

# Newsletter

July 2019

There always seems to be something happening at this Club. It makes a newsletter so easy to put together. This month it has been the BMFA Scale Competition and I did get there if only for an hour or two.

The day was rather overcast and there was quite a 20 MPH cross wind making things 'interesting' for those competing. It was a little surprising that, considering the high profile of this event, that there were so few entries.

Notwithstanding that, one of those entries was none other than our own John Higgins campaigning his immaculate Corby Starlet.



I can't remember how many times I've photographed this model but I never get tired at looking at its fascinating lines. It certainly has a unique style. John told me that this was a qualifying competition to select a team for the world scale championships.

John came a very creditable second - congratulations.





# *The Other Contenders*

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*These Pictures kindly supplied by Jason*

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## *The Score Sheet*

*These pictures kindly supplied by Jason*

NUMBER	NAME	A/C	ROUND 1	ROUND 2	ROUND 3	TOTAL	PARTIALS
1	A. GLOVER	RV 4	1634	1678		3312	(1)
2	S. JACKSON	SOPHIE STRUTTER	817	962	SHOULD HAVE STAYED HOME!	1779	
3	BRIAN NOOD	RU 4	1447	1468		2915	
4	A. BOUWMAN	JUNG-MANN	1487	1525		3012	
5	J HIGGINS	STARLET	1599.5	1594		3193.5	(52)
6	L. SMALLY	ME 108	1548	1566.5		3114.5	(3)
7	K. FEAR	MOTH MINOR	1449.5	1390.5		2840	



*John Higgins being congratulated for Second place*

## A VIEW FROM THE HEDGE.



(By Will Sparrow)

July 2019

Sparrows are essentially optimistic little birds but the current spell of bad weather has provoked more than a few moans (you ought to try sitting on lumpy eggs in a soggy nest and see how you like it! – Gill Sparrow). Since there has been precious little model aviation to view, little groups inevitably congregate to share and amplify their moans: climate change seems very popular at the moment. I keep telling them not to confuse weather with climate change but I get the feeling that they are in no mood to listen. Your scientists have established that climate change is a man-made reality but a few folk are still sceptical. Similarly, there are a few of you around who continue to believe that the earth is flat (you mean it isn't? – Jim Sparrow). There is an ever-increasing mood afoot to reduce the country's carbon footprint. The Wise Old Owl reckons that whatever we do in this tiny little island, off the coast of Europe, will be of small beer when compared to what is happening in the rest of the world. He could see that this news made me glum, so he flung out an optimistic crumb...

By all accounts, Norway has resolved to convert folk to change from their petrol and diesel cars to electric cars. The big snag is that electric cars are much more expensive than conventional cars. The Norwegian government decided to even things up a bit. Electric cars have no VAT and no road tax so it is now actually cheaper, for most people, to have an electric car. Norway has cheap, plentiful electricity and a small population (unlike this country!).

The Owl's tale did not end there. He went on to say that your government was in the process of instigating a Norway-style strategy designed to apply to model aeroplanes. Engines over 10cc were to have extra levies applied to them and large petrol engines were to have 100% import tariffs imposed and as for gas-guzzling turbines... So much for the stick, now the carrot. Electric models were to be VAT-free and a government subsidy was set to reduce the price of Lipos by half! Pensioner modellers would be eligible for free battery chargers and free training would be given so they would know which buttons to press.

All this will totally change the model-flying scene. I remember my great-grand-pappy sparrow telling me how that, once upon a time, the heady scent of ether could be inhaled across the flying fields of England, and burnt nitromethane and castor oil were enough to send the senses reeling. If you are at all nostalgic, my advice is to buy as many bits of i/c kit as you can, covet and savour them. Remember, they were the future once...





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## A VIEW FROM THE HEDGE Continued..

Just as happened at Camp Granada (What's he on about? – JS) a really good day arrived one Tuesday in mid June. The afternoon was warm and sunny with a light-ish breeze coming from due west, right down the centre of the strip: as usual, there was nobody there to take advantage of the conditions: I dozed on my twig. I roused as a single car made its way down the track of dreams. A canny member had been waiting for such a day to test-fly an unusual, large-scale electric twin that had suffered horrendous damage in a landing accident last summer and had been extensively repaired over the winter months. After rigging, range checking and testing of everything that waggled or bleeped the lad lined up for take-off. He need not have been worried. The model accelerated smoothly, climbed away in a scale-like manner and joined the circuit. Because of the nature of the extensive repairs first flight testing followed as it would for a new model. The flight ended with a beautiful landing onto the softly-yielding turf. Four more flights followed before the modeller finally departed wearing a well-satisfied grin.

The very next day also proved great for flying and, being a Wednesday, the afternoon proved to be busy with aviation activity. One member, however, seemed to be taking his ease longer than most and seemed reluctant to give the beautiful new model he had brought its chance to explore its natural element. As I listened to the distant chat (we sparrows have very acute hearing) the reason became apparent. The modeller was not shy or reticent but was waiting for the designer of the aeroplane to turn up to witness the first flight. Come the designer come the hour; the model was ready to go, ticking over and lined up for take-off. As soon as the wheels broke ground it was obvious that all was not well. The owner had a tiger by the tail and the model was, to all intents and purposes, unflyable. The watchers in the pits collectively held their breath as the model swooped and dived over the far field, determined to end its existence. The owner fought the model all the way and, by some miracle, managed to get the model back to the strip for a very hard landing. The undercarriage was knocked off and there was a bit of damage to one wing – all repairable. Flying skill, together with good vibes from fellow modellers, saved the day! The post-flight analysis concluded that a rearward CG coupled with a tailplane which looked a little on the small side, lead to the near-death experience. As an aside, I remember when my mate, Jim Sparrow, was freshly fledged and had not yet grown a full set of tail feathers. He showed marked aerodynamic instability when trying to fly. We cured his problem by getting him to carry a haw in his beak so as to move his CG forward a bit. It did the trick for Jim. Who knows, you lot might learn something from us sparrows yet!

WS

# Lancaster in need of a Little Fettleing

July 2019  
*Article by Steve Warburton*

Back in May I was contacted by a lady (Christine) who lives in St. Annes who told me that her deceased husband had lovingly built a model of a Lancaster which had a 6 foot wingspan, it had been stored in a garage for some years and had deteriorated quite a lot however, she wondered if anyone in our club would be interested in looking at it and possibly restoring it.

I contacted Christine and it transpired that her husband had died 10 years ago but her family hadn't had the heart to dispose of the model because it meant so much to her husband and them. I arranged to pick Christine up to go and view the model at her cousin Pauline's house in Poulton, where it was stored.

When I saw the model it certainly was in a poor state, in the world of classic cars it would be best described as a barn find, it was covered in years of dirt and grime.

It had 4 glow engines (early OS18s) all of which, bar one, were oil seized. On lifting the mid section access panel, there was a strange looking gear mechanism which turned out to be the retraction system for the main undercarriage. There didn't appear to be any radio gear installed but I was advised that it had been radio controlled and when it was built some 20 years ago, it had been taxied but never flown.





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I took some pictures of it in situ in Pauline's Conservatory where it had been temporarily stored for a year following the sale of the family home.

All that was possible in the confined space was a cursory look and I decided that in order for a more detailed inspection to be undertaken, it needed to be moved to a suitable location. The only problem was that there was no apparent means of detaching the wing so it was unlikely that it would fit in the back of my spacious Volvo estate without incurring some damage.

I spoke to Paul our Chairman and showed him the pictures I had taken and he suggested posting the pictures on Facebook to see if anyone would be interested in taking on the task of restoration or the other option of having it as a Club Project.

I posted the pictures on our BFRCMS Flying Now Group and received a few comments e.g. Did you find it at the bottom of a dam? John Prothero suggested that it might have been built from some Aeromodeller plans from the 60s for a control line Lancaster model however; I was re-assured that it had definitely been radio controlled.

As there had been no takers, I decided that it deserved a chance and needed to be investigated further however, I needed a means of transporting it to a suitable location where it could be stored and worked on.

I asked Paul what he thought and he very kindly offered to go with me to pick it up using his recently acquired and very spacious Chrysler Voyager. A suitable date and time was arranged and Paul collected me and off we went to Poulton-le-Fylde. Unfortunately Christine couldn't come with us because the passenger seats had to be removed to ensure that the model could be accommodated.

Now when we set off I was confident that I would be able to find the house where the Lancaster was stored and when we arrived in Poulton, after going some distance down the right road, I saw what I thought was the house in question. Pointing it out to Paul he drove onto the driveway, we got out and rang the doorbell however, no one answered but a dog was barking inside.





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Thinking that this was a little strange having made the arrangements it appeared that no one was in, also I didn't remember there being a feisty little dog on my first visit, I began to doubt whether we were actually at the right house. I decided to take a look down the road and it was then that I realised we were indeed at the wrong house. Highly embarrassed I quickly went back to Paul, explained that we were at the wrong house but that I had found the right house and we made a quick getaway.

On our arrival at the right house we explained much to the amusement of Pauline, what had happened and that we would probably be making a guest appearance on Crime Watch, in the "Does anyone recognised these suspicious characters?" section of the programme.

When Paul saw the Lancaster I think he realised that I had indeed lost my few remaining marbles however, having made the trip we decided to try to lift the Lancaster and manoeuvre it out of the house and into the car.

When we carefully lifted it, it started to creak and groan and bits started falling off it however, we managed to get it into the back of Paul's Chrysler without any major structural items falling off or breaking. We were also given the original hand drawn plans and a number of dusty boxes containing various bits and pieces.

Whilst we were moving the Lancaster we saw through a window a couple of other model aircraft. On our return to make sure that we had got everything Pauline asked us if anyone would also be interested in these other two models, which she was happy to donate. It transpired these models belonged to Christine's husband who had died two years ago. Having quickly looked at the models we said that they would definitely be of interest and thanked her for her kindness and took them with us.

The Seagull Models Super Decathlon is certainly a nice little model and is almost complete apart from the wing joining tube and is in need of only a few minor repairs

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The Super Decathlon 50" has been subsequently sold for £65 which goes straight to Club funds.

Unknown Trainer Aircraft. Fibreglass Fuselage 56" wingspan IC, Hitec 35MHz 8 Channel Rx & Hitec Servos.

We think that the Unknown Trainer Aircraft (I'm sure some of our members will know the manufacturer and name of this model), would make an ideal Club Trainer aircraft and again it is in need of only a few minor repairs and the addition of a battery etc.



If anyone would like to get involved with the Lancaster, please let me know, otherwise, watch this space for updates on it's progress (or otherwise) and for the latest on the Trainer model.



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# Glider Set Up

*Article by Brian Holdsworth*

The wing design of any aircraft is a compromise between structural considerations, weight and performance, which is largely about maximising lift and minimising drag. The lift/drag ratio is critical to determining the glide ratio, which is a combination of the sink rate and the distance travelled.

Much of the drag is due to the disturbed airflow at the wing root and fuselage junction, together with the tip vortex generated by the higher pressure below the wing merging with the lower pressure above. The proportion of these contributions to the overall drag may be reduced by increasing the span and hence reducing the chord to maintain the required wing area. Aspect ratio is the span divided by the average chord. High aspect ratios increase the bending forces near the wing root due to the increased leverage of the wing lift with structural implications. They also reduce the achievable roll rates due to the increased dynamic roll stability and are more prone to tip-stalling which causes handling problems, particularly when landing. The smaller chord reduces efficiency due to scale effect (Reynolds Number) so that a small high-aspect ratio model would not fly well!

Most aircraft have a relatively low aspect ratio since glide performance is considered less important than the other characteristics. Gliders have a higher aspect ratio, accepting the other limitations. Typically, aerobatic power models with their rolling requirement have aspect ratios ranging from about 5 to 6 with general sport designs up to about 8; fun-fly types can be lower at about 4 with a poor glide. Aspect ratios for aerobatic slope soarers are of the order of 8, sacrificing some glide performance for greater manoeuvrability. To maximise glide performance, thermal soarers are about 12, which is around the practical limit for simple wooden structures. Using complex structural techniques such as moulded carbon fibre etc, some have higher aspect ratios up towards 20 with considerable expense and vulnerability to damage. Full-size gliders generally have higher aspect ratios than models due to scale effect and complex production techniques - some exotic examples have reached 50 to 1 aspect ratios, with tip chords down to ~150mm, but their manufacturing problems are significant and landing speeds are high to reduce the tip stalling potential.

# Glider Set Up Continued....

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*Article by Brian Holdsworth*

There is a range of configurations described as gliders. As the name suggests, their main intended flight mode is unpowered - ie gliding. Slope soarers are flown off hills using the considerable lift generated by the wind rising over the hill to sustain their flight. Thermal soarers use the rising air generated by thermal activity off flat ground to extend their flight. Some may be unpowered, but the recent availability of brushless electric motors and LiPo batteries has enabled the simplification of launching by fitting an electric motor with a folding propeller to reduce the drag when unpowered.

Powered flight, including electric, is banned on most slope soaring sites, particularly National Trust. This restriction was introduced many years ago after an undisciplined few, flying powered models, caused considerable disruption from noise and flying low over people, wildlife, sheep etc. with several significant incidents. Some slope enthusiasts still seem to show little regard for other hill users - articles in the model press have included mention of the fun of buzzing dogs etc and complaints about walkers getting in the way!

Models intended for one purpose would perform poorly if used for another. A slope racer would be optimised for high speed, relying on the generally consistent hill lift, and would perform poorly if used as a thermal soarer off a flat field. Similarly, a slow thermal soarer would struggle off a hill, being unable to cope with its greater wind strength and consequent turbulence. Ballast is sometimes added to both types to increase flying speed, which would allow operation in stronger winds. However, there is a fundamental restriction for thermal soaring in windy weather, since any thermals are likely to go downwind too fast to be useful!

All aircraft have three main flight modes being Take-off, Cruise and Landing. For powered models, these are usually achieved by throttle position using high power for take-off, medium for cruise and low for landing. Generally, trimming is undertaken in cruise mode with any elevator required to control takeoff and landing being achieved by the flyer moving the elevator stick. Some have retractable undercarriages and/or flaps controlled, as required, by switches etc.



# Glider Set Up Continued....

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*Article by Brian Holdsworth*

For a glider, slow or faster flight in addition to Cruise can be useful. Thus, flight modes may be termed Launch, Normal, Slow, Fast and Landing. A simple glider may have just rudder and elevator controls, but ailerons and maybe flaps and/or airbrakes may be incorporated for greater versatility. Slow and Fast is implemented by changes to elevator trim, but there may be some improvement by also lowering or raising flaps and/or ailerons by a small amount to change the wing section towards one with camber or reflex. Landing or descent from altitude may be helped by using an airbrake or Crow (Butterfly) where the flaps are fully lowered and the ailerons raised by a significant amount to produce considerable drag.

Setups can become quite complex using the considerable capability of modern computer radios to tailor the configuration to improve performance in the various flight modes. The potential complexity of a glider setup is considerably greater than for most power models and so can be a test of transmitter capability. There is a variety of possible techniques but, for a particular set, many will not be available or be mutually exclusive. Too many functions can lead to confusion for the flyer in remembering which switch does what and when, so that simplicity may be considered appropriate - the 5 modes above seem realistic and achievable. There is a law of diminishing returns, so that some of the more advanced functions may not be considered worthwhile, meaning that a less capable set might be adequate.

The user interfaces and inadequate manuals of many sets have been previously criticised. Interpreting their downloaded manuals suggests that many sets would not be capable of achieving all these functions simultaneously, so that choices will have to be made from the actual capabilities, often needing to accept some limitations. Camber and Crow are unique to gliders and are often not supported or lack motor support. Experimentation will often be needed to interpret menu settings into functionality and may identify extra capabilities and some restrictions. A common limitation will be where some functions can be achieved in isolation, but not in combination due to insufficient mixers. Thus a 9+ channel set, providing more mixers, may be needed even if only 6/7 channels are being used. In general, much of the functionality needs to be implemented via specific menu options, otherwise too many mixers would be needed. A rough count

# Glider Set Up Continued....

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*Article by Brian Holdsworth*

suggests that, using free mixers, a full-capability implementation would require up to 33 mixers, with up to another 8 where a V tail is used - keeping track of which mixer does what could be a challenge!

Setting up an electric-powered thermal soarer, with flaps and ailerons plus a V tail increasing complexity(!), will be detailed together with other possible techniques to control the mixing of the control surfaces. Flight tests will be identified to determine settings for the various functions. The setup parameters quoted as an example use the Tactic TTX650 six channel set, which has a greater capability and a better manual than most seen, with the bonus of a TX/RX Combo being cheaper than the others at £100! It was distributed through Revel by Hobbico which collapsed a couple of years ago, and so may not be available.

The current Spektrum range share one of the better user interfaces, with some functionality omitted from the lower sets. Their manuals are sparse and of little help, but the menus seen suggest that most features could be achieved by the DX6e upwards - the older sets were more limited. Reliability has been improved over the years, but still causes some concern with reports of RF board failures and software freezing requiring return for repair. Even their optional expensive Lithium battery with built-in charger has reported cases of sudden loss of charge, requiring replacement - although originally advertised as incorporating balancing, a failed item examined had no such capability and a dubious implementation!

Futaba generally has a different user interface for each set and has become expensive. The 6K V2 is greatly extended from the superseded 6J and has one of the better manuals, although with several contradictions and translation difficulties. The inclusion of a glider model type suggests that most features could be implemented, though only with a switched throttle supporting the essential slow motor startup. 8J and 10J share a user interface with limited capability and would struggle. It is presumed that the various expensive FASST-supporting sets, with limited manuals, would cope.

The recently introduced RadioLink AT9S and AT10 via J.Perkins seem to be a clone of the obsolete Futaba 9C with a colour LCD screen, and a 2.4 GHz RF board with an odd description of its transmission protocol. It uses a higher TX



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*Article by Brian Holdsworth*

voltage supply than the others - 8 dry cell/NiMH or 2S-4S LiPo with no charging provision. Claims of being a "Taranis killer" might be justified, since the manual suggests considerable capability so that most of the glider functionality should be achievable - when experimentation has interpreted the manual!

The Frsky Taranis has Open Source software which implements everything using mixers. It uses a higher TX voltage supply than most - 6 cell NiMH with built-in charger. There have been many software updates, with some introducing incompatible transmission protocols, which can cause confusion when purchasing receivers, especially as some can seem to work under some conditions but become erratic under others. Documentation is sparse to non-existent, relying on user forums of varying relevance to current update status. As above, many mixers would be required!





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# Club Instructors

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

# Shows 2019

10<sup>th</sup> - 11<sup>th</sup> August

LMA Elvington

31<sup>st</sup> August - 1<sup>st</sup> September

LMA Much Marcle

# Club Events 2019

Scale and Aero Show Trophy Event - **Sunday 22<sup>nd</sup> September**



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# In Conclusion

As I sit and tap away on this keyboard, the sun is shining bright and there doesn't appear to be much air movement - ideal flying conditions. Elvington LMA is just around the corner. In my humble opinion, that is the best show for spectators.

Thanks to all of you guys who have put together such excellent articles for this month.

I guess that's it for this month - happy and safe flying guys.

*THERE JUST HAS TO BE A CAPTION FOR THIS - ANY IDEAS ??*

