Newsletter

January 2018

A Happy New Year to you all.

We had what you may call a quiet Christmas this year. I so hate getting old and everything that accompanies those passing years. I had to miss the Christmas Quiz/Hotpot supper and that's a the first time since I've been with the Club.

Dave kindly sent me a report of the evening:-

Blackpool Club Quiz

21 Dec.2017

Every year before Christmas we have held the members quiz, this has gone on for over 30 years (I think some of the questions are still the same) it used to be a much bigger affair than it is now as years ago we had over 100 members.

This year over half the members showed up and those that could count got into teams of four and those that ran out of fingers managed between two and six team members and of course no matter what time you start someone is always late saying " I wasn't sure what time it started" but never mind Tim we will buy you a new watch next year. The questions ranged from aircraft to general knowledge, we had spot prizes for good answers even though they weren't right, at this point I would say a bit more practise is needed for anyone thinking of going on Mastermind.

Some of the easier questions foxed the boffins and the harder ones foxed everybody. After 41 questions (we had two no. 21s'), the Hotpot arrived and it was time for some teams to start bribing the QM who clearly rose to this and as usual started to make the rules up as we went along. The supper was excellent with plenty to go around. After the nosh this was where the bribery really showed as there was a maximum of 42 points to be won the winning team managed 45 to be clear winners. At this time the QM was a bit worse for wear but managed to award the prizes. A good night was had by all and thanks again for taking part. See you next year when the winners will be-----.

The AGM

January 2018

Paul announced that the Club has been granted temporary planning permission to extend our flying hours. This permission is effective for one year only and it is up to the members to ensure that any local people are not given the excuse to put in a complaint.

Effective this year from the 1st May through to 30th September, we will be allowed to fly on Tuesdays and Thursdays till 9pm at night. No I.C. Models from 8pm - after 8pm it will be electric only. Just a footnote to this, there are some extremely noisy high Kv electric models out there (high revving FunJets and EDFs' come to mind which can make an absolute racket) - just be sensible and fly the quiet electric models responsibly.

It's in your hands guys - if we have no complaints, we will be able to re-apply for permanent permission and this will so help you members who work and can only get to fly at night during the week.

One sad announcement concerned the passing of one of our long term members, Frank Snalem. Our condolences go to his family. Frank was always a character will be missed.

Mark Conlin, our Treasurer, stressed the need to attract new members into the Club. The membership has been falling which has necessitated a slight increase in the membership fee to £105 for this year. Fees paid before 31st January 2018 enjoy a £20 discount reducing that fee to £85. The BMFA have likewise increased their fee to £34 for a full member so full membership now costs £119 (if paid by 31st. January 2018). When I think that I pay more than double that figure for my Gymn membership, it's very much value for money.

Some of the members who came to the AGM

The AGM

January 2018

The new Club fees are:-

Senior full membership £105 less £20 for payment by 1st February 2018

Junior Membership (under 18s') and Social membership (non flying) £24

It was agreed that we would continue to offer half price membership fees to new members.

BMFA Fees

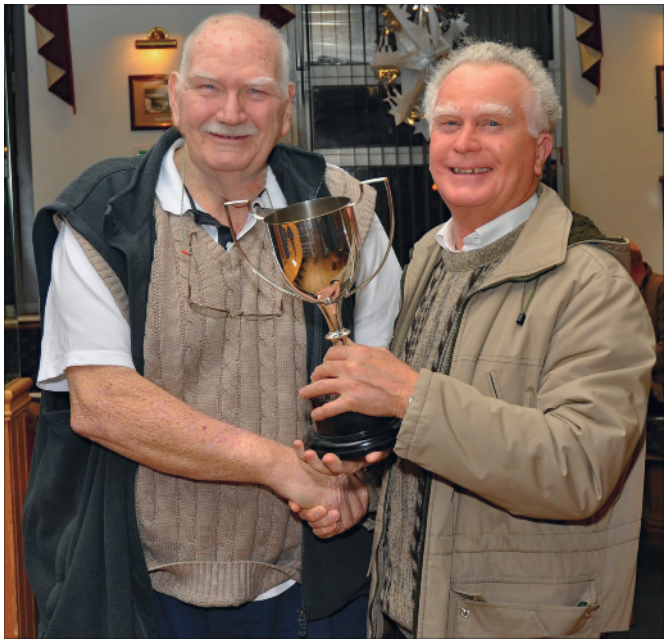
Senior members	£34
Juniors	£17
Family partner	£23
Family Junior	£13

A new committee was elected:-

Paul Cusworth	Chairman
Jason Reid	Vice Chairman and Safety Officer
Mark Conlin	Treasurer
Andy Harrison	Membership Secretary
Steve Warburton	Secretary
Peter Cathrow	Newsletter Editor
Alan Bates	Events Secretary

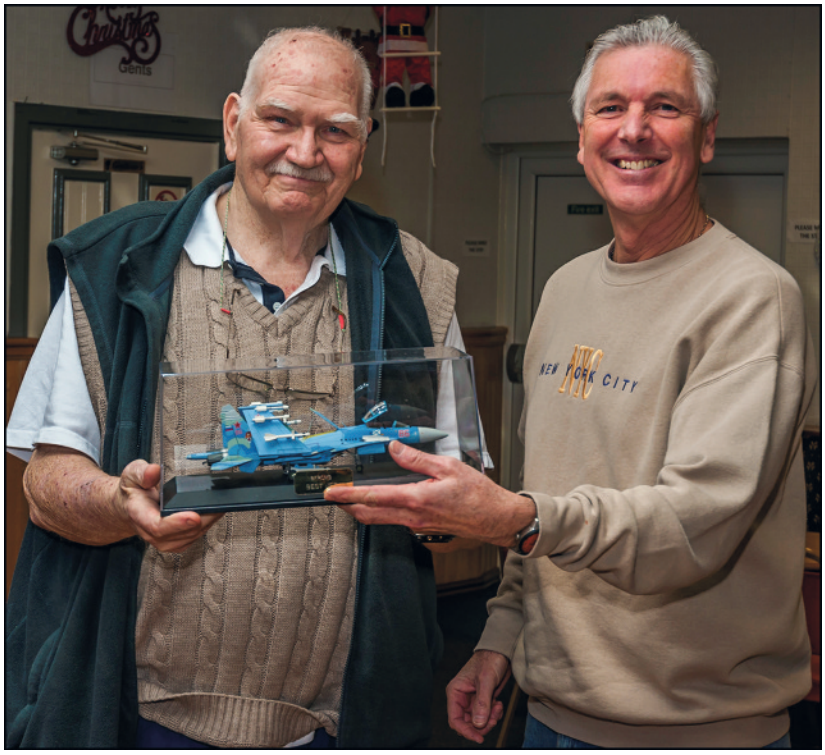
Committee Members: Justin Goldstone, Pete Eyres, John Prothero & Iain Whyham.

Awards

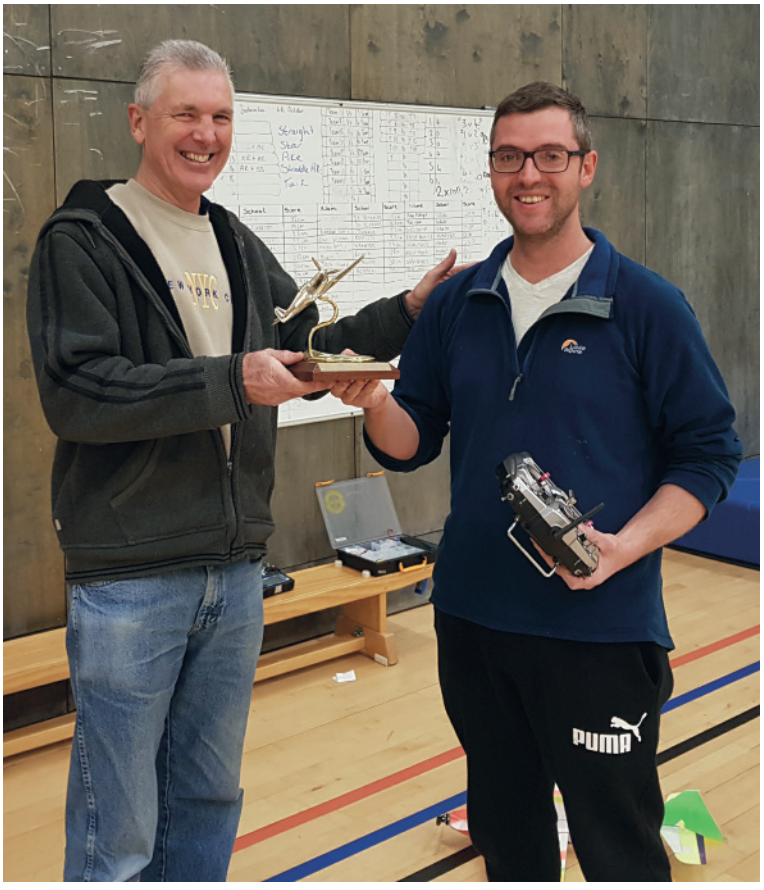


John Higgins being presented with the Stan Newton Trophy for his beautiful Cri-Cri model. It's a fantastic model and the very high standard of work that went into it was to be admired.

Jason receiving a very well deserved Scale Trophy for his excellent flying at the Shows and of course at the field.



Dave being presented with the Best Jet Trophy. I think Dave has so many 'Best Jets' in his stable, he deserves to keep that one for life!



Tony Ollerton being presented with the Jeff Garlick Trophy at the Indoor meeting on the 18th December.

A VIEW FROM THE HEDGE. (By Will Sparrow)

The winter solstice is past and the festive season is but a distant memory. Aah, the festive season: I often think that the true spirit of Christmas has been lost, and lost for ever. Someone called Bart Simpson (He's not a real person, you know, Will – Wise Old Owl) is reputed to have complained that we are all forgetting the true meaning of Christmas – the birth of Santa! In a famous toy shop in London's Regent Street one middle-aged woman was reportedly taken to hospital after a punch-up over something called Peppa Pig; some kind of toy, I presume. It's at times like these I despair of you humans…

The weather, since the start of winter, has been rotten. Wind and rain practically every day makes for a very miserable time for us small birds. Clinging to our twigs for dear life and having to endure wet feathers and sixteen hours of darkness a day really is not much fun, I can tell you. The real downside for me, however, is the lack of anything to view from the hedge as your members stay away from the hallowed turf in droves at the first sign of adverse conditions (Who can blame them – WOO). I can picture you all, back at your homes, beavering away on your winter building projects, gluing your fingers together with cyano and avoiding injury as you trim balsa and sand your latest latent masterpiece (get real, Will, at best they'll be applying a sticker or looking for their assembly screwdriver – Jim Sparrow).

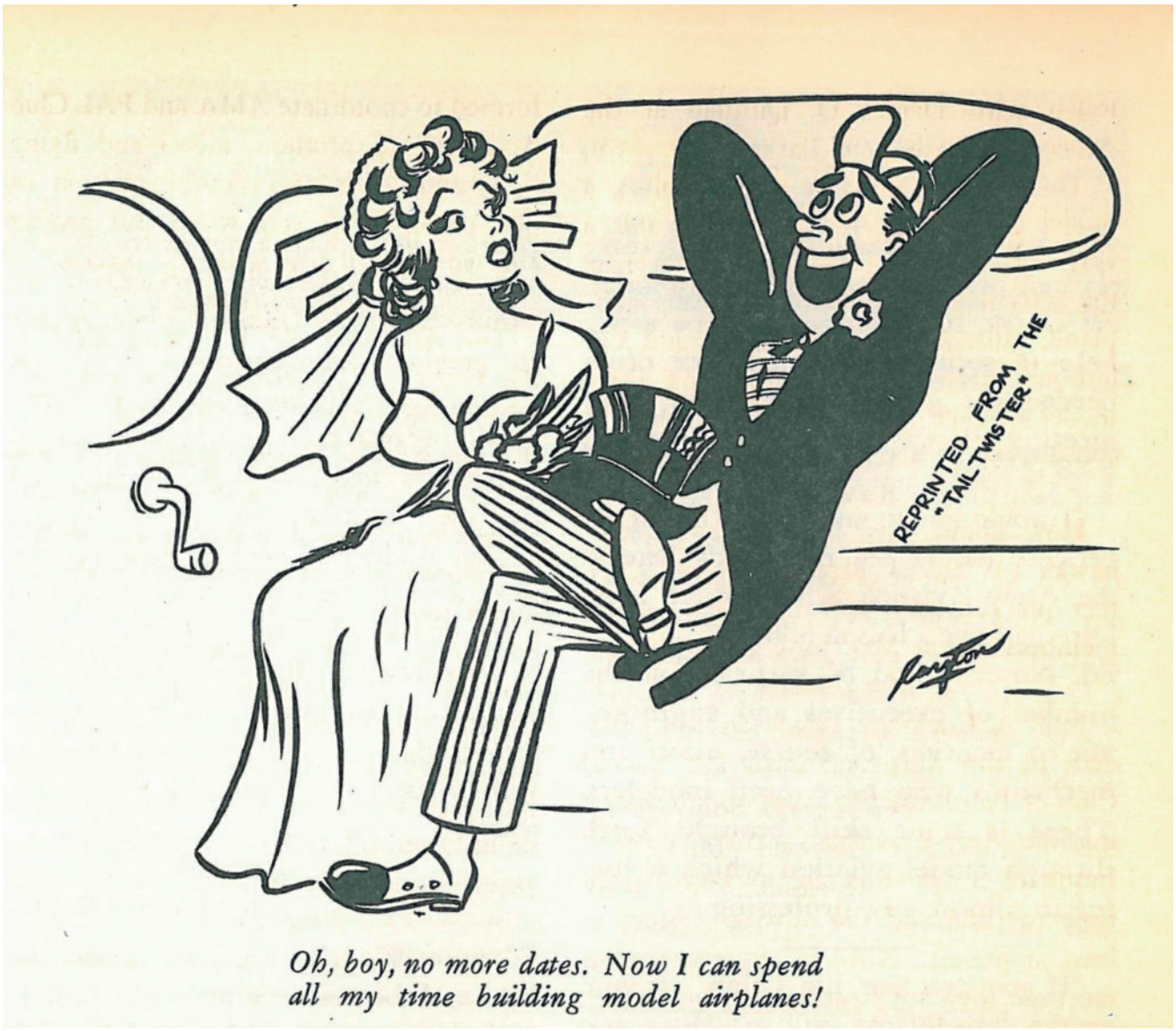
You do have some members, however, who are made of stern stuff; members for whom low temperatures are of no consequence and high winds are just a minor inconvenience. The start of winter saw me stiffen on my viewing twig as a couple of cars arrived in the car park and what looked like model aeroplanes were unloaded and assembled. These "aeroplanes" had a rather odd look to them… they looked more like large fish! I gave my mate, Jim, a nudge and the pair of us watched in growing disbelief as first one and then another of these apparitions took to the sky. "They're flying machines, but not as we know them, Jim." I exclaimed. Jim said nothing but stared fixedly ahead, beak open. How did they fly, I hear you ask. I have to be honest, not very well. If you can imagine a flying, inebriated haddock you will get a pretty fair picture of what lay before our eyes; a vision reinforced when one of the machines tried fin-hanging! The next day Jim asked if what we had seen really had taken place. I told him that it had but, hopefully, the memory would soon fade.

As the New Year nudged its way into January, the days were lengthening and, occasionally, a decent flying opportunity presented itself. One such opportunity coincided with a Sunday. A multitude of folk I have not seen before – it turned out that they were your new members – were being briefed on how to use the flying field. Not only did new members turn up but a sizable number of existing members swelled the ranks. Before long the air was buzzing with the roar of petrol engines and the hum of electric motors. The cold conditions did not favour some models fitted with glow motors which showed a marked reluctance to start and run reliably. To my well-tutored eye it was apparent that the long lay-off had had an effect on some flying skills and there were occasional hairy moments at the start of some flights and the odd case of the wrong switch being thrown. Model flying is a bit like riding a bike; you might get a

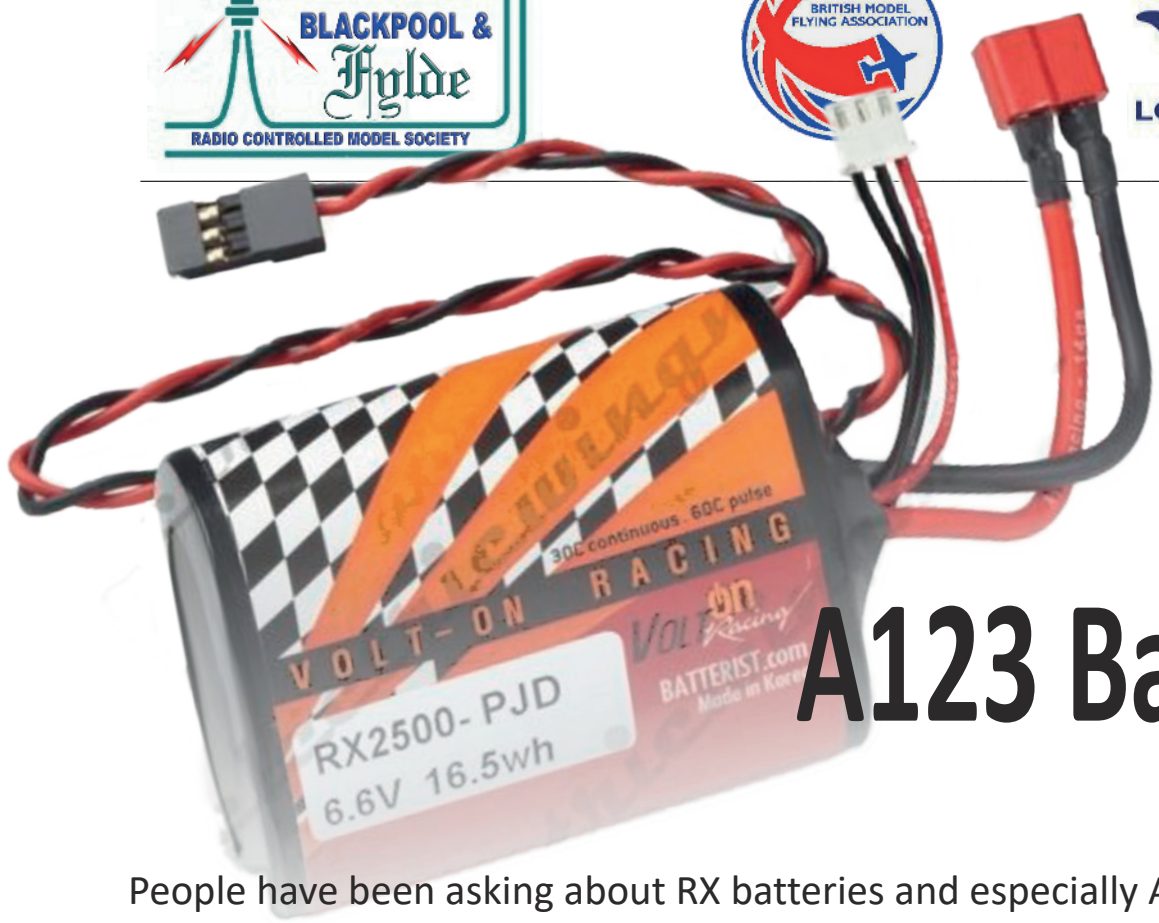
bit rusty but you never forget. The all-the-sticks-in-the-corners boys put on an impressive display with many wild manoeuvres, all of which I'm sure were deliberate!

It won't be long now before the first hints of spring herald the start of the flying season proper – January has a full hour of extra daylight at its end compared to its start - and my chums and I will be able to appreciate the beauty of the results of your winter labours as they take to the skies… let's hope that you managed to put all your stickers on straight and the correct way up!

WS



Oh, boy, no more dates. Now I can spend all my time building model airplanes!



A123 Batteries

By Dave Swarbrick

People have been asking about RX batteries and especially A123 or Li-Fe packs. And in some cases LiPo packs, unless you are using Hi power servos the LiPo should only be used with a voltage regulator, and this is a whole new ball game. Suffice to say that almost all modern servos will handle a Li-Fe pack, when these packs come straight off the charger they read 7.2 volts but quickly stabilise at 6.6—6.8 volts this is usually OK for most servos to handle, you can also use the Li-Fe packs on high power servos with a slight loss in power and hardly any in speed.

Like a LiPo, the A123 cells can be charged at 1C with no problem, the only thing you need is a charger capable of delivering the right charge rate, so if you have a 2100 Li-Fe pack charging at 2.1 volts will recharge it very quickly with no damage to the cells. These batteries are far superior to Ni-Mh cells as they tend not to lose charge over a period of time.

Some of the problems with Ni-Mhs' is that people try to charge them with a wall charger that only gives out 50mh charge and if you have 1900 Ni-Mh it will take 38 hours to fully charge, I know some of you charge your batteries before you go flying and usually leave them overnight thinking they will be charged the day after for flying, not so, over a few weeks the battery will slowly go down as you take out more than you put in with a wall charger, this often leads to a model

A123 Batteries Continued/...

Article by Dave Swarbrick

losing signal or at worst crashing, and when you get to the wreck the battery has usually recovered slightly and everything is working ok.

The main sources for Li-Fe batteries are Hobby King these are good batteries but only have soft outer (like a LiPo) Component Shop have proper A123 cells in a hard can as single or multiple cells, they will make them up how you want (two cells will be 6.6 Volts). Electric Wing Man also sells a range of A123 cells. Do not try to make them up yourself as the outer can is aluminium and soldering is not possible with irons we use. The best thing about A123 against LiPo batteries is that because of the chemical formula they do not catch fire as LiPos can.

I stopped using Ni-Hms' 10 years ago when I found that they were unreliable and lost too much capacity overnight all of them bought from the same place and same type would be so variable that I lost all confidence and have not used them since. A123 cells have performed perfectly in all my jets and some engine manufacturers are recommending them on their products.

A few years ago I wrote an article in the LMA journal and the RC Jet International on A123 cell and I think most of the jet boys and LMA flyers now use A123 cells.

Pros.

Excellent for Digital and high power servos

Does not lose charge over many months of not being used.

Average drain over 3 flights (digital Servos) 100—110 Mah.

Fast charge times.

Cons.

Slightly bulkier than other types.

Some makes not in hard case.

TX Set Up

January 2018

Article by Brian Holdsworth

Free mixers, as the name suggests, allow any channel to be linked to another channel with a user-defined mixing percentage - mixing a channel to itself may not be allowed. Conventionally, the source may be described as the Master and the driven channel as the Slave. These are generally linear mixers where the mixing percentage each way can be defined (positive or negative), and the mix effect increases proportionally to the Master movement away from centre. Usually, an offset value may also be defined which, effectively, moves the centre point of the mix away from the centre.

Some sets have one or more curve mixers where several intermediate points may be defined between the two extremes. These intermediate points may be at fixed percentages of Master travel or may be at user-definable positions. An option may be available to smooth the mixing between the points. While such mixers can provide considerable flexibility in tailoring responses, the difficulties of determining the required mixing values are considerable, so that these are rarely used in practice. A curve mixer may be used as a linear mixer by not defining the intermediate points, though fixed points may have to be set to suitable values to retain the linear progression.

Flap and some throttle mixers were covered earlier. Where available, it is generally more convenient to use defined options rather than free mixers, although a mixer may be appropriate if switched enabling is required.

Dual Elevator

By mixing the elevator channel to a spare channel with 100% mix percentage, dual elevators may be implemented. Obviously, the mixer should not be switched! Sometimes, elevator trim can be included, but if not available, the mixed channel sub-trim may be used for fine adjustments - trim adjustments should not be needed after initial flights and, as covered earlier, mechanical adjustments should be made to correct any errors with trim only used for fine corrections. Unless it is required to reverse the servo direction, a Y-lead from a single channel is generally adequate.

Dual Rudder

Similarly, the rudder channel may be mixed to a spare channel where twin rudders with separate servos are required. As above, a Y-Lead may be adequate. Nose wheel steering for retractable tricycle undercarriages is best disabled when retracted, which may be achieved by driving a dedicated servo via a mixer enabled by the switch used to operate

TX Set Up Continued/...

Article by Brian Holdsworth

the retracts. Thus, a twin-rudder model with retracts might use three servo channels.

Dual Aileron

This may be achieved using a spare channel as above, but all sets will have defined options.

Dual Throttle

For a multi-engine model, the throttle may be mixed to a spare channel(s) to drive the throttle servos separately, allowing for fine idle adjustments. Using a switch for the mixer would allow the first engine to be started and held at idle while the other(s) is started and tested separately. Note that it is legal requirement that the Fail-Safe is setup so that the engines are driven to idle, which would require all throttle channels to be driven to a suitable low value. For a twin-engine model, the Throttle Hold could be setup to hold the engine connected to the throttle channel at idle, while the other is driven by throttle stick movements. More engines would require additional mixers to drive the servos to suitable idle positions, requiring multiple switches.

In flight, switching an engine to idle would allow engine failure procedures to be practised reasonably safely - deliberately stopping an engine in flight could result in disaster if all does not go well! It could also allow the model to perform a cartwheel with one engine at full throttle and the other at idle, as was demonstrated by the Gloster Meteor at some early air shows, although the airframe stresses are considerable.

Electric power does not have starting and run-up requirements, so the only benefit of separate channels is any in-flight usage. Mismatched motor outputs would suggest problems requiring correction, rather than trying to equalise them by using different throttle settings. Powering the receiver and servos from paralleled ESC's, via a Y-Lead or separate servo channels, should not cause problems provided they are the same brand and capability, so producing the same BEC voltage.

Aileron-Aileron, Elevator-Elevator, Rudder-Rudder

By mixing a channel to itself with a negative mix value, dual rates may be implemented. This will be available as a more convenient switched option.

A different amount of aileron differential will be useful when flaperons are switched in

airbrakes etc. Many sets do not implement this option so that this mix may be helpful, requiring a mixer for each aileron channel enabled by the airbrake switch.

Rudder-Aileron

Most models generate a rolling response when rudder is applied. A high-wing configuration will roll with rudder and a low-wing may roll against rudder, while mid-wing designs could roll either way. This is inconvenient for aerobatics where such coupling can make corrections difficult. Wot-4 style models demonstrate considerable roll coupling and would benefit from the use of this mix. Applying a mix can oppose this effect so that it is largely corrected. The effects are non-linear and can vary considerably with airspeed and upright/inverted flight. There can also be differences in the required corrections between rudder usage in level and knife-edge flight so that a compromise may be needed as to which to optimise. Separate switched mixers could be used, requiring concentration to select the appropriate mix! Some sets require a mixer for each aileron channel, while others mix to both channels if the primary channel is driven.

Rudder-Elevator

Similarly, a pitching response may be evident when rudder is applied. Most aircraft have the rudder hinge line vertical with respect to the tail plane to minimise this coupling, but some rake the rudder back, for visual considerations and/or some up-elevator effect with rudder application.

In upright/inverted flight, a major cause is the turbulence generated by the resultant sideslip reducing the efficiency of one tail plane half. This produces a dive for most configurations by reducing the tail plane down force. The effect is reduced with an aft CG and may reverse for a very aft CG. If the model seems unsteady in pitch with reduced elevator response, this suggests that the effect is present.

In knife-edge flight, a model may pull towards or push away from the cockpit due to the complex effects of its interaction with the angled airflow. To achieve level flight, there is normally a small amount of up trim and, in knife-edge, this generates a pull to the cockpit. The undercarriage drag pushes away from the cockpit. The spiral airflow from the propeller has considerable effects and generally produces a left yaw (seen from above) from the P-effect and the spiral airflow over the tail plane - a small change in propeller pitch can make a significant difference. This gives a pull towards the cockpit

TX Set Up Continued/...

January 2018

Article by Brian Holdsworth

for right rudder and away for left. The angle of the propeller with respect to the oncoming airflow can cause blade stalling, which may produce a noticeable noise, especially if amplified by airframe resonance; such stalling changes or even reverses the P-effect. There are also some influences from the profile lines of the fuselage where, for example, the lower edge nearly parallel to the tail plane chord line tends to push away from the cockpit. Most aircraft have the upper and lower edges tapering towards the tail at similar angles to the tail plane reducing such effects. The combination of these effects can vary considerably with airspeed and power settings. A mix can be used to reduce the effects, and a switch may be desirable so that it is only applied during knife-edge flight.

Rudder-Throttle

Full rudder usage can generate considerable drag, which may cause problems in extreme aerobatics from excessive slowing. Mixing a small increase in throttle near full rudder throw would allow the speed to be maintained. This is a rather exotic mix, which will rarely be used.

It may be used on multi-engine types, with separate throttle channels as above, to aid turning when taxiing by a mixing a small increase in the outside throttle near full rudder throw. Such mixers should be switched and only used during low speed taxiing.

Aileron-Throttle

Full aileron usage can also generate considerable drag as above. Mixing a small increase in throttle near full aileron throw would allow the speed to be maintained. This is a rather exotic mix which will be rarely be used - some helicopters mix cyclic movements (aileron and elevator) to throttle to maintain head speed.

Aileron-Rudder

Aileron usage always generates some adverse yaw, which may become problematic for some configurations, especially high aspect ratios such as gliders or some low aspect ratio designs - the Piper Cub etc is particularly problematic. It may be compensated by aileron differential and/or mixing aileron to rudder to generate an opposing yawing force. This adverse yaw is a major reason for aerobatic aircraft using low-aspect ratios, since such corrections would be inappropriate since they increase the effect when inverted.

TX Set Up Continued/...

January 2018

Article by Brian Holdsworth

Aileron-Elevator, Elevator-Aileron, Elevator-Rudder, Elevator-Throttle
Applications for these mixes seem difficult to identify!

Throttle-Aileron
The spiral airflow from the propeller over the wing means that the roll trim changes slightly with throttle setting. For precision aerobatics, it may be helpful to use a small mix to compensate for this coupling, particularly at closed throttle.

Throttle-Elevator
Achieving a trim for a wide range of throttle settings can be difficult, with a vertical dive with throttle closed as in a square loop being a particular problem area, so that using a mix near closed throttle may be beneficial.

Sometimes, this mix is used instead of correcting the down thrust angle where excessive trim change with throttle setting is evident. However, this is a poor correction since it is airspeed-dependent when the effect is largely thrust-dependent.

An electric glider, especially if somewhat over-powered, can have a significant nose-up tendency at full power and mixing down elevator above about half throttle may be helpful. Correcting only with down thrust can produce an excessive initial nose-down tendency as the throttle is opened for a climb. As such gliders can become difficult to control if the climb angle becomes too great, it may be preferable to apply excessive down-elevator mix at full throttle so that a little up elevator is required to maintain the optimum climb angle. As with flap usage, it seems difficult to apply sufficient down elevator!

Throttle-Rudder
Achieving a trim for a wide range of throttle settings by adjusting side thrust can be difficult, so that using a mix near full throttle may be beneficial for fine-tuning. Sometimes, as above, this mix is used instead of side thrust where yawing with throttle setting is evident. However, this is a poor correction since it is airspeed-dependent when the cause is largely thrust-dependent so side thrust is a better option (typically two to three degrees).

Club Instructors

Jason Reid, John Higgins, Chris Vernon, Mark Conlin, Brian Holdsworth, Jim Sheldon, Paul Cusworth, Andy Harrison, Justin Goldstone & John Prothero.

Social Evenings

These will again be held at the Marton Institute, Oxford Square, Blackpool FY4 4DR. Come at around 7:30 for 8pm.

Wednesday 7th February	**Flight Sim Evening**
Thursday 8th March	**Chuck Glider Evening**
Wednesday 4th April	**Safety Talk and Open Forum.**

Upcoming Events/Shows

Sunday 25th March Large Model and Trade Show at Haydock Park

June 15th - 17th Weston Park Model Airshow

July 7th - 8th Cosford Large Model Airshow

August 11th - 12th Elvington Large Model Airshow

September 1st - 2nd Much Marcle Large Model Airshow

We will be organising (dependant on weather) BBQ's and events at our flying site. I will advise you through these newsletters closer to the time of those events.

In Conclusion

January 2018

This month, my hangar took some unexpected additions and one reduction.

The reduction concerned my lovely Wiggo. It was just too big to carry in my small car. It would just fit in the Jazz but my latest car is just that bit too small. I've handed it on to Steve Warburton who drives that large Volvo estate. I sincerely hope he has many happy flying hours it.

An old flying buddy visited me and said that he had given up flying. I purchased from him for a very small sum of money a slightly battered WOT4, a really nice E Flite Pulse (I saw this one doing it's maiden flight many years ago), a Cermark Banshee E 3D powered by an AXI motor controlled by an 80 amp ESC and a model I so love, the Multiplex Easy Glider. I also have from him a couple of deltas one is the Multiplex Twin Jet.

Those Easy Gliders are such incredible models - they can be persuaded to do really elegant aerobatics and yet can fly very gently - depends how the mood takes you. I lost my first one of these when it picked up a particularly powerful thermal. I wish Jason had been with me on that occasion because he saved my Spectra when I did exactly the same thing at the field the year before last. He coaxed it out of that thermal when it was almost invisible to my ageing eyes.

I guess that's it for this month - I wish you all happy and safe flying. If you haven't yet paid your subs, try to get it sorted before the 1st February and save yourselves £20.

Do also remember that if you haven't renewed, you cannot fly.

Can one of you let me have a picture of one of those 3D printed pilots please.

Thanks to all you gentlemen who kindly contributed to this issue of your Newsletter. Bye for now.