate an amendment evolved suggesting a round of fixed manoeuvres be considered. The thinking being that as all competitors would be attempting the same manoeuvres a true comparison between pilots would emerge.

Acceptance of the following amendment was put to the floor for accepting as part of the initial proposal.

‘That the authors of the proposal should consider introducing a round of fixed maneuvers’.

Proposed by Chris Moynihan and seconded by Graham Stallard.

A vote was taken by the floor, and the results were:-

For=10, Against=3, Abstention =7.

The original proposal together with the above amendment was proposed by: Trevor Hornby Seconded: John Price, & Colin Hutchinson.

A vote was taken by the floor, and the results were:-

For=13, Against=0, Abstention =7.

Table:

K	MANOEUVRE	SUPPORTING NOTES
1.00	One Roll	
1.00	Reversal (Split S)	½ roll and ½ loop
1.00	1 x Inside Loop	
1.25	Immelmann	½ loop to invert then ½ roll
1.25	1 x Stall Turn	
1.25	Inverted Pass	½ roll to inverted, pass across slope and ½ roll
1.25	½ Cuban 8	5/8 loop, ½ roll, ¼ loop
1.25	½ Reverse Cuban	¼ loop, ½ roll, 5/8 loop
1.25	2 x Inside Loops	Concentric circles maintaining position
1.50	Three turn spin	Start pointing into wind and complete into wind
1.50	2 x Rolls	
1.50	Double Immelmann	½ loop, ½ roll, ½ loop, ½ roll (forms an oval)
1.50	Cuban 8	5/8 loop, ½ roll, ¼ loop, ½ roll, ¼ loop
1.50	Reverse Cuban 8	¼ loop, ½ roll, ¼ loop, ½ roll, 5/8 loop

Table Continued.

K	MANOEUVRE	SUPPORTING NOTES
1.50	3 x inside loops	Consecutive
1.50	A Triangular loop	
1.50	Alternate roll	360 in one direction then 360 in the other
1.50	Slow Axial roll	Height and roll rate to be maintained through manoeuvre and take about 5 secs
1.50	Square Loop	
1.75	Vertical 8	loop then bunt, circles top then bottom
1.75	Horizontal 8	$\frac{3}{4}$ inside Loop, 1 x outside loop, $\frac{1}{4}$ inside loop. Circles side by side same size
1.75	Downward figure 6	$\frac{1}{2}$ roll, $\frac{1}{4}$ loop to vert' down, $\frac{3}{4}$ loop to invert', $\frac{1}{2}$ roll
1.75	Inverted Eight	$\frac{1}{2}$ roll, turns 90 into wind then turns 360 opposite then changes direction to turn 270, then $\frac{1}{2}$ roll
1.75	3 x Rolls	
1.75	Rolling loop	$\frac{1}{2}$ roll, $\frac{1}{2}$ outside loop, $\frac{1}{2}$ roll $\frac{1}{2}$ loop
1.75	Four Point Roll	Hesitation each $\frac{1}{4}$ roll
1.75	Half Square loop with Half Rolls	$\frac{1}{2}$ roll, $\frac{1}{4}$ loop down, $\frac{1}{2}$ roll $\frac{1}{4}$ outside loop, $\frac{1}{2}$ roll
1.75	Sharks Tooth	Up at 45 deg, 2 or 4 point roll, tight radius to down, 2 of 4 point roll (down), $\frac{1}{4}$ loop
2.00	3 x outside loops	Starts from the top
2.00	8 Point Roll	Hesitate each 45 deg
2.00	4 Point Toss Roll	2 of 4 point roll, outside loop, 2 of 4 point roll
2.00	Top Hat	$\frac{1}{4}$ loop, $\frac{1}{2}$ roll, inverted on top, $\frac{1}{4}$ loop (down) $\frac{1}{2}$ roll, $\frac{1}{4}$ loop

11) Any Other Business

There was no AOB.

12) Date of Next AGM 6th December 2016 →

TVSF Branded Garments

Thames Valley Silent Flyers



Polo Shirt £11

Heavyweight Pique Polo Shirt



Sweat Shirt £12



Fleece £18



Baseball Cap £6.50

6 Panel
Struc-
tured
Brushed



Bronx Hat £7

Acrylic
Knitted Thin-
sulate With
Turn-Up



ORDERING

send you requirements to: Richard Thornton:

rickthornton@ntlworld.com

Or see him on club night.

Thames Valley Silent Flyers



SIZES	COLOURS
S : 36"	White
M : 38"-40"	Burgundy
L : 42"	Yellow
XL : 44"	Black
2XL : 46"-48"	Smoke / Grey
Head wear all one size.	Green
	Blue / Royal

Please note the club has to order a minimum of 3 items with every order so in order not to have to wait for your item, either order 3 items or have a chat with your mates and make up the order to 3 items.

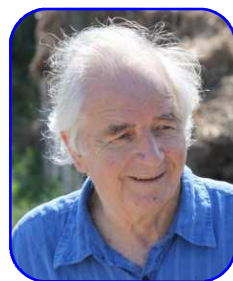


Always trust your instruments, son

Vol a voile par Chuck?

By Vic Thomas

The “event” took its usual form with the excited participants champing at the bit to get the Meeting business over so that they could transform the basic raw materials into models of exquisite beauty and winning performance. So much for anticipation.



Several of the usual stalwarts declined Trevor’s entreaties to take up his offer of said materials and in the event we only had seven contestants. However these souls strove mightily, with some-what mixed results, what’s new?

The designs seem to get more traditional as the years pass, perhaps the era of Barnes Wallace, Ron Warring et al, has passed us by. We had a pod and boom effort but in the event it was a lost cause. (Sorry Tony, you can always cross this bit out.) Otherwise convention ruled the roost but as I have noted before the producers of the most sawdust, (by sanding the wings to a semblance of section) were the most successful.



Trevor had done a fine job in setting out the field of play, thanks Trevor, and action commenced.

The first casualty was an arrival, I think during the practice session, by John Price’s model, which up to then had shown promise. Despite frequent applications of the wonder drug, Cyano, it never really recovered. Otherwise there was little damage, perhaps as a result of the more conventional designs. Colin Hutchinson came out the winner with Trevor second and Peter Williams third. Consistency seems to be the answer, Colin scored five “elevens” in his best of five. Despite an 8 and a 6 Tony’s pod and boom did not want to reach the end of the room.

After a quarter of an hour pause for re-trimming to a duration mode and clearing a space for anticipated duration flight patterns the second round commenced. The main casualty was with the stop watches which consistently refused to zero. I had a proper wind-up stop watch but the flight times were such that the graduations were too small to be read in the heat of the competition. Once again Colin scored consistently with a best flight of 6.6 secs, and his remaining flights over 4 secs. Running second and having overcome his earlier damage was John Price with slightly less consistency but averaging just under 4 secs a flight. Coming a comfortable third, well ahead of the rest, was Peter Williams, marginally behind John. These two sets of results make the overall winner, Colin Hutchinson, followed by John Price and Peter Williams.

These duration flights to the casual reader might seem trivial but on the night, with the constraints of walls and furniture, represent no mean achievements. As remarked earlier the effort by the balsa sanders paid off, as has been demonstrated over the years, pays off, particularly for the duration element.

Once again can I thank Colin, my computer operator, Vic Harris who struggled with the watches and Trevor who set it all up.



The results in detail

TVSF Indoor Chuckie 2016												Best 5 from 10	
No	DISTANCE	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Best 5	%
3	Colin Hutchinson	10	6	10	10	11	11	10	11	4	11	54	100%
1	Peter williams	9	9	10	7	5	6	9	10	10	9	48	89%
5	Trevor Hornby	6	10	3	8	10	10	4	10	8	5	48	89%
4	Graham James	5	8	9	4	7	10	10	9	9	9	47	87%
2	John Price	8	6	8	9	8	9	5	5	10	9	45	83%
7	Steve Elkin	4	9	8	9	9	9	9	9	8	3	45	83%
6	Tony Ridler	6	1	2	3	8	4	1	1	2	3	24	44%
Results													
	DURATION (Secs)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Best 5	%
3	Colin Hutchinson	6.6	5.5	2.8	4.8	2.0	2.5	2.3	2.7	4.7	2.6	24.4	100%
2	John Price	2.9	3.7	4.6	1.6	4.2	2.1	5.0	4.2	3.8	2.9	21.8	89%
1	Peter williams	3.3	3.1	1.6	3.5	2.4	2.2	4.3	2.5	4.1	2.8	18.3	75%
5	Trevor Hornby	2.9	2.7	2.8	1.6	3.3	3.1	3.6	3.1	3.3	1.2	16.4	67%
7	Steve Elkin	2.0	1.9	2.2	2.4	2.3	1.7	2.5	2.6	3.2	2.8	13.5	55%
4	Graham James	2.6	2.0	1.2	1.9	1.1	1.5	1.4	1.5	1.7	2.3	10.5	43%
6	Tony Ridler	1.0	1.9	1.5	1.6	1.4	1.5	1.3	1.3	1.2	1.6	8.1	33%
Results													
Distance +Duration		Dist	Durat	Best 5	Place								
Colin Hutchinson		100%	100%	200%	1								
John Price		83%	89%	172%	2								
Peter williams		89%	75%	164%	3								
Trevor Hornby		89%	67%	156%	4								
Steve Elkin		83%	55%	138%	5								
Graham James		87%	43%	130%	6								
Tony Ridler		44%	33%	77%	7								

A man is recovering from surgery when the Surgical Nurse appears and asks him how he is feeling. 'I'm O. K. But I didn't like the four letter-words the doctor used in surgery,' he answered. 'What did he say,' asked the nurse. 'Oops!'

Moe: 'My wife got me to believe in religion.' Joe: 'Really?' Moe: 'Yeah. Until I married her I didn't believe in Hell.'

After a particularly rough landing during thunderstorms in Memphis, a flight attendant on a Northwest flight announced, "Please take care when opening the overhead compartments because, after a landing like that, sure as hell everything has shifted."

That Gift Horse

By Vic Thomas



Those of you with phenomenal memories concerning my last bit relating to the last will and testament of the T21 construction which had taken, seemingly, half a lifetime may recall that my closing comments related to a gift from a past Member who was clearing out to move “oop” north. This was a nicely finished fuselage for a 1/5th scale Skylark built to a Mike Trew plan.

This has entertained me for the past six months, and probably will for the next year or so..

Having found the plan in the RC Model World archives it seemed a straightforward task to build the wings and tailplane. Well.... yes.

As it has transpired there are Skylarks and Skylarks. Ostensibly the plan and the fuselage are for a Mk 4 which differed from previous versions in several ways around the wing seating area. The canopy is considerably longer on the Mk 4 but the Mk 3F had a similarly longer canopy, and the fuselage is more oval in section. My fuselage seems to have been built from an earlier plan, probably 20 years ago which was somewhere between a Mk 3 and 4. It has a tapered triangular flat section immediately behind the wing as the Mk3 whereas the Mk 4 has a rounded fairing behind the wing. This may all sound very trivial but my modern plan is all Mk 4 which changes the wing seating completely. The Trew plan uses a Mick Charles wing fixing bracket on the main spar and a large dowel into the secondary spar. My idea is to use a more current system with wing bolts but retaining the dowel. I should have said that it is a three piece wing, a centre section with top and bottom airbrakes and tip panels carrying the ailerons. In passing I have used electric air brakes, magic!

The current position is a completed centre section but a complication is that the dowel interferes with the underside and requires a boxed out section to clear it. All fine and dandy but it may be susceptible to damage in the event of a wing tip landing.

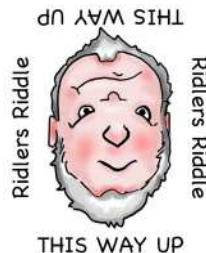
It is worth commenting on the glue I used. It was Modellers Glue by Deluxe Materials. In assembling the spars/ribs it was fine but its problems came to light when the dihedral break was set using ply braces. Overnight the carefully set dihedral had collapsed, E mail correspondence with Deluxe established that this glue is formulated to provide flexibility and sets to a gluey state. It seems that wherever any tension has to be resisted at a joint the glue is inappropriate. Two pots of it went in the bin.

I have yet got to establish the correct incidence because the Mk 3 has the trailing edge coinciding with the tapered flat section whilst the Mk 4 seems to sit lower with the fairing over it. Something for a wet day to resolve.

Another wet day will be needed to sort out the CG. In my 1/4 scale models, particularly the T21, the nose block is entirely lead set in resin and finished with car filler. In the Gift Horse the nose block is beautifully made but will have to be removed to accommodate the lead, and tow release. Hey ho. To be continued....→

TVSF Puzzle Corner

Model Aviation Quiz last issue - Answers



1. In the UK, what is the governing body of the model airplane hobby?

Civil Aviation Authority (CAA)

2. On arrival at the flying site, think S.W.E.E.T.S What do the letters stand for?

Sun, Wind, Eventualities, Emergencies, Transmitter Control, Site Rules

3. How many channels are required to fly a 'full house' thermal glider?

6 – Elevator, Rudder, Ailerons, Flaps

4. Propellers for RC aircraft generally are two-bladed (although can have as many as 3 or 4 blades) and are selected based on a pair of numbers. Common sizes are 10/6, 12/6, and 14/8. The first number designates the length of the prop. What is the meaning of the second number?

Pitch

5. How many wires are in a typical servo extension cable?

Three

6. What do the letters DMSS stand for?

Dual Modulation Spectrum System

7. What is differential?

Differential is moving the down going aileron less than the up going aileron.

8. In a Canard layout where would expect the CG to be located?

CG must be forward of the Neutral Point NP by a safety factor called the Static Margin

9. What is the height limiter setting for eSoaring competitions?

200 metres and 30 seconds

10. What do the letters Lipo stand for?

Lithium Ion Polymer

This issue teaser “Famous Aircraft in anagram form”

1. *a valid philandered* _____

2. *a meth cowslip* _____

3. *wise fads horrify* _____

4. *rarer haiku wench* _____

5. *reds halts don run* _____

Musings from my anonymous friend.

Many seek to uncover his true identity but only the editor knows, it is believed he is the wise man of Moss End.

A Lexus mechanic was removing a cylinder head from the motor of a LS460 when he spotted a well-known cardiologist in his shop. The cardiologist was there waiting for the service manager to come and take a look at his car when the mechanic shouted across the garage, "Hey Doc, want to take a look at this?"

The cardiologist, a bit surprised, walked over to where the mechanic was working. The mechanic straightened up, wiped his hands on a rag and asked, "So Doc, look at this engine. I opened its heart, took the valves out, repaired or replaced anything damaged, and then put everything back in, and when I finished, it worked just like new".

"So how is it that I make \$48,000 a year and you make \$1.7 million when you and I are doing basically the same work?"

The cardiologist paused, leaned over and whispered to the mechanic, "Try doing it with the engine running."

A cabbie picks up a Nun. She gets into the cab, and notices that the VERY handsome cab driver won't stop staring at her. She asks him why he is staring.

He replies: "I have a question to ask, but I don't want to offend you."

She answers, "My son, you cannot offend me. When you're as old as I am and have been a nun as long as I have, you get a chance to see and hear just about everything. I'm sure that there's nothing you could say or ask that I would find offensive."

"Well, I've always had a fantasy to have a nun kiss me."

She responds, "Well, let's see what we can do about that..."

- 1) You have to be single and
- 2) You must be Catholic."

The cab driver is very excited and says, "Yes, I'm single and Catholic!"

"OK" the nun says. "Pull into the next alley."

The nun fulfills his fantasy with a kiss that would make a hooker blush. But when they get back on the road, the cab driver starts crying.

"My dear child," said the nun, "why are you crying?"

"Forgive me, but I've sinned. I lied and I must confess, I'm married and I'm Jewish."

The nun says, "That's OK. My name is Kevin and I'm going to a Halloween party!"

That's all for this issue of LIFT, to be sure to get your articles to me early for the next issue.

