



Great Britain Radio Control Aerobatic Association

# AEROBATICS

**NEWS**

Newsletter of the Great Britain Radio Control Aerobatic Association



*May 2002*

# Aerobatics Editorial

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## **Front cover**

shows Daniel Gallo with his Bullet design, for .61 power which uses a dolly undercarriage for flying off rough fields. More details inside.

## **UK Team for Euro champs 2002**

The team for this event has now been finalised and will comprise Brandon Ransley, Richard Howarth and Angus Balfour. Angus is a very deserving new team member and I'm sure that we all wish him and the other team members the best for the forthcoming European Championships to be held in Spain later this year. For more information on this event, see David Tappin's article inside this issue.

## **Lack of local events**

I have made a number of statements warning members of the lack of local events both in the South and nationally. Yet since mentioning this, very few competitions have been added to the competition calendar. This really is a case of if you want them, someone has to volunteer to organise them and act as a CD. The committee cannot be expected to do all this in addition to all their other duties. We will help to support any initiatives that are offered but the process must start with and be supported by you the members.

## **Having said, that Nik Middleton emailed recently to mention the new Cashmoor event...**

This recently added event, on August 4th, and with weather permitting, will attempt to fly 6 rounds. Contestants should expect to Judge the Class below them Except FAI. This will be an intense days flying with no breaks for lunch, so please ensure you are adequately prepared. See the competition calendar for more details.

## **New Team Manager**

Nik Middleton has been co-opted by the committee to the position of Assistant Team Manager and will attend the European Championships in Spain later this year. In addition he is now also Team Manager Designate 2003 for the World Championships in Poland, replacing David Tappin at the end of this year after four years of service in this position.

## **Masters Schedule**

The latest version of the proposed Masters Schedule is included with score sheet and ribbon diagram inside the back page and downgrades given elsewhere in this issue. Finally I have had some members voicing their feelings in support of this schedule which makes me feel that this is the preferred one. It is hoped that this will be ratified at the next committee meeting in June after which it is also hoped that it will be included in any forthcoming competitions. Please try it and if you like it contact me or any other committee member to push this through as soon as possible.

## **League table scoring method**

Last years AGM saw a proposal for league tables to be set up in all classes of the GBRCAA excluding centralised events. The most sensible way for this to be done in my opinion is to normalise scores from all competitions for each class and have the best four events counting towards individual league table positions. Four events seems a reasonable compromise between the need to attend enough events to show serious intent to win the respective league as opposed to not allowing the league to be won by attending as many events as possible.

Another method to consider involves having fixed points per position in a competition and a variation of this is suggested for use in the proposed aerobatic world cup. In this only two international events would count and points are allocated based on individual position and also by the number of pilots in the competition. This again seems a very reasonable way of forming a league but is more complicated than simple normalising.

It is hoped that some method will be ratified at the next committee meeting in June and once done I will publish the league tables so far based on the results that CD's send to me.

## **Triple Crown update**

Please see page 16 for directions to this event and an initial schedule of events. The team for this event will be Brandon Ransley, Dave Matthias, Steve Underwood and Keith Jackson, with members of the international team yet to be finalised.

## **4th Centralised**

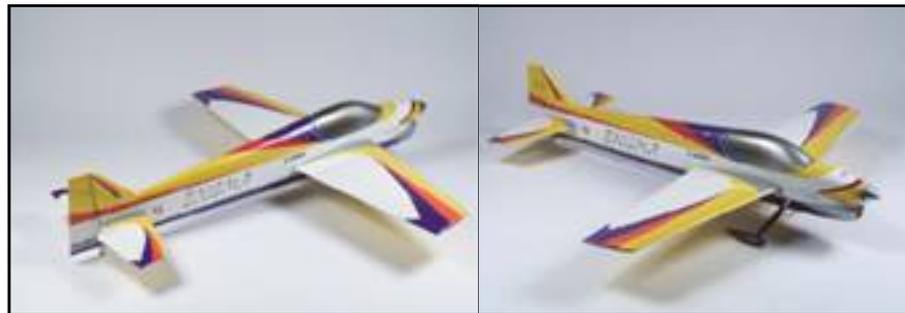
Thanks to the efforts of GBRCAA member Dave Owens, the 4th Centralised event will now take place at Wroughton Aerodrome, near Swindown, on the same date of 14th July.

Keith Jackson  
GBRCAA Newsletter Editor

## New Products for 2002

### New from ZNLine,

Arnaud Poyet's *Enigma*, pictured below against the Evolis XXL From this angle its difficult to tell the differences but I'm sure they exist.



### Webra MC carburetor

The Webra MC carburetor has been specially developed for use in the FAI F3A and F3C aerobatic classes. The design principle produces an increase in motor power combined with smoother, more consistent motor runs over the full speed range. The special feature of the MC carburetor is the electronic mixture control system which sets the optimum fuel mixture at several points on the throttle curve, each point being independent, i.e. with no effect on the other curve points. This unique feature makes it possible to set the optimum fuel/air mixture for any particular rotational speed by adjusting the fuel and air ratios simultaneously.



It is not possible to operate this carburetor without electronic regulation; it requires either a radio control system with suitable software, or the AMC05 electronic mixture control unit (Order No. 20450) which we have developed.

### Webra AMC05 electronic mixture control unit

The Webra electronic mixture control unit enables the user to set up a 5-point throttle curve, designed to match the fuel mixture automatically and accurately to the motor's characteristics. The electronic mixture control unit is initially "taught" the travel of the transmitter throttle stick, to allow the system's characteristics to be exploited to the full. It is also possible to adjust the fuel mixture when the model is in flight: an auxiliary transmitter channel (preferably a slider) is used to offset the entire curve upwards (= richer) or downwards (= leaner).

- Operating voltage 3,5-10V
  - Current drain 15mA
  - Dimensions 55 x 27 x 14 mm
  - Weight 20g
  - Points of curve 5
- RRP. £54.99 from Robbe Schuler UK



### Webra Glow Plug Control unit

The Webra eGL 1.1 is an electronically controlled glow system for model glowplug motors. It provides and controls the glow function of the glowplug, and at the same time monitors the receiver battery voltage and the receiver signal.

Reliable, reduced-speed idle for two-stroke and four-stroke motors  
Smooth transition from idle to full-throttle  
Glowplug can be matched to full-throttle requirements (cold plug)  
The need for expensive nitromethane in the fuel is eliminated completely  
No separate glowplug clip required for starting  
Convenient user-adjustment of the active glow range  
Last set glow range can be stored  
Programmable glowplug On/Off switching point  
Socket for optional audible and/or visual indicator  
Visual indicator for: glowplug short-circuit, flat glow battery, faulty contact  
Receiver battery voltage monitoring  
Unit provides warning if transmitter is switched off, or radio interference is present (not with fail-safe receivers)  
Audible model finder (optional buzzer)

- Signalling elements: 1 internal LED / 1 external LED / 1 external buzzer
- Receiver connection: parallel to throttle servo or vacant receiver socket
- Current drain: < 5mA
- Operation: 1 AA-size cell or Sub-C >500mAh
- Weight excluding cables: 5g
- Dimensions: 31 x 16 x 5 mm

RRP. £29.99 from Robbe Schuler UK



See more at [www.adis.at/webra/fra\\_mot.htm](http://www.adis.at/webra/fra_mot.htm) or telephone Robbe Schuler UK on 01455 637151 Ed.

## Letters to the Editor

Hello Keith,

I'm just writing to show some pictures of a model called the Bullet I designed last year. As I fly from rough grass fields, damage to undercarriages happens quite often (especially retracts). I needed a model that was aerobatic (of course!) and yet capable of flying from rough fields, hence the design shown in the photos.

I know the model may seem simplistic to some readers but it serves my needs at present, more than adequately. Take off is usually by hand launch (a very light nudge I might add!) but I have also

constructed a take off dolly which has been used with success when flying from smoother strips. It has a 57" wingspan (plug in wings) and almost 57" in length. Power is a low cost .61 motor. Construction is all built up, producing a lightweight but very durable airframe.



Thank you & regards,

Daniel Gallo  
Aberdeenshire

### Artistic Aerobatics

Dear Keith

I wonder if you could give a new site a mention? I really don't want to post this in the forum without permission. I have just designed a web site,

[www.artistic-aerobatics.com](http://www.artistic-aerobatics.com)

Its has superb support from all the top flyers and indeed is the official site of the FAI in this area. We are hoping AA will be a media friendly side to aeromodelling and if you read the news section you will see things are really happening. There are few British flyers involved and, as one myself I would like to extend and invitation to all to get involved.

I am the WEB designer and a keen AA Flyer, The main editor and contributor is Guy Revel. We have the full support of all the top flyers in the world with recognised events already planned for 2002 and onwards. The site is still developing but very soon it will be bigger than ever.

Regards

Steven Atherton [smjatherton@ntlworld.com]

Sent: 02 April 2002 21:10

## **PO3 Problems**

Dear Keith

Update on judging from BS - needs to be publicised certainly to Judges but perhaps also on Website and/or Newsletter. I think there will be more of these so we will need a system.

Peter Brett

*Dear Bob,*

*Over the weekend we opened kind of a new institution in Germany what we call the "Kunstflugakademie" (Academy of Aerobatics). Pilots and Judges met to discuss and practise F3A-rules theoretically and in training flights. Since persons with different levels of skills (from newcomers to top pilots) are able to exchange their knowledge, this event is rather well determined to educate younger or less experienced pilots and judges and further to motivate them to enter the F3A competition scene.*

*During the meeting it was deeply appreciated that you had comprehensively clarified my recent questions and I may thank you for this contribution from your side!*

*However, an additional question came up referring to manoeuvre P-03.22: Has the quarter loop be immediately followed by the half roll (like in an Immelman) or has the quarter loop to be followed by a more or less long (straight and level) inverted flight before performing the half roll?*

*Please let me know the correct interpretation of the manoeuvre description, so I can distribute it among our pilots and judges.*

*Thank you for your efforts!*

*Best Regards*

*Michael Ramel*

*Dear Michael*

*There has to be a discernable/recognisable distance of straight and level inverted flight after the quarter loop, before the half roll is done, and some straight flight after the half roll as well, before the model aircraft is turned for the landing sequence.*

*Best regards*

*Bob Skinner*

## **Noise returns!**

Hi Keith,

The March Newsletter was really the best for some time. Brandon's practice schedule makes some very valid points and I for one will be trying to pick up on them.

Your noise article was most informative and for a lay person like me provided some mind boggling info. - especially that the SPL was actually greater with the exhaust ducted away!

I am really interested to know how much quieter your lead lined model will be and also how it flies! Seriously though I would like to pick up on a couple of points in the article. Looking at your table of noise sources and the likelihood of attenuating them I don't agree that there is little that can be done about engine shell noise. Christophe has fitted just such cladding in his cowl round the engine and while he may have done this empirically, acoustic enclosures are a common feature of engine driven plant such as hydraulic power units and generators. The same obviously applies to the exhaust system.

I am in full agreement about damping fuselage panels and in my "other life" have regularly fitted damping panels and acoustic foam to flimsy sheet metal enclosures housing hydraulic equipment often with spectacular results. The acoustic foam we used was lightweight, self adhesive and with a thin skin on the outside to prevent oil and water contamination it was pretty light as well. The damping panels as you know are not light but the foam may be worth trying by itself. Bob Violet used to sell hush kits for his D.F. models which consisted of foam to line the ducts with so may be this could be a source for lightweight materials.

I am not so sure about reducing structural vibrations in the flying surfaces. Granted my Angel's Shadow has hollow panels but solid low density foam construction is likely to be hard to beat in terms of damping and absorption (unless you delete the balsa and use some of that lead sheeting!)

Going back to engine and exhaust noise the other feature that most full size acoustic enclosures incorporate is noise baffling on both the air inlet and outlets. I think this is an area we could improve greatly on our models which usually have two bloody great holes to let noise out at both ends. I can't leave this subject without commenting on your exhaust orifice findings. I accept that the SPL readings are valid and if all we want to do is pass the noise test they are all that matters but there is also a subjective aspect which must be addressed. Again look at Christophe who always crimps his exhaust outlets. Last Sunday I was flying my model and there was a definite change in the exhaust note. On landing the rubber deflector had come off taking the crimped brass outlet pipe with it. Subjective I know but audible believe me.

Lastly I remember reading a science fiction story years ago in which a new toughened glass has been developed which exhibited the at first undesirable property of taking several milliseconds for light to propagate through it (the property became very useful later in the story). As it was being used in car windscreens it caused a spate of turning right accidents during which the drivers thought the approaching car was further away than it really was! Now if we could get such a material which worked on sound waves and arrange for it to provide a 1/2 wavelength delay.....

Seriously Keith a great article please keep us informed of your progress and if I can be of any help in prototyping your induction silencer let me know what you need.

Kind Regards  
Malcolm Harris

Re overall noise levels being greater when the exhaust was ducted away (2nd paragraph)

This bit defies common sense. Surely if you remove exhaust noise, the overall spl would be lower. Yes. Normally. But that is in ideal conditions where all noise sources are discrete; i.e. do not interfere with each other. Refer back to the example of constructive and destructive interference between the two loudspeakers. Hence removing one noise source may actually prevent destructive interference at the measurement position and increase noise levels! This is further complicated by the fact that the noises are not in general omni-directional and hence a greater or lesser degree of interference can occur at different measurement positions. In an ideal test where all the non-relevant sources could be isolated with lead foam, then a simple measurement with the exhaust orifice as normal and then ducted away would lead to lower spl's.

Re structural vibrations in the flying surfaces...(5th paragraph)

I agree, you just have to tap the AS wing to hear it's hollow amplified note. The ideal here would be a stiff but rubbery textured material that could provide both structural strength and a degree of dissipative loss in itself. For example if you tap a drinking glass and also one made from plastic, the difference is obvious. Resonant frequencies tending towards 1KHz will always measure loudest on an A weighted noise measurement (the A weighting curve has its maximum value or minimum attenuation at 1 KHz and tend to penalise noise with lower frequency in an attempt to mimic the response of the human ear).

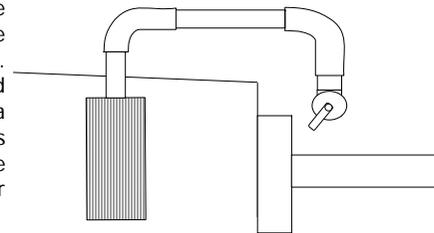
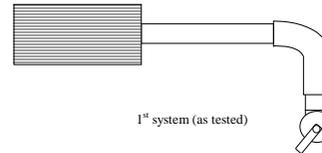
Thanks for the kind remarks Malcolm. In terms of the air induction silencer, on reflection you are probably one the very people I should have though to ask about helping me with this. As I see it this would provide two crucial functions, firstly air filtration (I have gone

through hundreds of pounds of spares as a result of my engines ingesting dirt the current wire filters could not block). Secondly noise reduction.

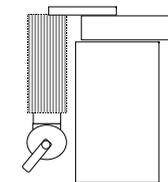
My ideal system (I to have an Angels Shadow) would be to enclose the silencer within the fuselage. I have recently done a test to see the effects of restriction on the performance of my 140L. The pipes comprised a tight 90 degree rubber elbow which fitted over the intake orifice of the 140L. Phil had provided me with a backplate / carb. assembly which had a 20mm extension tube welded onto it. So the rubber elbow fitted over this and had an internal diameter of ~16mm. This was connected to a 100mm long brass tube of similar internal diameter which then led into a multi-pleated cylindrical filter element about 130mm long, 50mm diameter. Thus I chose all element so as to minimise the restriction. However they still managed to knock off ~ 400rpm measuring 8100rpm with a 15 x 13 APC prop on 25% nitro 20% Klotz. When I took off the bits iteratively, I found that 200rpm was associated with the filter element / tube and 200rpm on the rubber elbow. I can accept 200rpm loss these days as I'm not flying my Caprise competitively but 400rpm is unacceptable. I think the crux comes down to the rubber elbow; it is far too tight and 90 degree bends are known for their restriction.

So my question to you is this, can you or anyone else you know bend some aluminium tube through 90 degrees to come off the intake orifice of the 140L? The next big problem is how to fit it to the engine as they don't tend to resell with lumps of tube welded to them! If this was the only solution though I would do this to my engines as the backplates only cost ~£26.

I've attached a sketch with three systems. The first is as I've described and in practice the filter element could be attached to the floor of the pipe tunnel with tie wraps or similar. Very little silencing would be offered by this system and duct tones from the pipes would have to be attenuated by making the straight pipe porous to kill any standing waves. The second system is more ideal and silencing could be achieved by virtue of the fact that the intake noise has to travel through the fuselage sides. Again porous tubing could help here. The third system is just an improved wire filter with a cylinder being made out of wire mesh and this being mounted vertically off the intake orifice and tied to the cylinder head with a strut as per the airbox in the 120AC.



In the first two systems the crucial points are as mentioned before, firstly the bend on the elbow(s) must be as large as possible with perhaps the diameter being made larger through the bend to ease the restriction; secondly a method of attaching this somehow. I'm using the Hatori manifold for all of this, the power header prevents any sensible attachment to the orifice as the header passes directly over..



Well I hope you still feel inclined to try; please let me know if you are able to do anything about these ideas.

Best wishes

Keith

# Team Manager's Report

That Alan Tichmarsh never stops talking about gardening.

Well, now we know who will be in the team for the European Championships in Spain next September. Congratulations to Angus Balfour, Richard Howarth and Brandon Ransley for their place winning performances at the 2nd Centralised event at Ashbourne on May 12th. The host club have a very nice site complete with club hut, good car parking and a well prepared strip, the weather was nearly perfect, what more could we have asked for? Before the competition there were, according to my calculations, seven pilots who could have made the team. Commiserations to the unlucky four, it was very close as you will see in the Final Standings table published elsewhere in this issue. I'm sure everyone agrees that we got the right result on the day.

On the subject of the team's key purpose I recently met a GBRCAA member, Chris Dowsett, who lives in Spain and he has kindly provided me with a few sets of tourist information, maps etc on Zamora, the location of the European Championships. If anyone is thinking of combining a Spanish holiday with a visit to EC 2002 give me a call and I'll send you a pack. It looks a marvellous place with lots to see in addition to the flying.

I am very pleased to report that the Committee's choice for F3A Team Manager Designate 2003, our esteemed Webmaster Nik Middleton, will be accompanying the team to Zamora to thoroughly wet his feet in the mysteries of F3A International Championships. I only hope that it won't put him off wanting to do the real thing in the future. Of course the final ratification of any Team Manager rests with the BMFA but I am confident that the enthusiasm which Nik is showing, coupled with his experience and connections will stand him in good stead for the future.

That Tiff Nedell doesn't half go on about cars.

In my opinion there has been too much griping about judges, it sometimes seems as if some pilots will never be satisfied until they get to pick the judges themselves. There used to be an unwritten rule that for certain competitions pilots were expected to take a turn at judging, for example the team members used to judge at the Association Championships. Maybe we should reintroduce this idea on a broader base, how about every pilot has to judge at least one centralised event, anyone fancy proposing that at the AGM? At the judging seminar Bob Skinner showed us how judges have their own ideas about style, and made the judges realise that there was more to it than just counting downgrades. We did a couple of exercises where we disregarded accuracy, scoring only style & grace. The differences in our scores made the point with abundant clarity. For bias, you should sometimes read preference. OK so nobody is perfect but our judges have a lot to put up with too, sitting there in whatever the weather thinking that they'd rather be flying. Getting up at 4.50am driving a 440 mile round trip and getting home again at 10 o'clock at night isn't all it's cracked up to be, but some nice company and a few friendly words goes a long way towards turning it into a nice day out for all that.

On the subject of improving your scores I noted a common problem on manoeuvre 22 in the P03 which, when done properly could get you a couple more points. Unlike the Immelman, where the roll has to follow the half loop with no discernible break, in the case of the spin there should be a recognisable distance of straight and level flight after the 1/4 loop pull out and also after the half roll to upright, before turning away to prepare for the landing.

What was that Alan Tichmarsh and Tiff Nedell stuff about then? Nobody has ever said it to my face but we are hearing that some members feel that the committee is too team orientated. You rarely hear people saying that Delia Smith is too cooking orientated so I hope you will excuse me but I thought that being team orientated was my job. You may recall, in the January 2002 issue of Aerobatic News, an article on the history of the GBRCAA by founder members Geoff Franklin. In it he reported an SMAE spokesman's response to his question about organising some competitions, ".....you want it. You do it". There is a flip side to remarks like that which goes "you don't want it. We'll do it". As a committee we fail to carry out our responsibility to the BMFA to select a team, and organise everything which that entails, at our peril. The penalty of failure is that we don't have a team. The GRBRAA is not an independent body, the entry form for European and World Championships is an FAI document which has a place for the "Stamp and signature of the NAC". NAC means National Aeronautic Council - the BMFA, no stamp, no entry. There would be three options, at the very least no BMFA support (currently team members can expect around £500 each in BMFA financial support for World Championships), more likely a no show for the UK team or, at the very worst, the BMFA takes back the responsibility for organising team selection. May we take it that you prefer the status quo? My counter to any rumblings that the committee is too team orientated is always the simple statement that I think some GBRCAA members are not team orientated enough. Please feel free to call me if you think I'm wrong, alternatively why not call the team members, wish them luck and prove me wrong?

Regards

David Tappin  
UK F3A Team Manager

# REPORT ON THE TRAINING DAY

I would like to thank Bob Skinner for giving up his time to attend our judges and pilots training day, David Tappin for organising the weekend's events for the judges, and the rest of the committee for finding an excellent venue for the flying on Sunday. Thanks also to the Leicester club for the use of the flying site and all its facilities and are we all turning green with envy?

Well Saturday started with a committee meeting that ended with the arrival of Bob Skinner & David Tappin. Thank you David for collecting Bob from the airport. The judging seminar started with a minute's silence in memory of Bill Harrop. It was nice to see Alison and John there, it was a shame that the some more of the membership did not show the same commitment as they did.

Kevin Caton gave a presentation on the CD's guidebook that was quite interesting, but we have now found there is an error regarding the way the noise meter is pointed as the model. This will be put right when the CD guide is published.

Bob Skinner started with his presentation of the PO3 schedule, which was going very well until he reached manoeuvre 10, 11/2 snap followed by 4 of 8-point roll. The pilots had been practising this manoeuvre since the end of last year rolling the same way, Bob informed us that the 4 of 8 was in the opposite direction from the snap, you could have heard a pin drop as we all realised we had all been practising it wrong, as in the handbook it omits the word opposite. *From this we must conclude that references to all schedules must be the Aresti diagrams released by the FAI. Ed.* Once we had got over the shock of this Bob carried on with the rest of his presentation, the one thing that was mentioned that the possibility of lifting the weight limit but still keeping the 2 meter wing span, and the possibility of ½ points being introduced, this I support as I have always thought that it would be a good idea to have ½ points as it would make judging a little bit easier. The seminar went on until about 7pm. In the evening those staying at the Holiday Inn met up and enjoyed a meal together and a good natter about the flying to come on the Sunday.

Sunday dawned overcast but dry, so off the Leicester Club flying site. It was nice for me to see the large number of judges present, it's a shame the number of pilots was thin on the ground, with only 4 being present. But they were lucky because they got more flying time and enjoyed the feed back they were getting from Bob Skinner and the rest of the judges. Kevin was the first one off the ground and started to fly the schedule but Bob had us just watching the manoeuvres and not judging them, but concentrating on the precision of each manoeuvre. He landed and then it was John Harrop's turn and once again Bob got us just watching the schedule but concentrating on the grace of each manoeuvre, I found this very interesting as it gave you a new perception on how you look at the schedule i.e. in the depth that the schedule is flown at, radius of each manoeuvre and constant base line height. Kevin once again took to the skies and we had to judge the whole schedule, once he had landed Bob gathered us all around to analyse the flight with Kevin. The scores that Bob gave and the rest of the judges gave were very good as we were all very close, which was pleasing for me. John had another flight and we did the same with him, everything again was okay with Bob's and the rest of the judges' scores. Then poor old Keith, he started his flight and I think the judges must have thought they were all at sea because his model was porpoising about as he could not get the model trimmed properly. He has now changed the model. Then Alan Simmonds flew which was quite interesting to say the least when it came to Bob's analysis at the end of the flight. There was a few discrepancies in the judges scoring when Bob zeroed a manoeuvre and the rest of the judges scored it quite low, we questioned Bob as to why he had zeroed it and his reply was that he had counted all the downgrades and there were no points left, therefore zero.

Over all I think the pilots and judges walked away from the weekend's events feeling they had learnt something from it all. To all those pilots who did not attend, you missed out on a chance to be coached on your weak points, but never mind that's your loss.

We have now started the new flying season and there are a few things that I have noticed in some of the flying. At the first centralised some of the pilots were flying too deep and were not being penalised enough by the judges, hopefully in time we will be able to put this right. There are also a lot of pilots who are flying the 45 degree angles too shallow on all manoeuvres that contain 45 degree angles, and there is not enough straight line flight in between manoeuvres, roll rates of some manoeuvres seem to be of different speed, and the spins speed up as well, too many pilots are over and under rolling throughout the rolling parts of manoeuvres. Centre manoeuvres are losing a lot of points for being flown off centre. These are only my comments; it would be interesting to find out what the other judges think.

Bob Ailles  
GBRCAA Chief Judge

# Proposed Masters Schedule 2002 Description

## 1. Takeoff sequence.

The model aircraft is placed on the runway, takes off, then turns 90 degrees toward the line defined by the upwind and downwind marker. When approximately over this line the model aircraft turns 270 degrees for a downwind trim pass. When approximately even with the downwind marker the model aircraft initiates a 180 degree turn, reversal, or other turn-around manoeuvre of pilot's choice.

- Takeoff sequence not followed, Zero Points.
- model aircraft passes behind judges line, Zero Points.
- Only two scores, a zero or a10, may be awarded for the takeoff sequence.

## 2. Fig M 1/4 Rolls Up & Down Exit Inverted.

Pull to vertical up line and perform a 1/4 roll in centre of line, then perform a stall turn on down line a second 1/4 roll in to a outside loop, then perform a second set of vertical up & down lines with 1/4 rolls exit inverted.

- Outside loop & Exit not inverted Zero points

## 3. Half Reverse Cuban Eight Exit Inverted.

Push to 45 degree up line and perform 1/2 roll then push through 5/8 of outside loop to level flight.

## 4. Slow Roll Inverted to Inverted.

Perform a slow roll of equal length each side of centre.

## 5. Half Square Loop Full Roll up.

Push to a vertical up line & perform a full roll then push to level flight.

## 6. Cobra Roll from the top with 1/2 Rolls.

Push to a 45 degree downline & perform a 1/2 roll push to 45 degree inverted upline & perform a second 1/2 roll then push to recover upright. The direction of 1/2 rolls is optional.

## 7. Split S.

Perform a 1/2 roll followed immediately by a half loop.

N.B. There is no hesitation between the half roll and the half loop.

## 8. 4 Point roll.

Perform 4 point hesitation roll; the centre off this manoeuvre requires points 2 & 3 to be over the centre marker.

## 9. Humpty Bump with options.

Pull to vertical & perform 1/2 roll or 1/4 rolls for wind correction.

## 10. 45 Degree up with 2/4 pt Roll Exit Inverted.

Pull to 45 degree upline & 2 points of a 4 point in centre of up line then pull to inverted flight.

## 11. 2 Turn Inverted Spin.

Perform two consecutive inverted spins.

N.B. Snap entry, Zero points. Forced entry, severe downgrade.

## 12. 1.1/2 Rolls reversed immediately.

Perform a 1.1/2 roll followed by a 1.1/2 roll in the opposite direction immediately.

N.B. There is no hesitation between the rolls.

## 13. Top Hat 1/4 Rolls up & down.

Pull vertical & perform 1/4 roll, pull to inverted flight, fly a straight line, pull vertical & perform 1/4 roll then pull to level flight

**14. Stall Turn 3/4 Roll up 1.1/4 Negative Snap Roll down**

Pull vertical perform a 3/4 roll followed by stall turn on the down line perform a 1.1/2 negative snap roll, then pull to level flight. N.B. The snap must be negative & not positive, Zero points.

**15. Immelmann turn Full Roll Exit Inverted.**

Perform half of inside loop followed immediately by a full roll exit inverted.  
N.B. There is no hesitation between half loop & roll.

**16. Humpty Bump with 2/4 point Roll down 1/2 Roll up, inverted entry & exit.**

Push to vertical down line perform a 2 of a 4 point roll, then push to half outside loop into vertical upline, then perform 1/2 roll, then push to level flight.  
N.B. The entry & exit quarter loops & the bottom half loop are all of equal radius.

**17. Fig 6 from the top with Full Roll down inverted entry.**

Pull to vertical down then perform a full roll, then perform 3/4 of a outside loop into level flight.

**18. Hourglass from the middle top first.**

Pull to 45 degree upline then pull 135 degree horizontal inverted flight ,then pull 135 degree into 45 degree downline, then push 135 degree to horizontal inverted, then push 135 degree into 45 degree upline, then push to level flight.

**19. Half Square Loop to top 1/2 Roll on exit.**

Pull to vertical upline, then pull to complete half square loop, then 1/2 roll to exit.  
N.B. There is a brief hesitation between quarter loop & half roll.

**20. Outside Inside Cuban Eight with Full Rolls.**

Push down to complete 5/8 of outside loop to a 45 degree upline with full roll, then pull & execute three fourths of an inside loop into second 45 degree upline with full roll then push into level flight.

**21. Reversed Top Hat 1/4 Roll up & down.**

Push to vertical downline perform 1/4 roll, then push to inverted horizontal line, then push to vertical upline perform 1/4 roll up, then push to level flight.  
N.B. The horizontal line must be inverted. Quarter loops must of equal radius.

**22. Two Turn Spin, opposite immediately.**

From upright perform a two-turn spin, then immediately perform a two-turn spins in the opposite direction, then pull to level flight.  
N.B. The spin reversal is immediate.

**23. Landing sequence.**

At reduced power execute a 180 degree level or descending turn to a downwind heading fly a downwind leg, then turn 180 degrees into the wind. Fly a descending approach to the runway touching down in the landing zone. The landing sequence is complete when the model aircraft has rolled 10 meters or come to rest.

**Judges Notes.**

- Model aircraft does not follow landing sequence, Zero points
- If any landing gear retracts on landing, Zero points
- If the model lands outside the landing zone. Zero points. The landing zone is a designated by a circle of 50 m radius or lines across a standard runway spaced 100 meters apart where the runway is at least 10m wide.
- Only two scores, a zero or a 10, may be awarded for the landing sequence.

All manoeuvres start and finish with straight and level flight if not a 2 point downgrade.

*See score sheet at Back page. Ed*

## Chairman's Pages

Just a short article from me this time – I'm in the middle of the 'hectic season' at work at the moment, which has left me with very little spare time for flying and other things modelling. Normal service resumes in the first week of June.

The first two Centralised contests have been held, which completes the team selection for this year's European Championships. As you will see elsewhere in the newsletter, it's congratulations to Brandon Ransley, Richard Howarth & Angus Balfour, who travel to Zamora in north-western Spain in September to represent the UK. We wish them well and trust that they will be burning plenty of fuel between now & then!

One of the consequences of my restricted availability lately is the lack of a committee meeting. I'm conscious that there has been some concern that we have not yet decided on the new Masters schedule. I am sorry that this has taken longer than we hoped but it is vital that we get this right as the new class should appeal to a wide range of existing pilots. By the time you read this we should have settled on the new schedule and hope to be flying it competitively from early June, possibly starting at the Ashbourne competition on June 9<sup>th</sup>.

Perhaps the uncertainty over the new schedule has caused some people to delay the start of the competition season, or perhaps there is some other reason but I have to say that the contest calendar looks very thin. We really do need some local contests organising – these are the lifeblood of the Association, so if you have a site, why not let us use it and get people flying again. I have heard (second or third hand as always) that some people think the committee is a little 'team oriented' or 'FAI oriented'. Well I'm sorry but that's not true. What is true is that the GBR/CAA has an obligation to run 'team trials' and Centralised events as a BMFA specialist body – we can't get away from that. As I said in my first article after taking over as Chairman, we have a balanced committee which includes pilots from two classes, 'full time' judges and 'full time' officials. That helps to stop any one view from dominating. Even those of us who have flown in the UK team started in Standard Class and worked our way up – just like everyone else – and we haven't forgotten what life is like in Standard & Senior! So please give us a chance and if you have any comments or suggestions, then the address, phone & e-mail are at the top of the page. You may not catch me first time on the phone but I will reply as soon as I can.

I'm out of time now and looking forward to getting back to normal at work and in flying. It's just two weeks to the Tournoi de Champagne in France and I haven't flown for two weeks. Make the most of the light evenings – even if I can't yet!

### **Chairman**

Kevin Caton  
6 Larks Rise  
Halesworth  
Suffolk  
IP19 8JZ  
01986 874767  
kevin.caton@btpenworld.com



# Minutes of GBRCOA committee meeting 23/3/02

Allison Harrop is to be co-opted on to the committee as comp sec. However she needs to become a member of the BMFA (action AAH).

KC still to do the constitution. (Action ongoing).

SM to compile a list of trophies (action SM).

KJ to give Nick Middleton a copy of the aerobatics guide book (action KJ )

Vice chairman is still to be entered as a position in the constitution (action KJ)

The way to claim site fees is to go in the newsletter and the CD guide (action KJ&KC).

First place certificates only (action AH).

The newsletter is to be sent to the BMFA (action KC&AH).

## REPORTS

SG; £1297 in the team travel, £4630 in the general account (after the Laptop)

BA; Judges for centralised all found.

DT; Nick Middleton has sent his CV to the committee, John Hewitt senior has decided not to pursue his interest in the position. It was decided to co-opt NM as DT's assistant. DT to talk to the BMFA to see if we can get NM any expenses (action DT)

## AOB

Advert for the newsletter regarding the champs (action KC)

Questionnaire from NA will be discussed at the next meeting; NA would like feed back (action ALL)

KC is to write a letter to PRO Build to convey the evenhanded approach of the committee (action KC)

*Thanks to John Harrop for these minutes. Ed*

## Members Adverts

Large adverts and trade adverts will be charged at the following rates:-

Double page:	£32.00
Single page (A5):	£20.00
1/2 page (A6):	£16.00
Display box:(~ 1/2 A6)	£10.00

For larger ads please contact the Newsletter Editor

Advertise in Aerobatics news and get on the Internet free!

Place a ½ or full page advert in Aerobatics news and your ad will also be placed on the GBRCOA web site at no extra charge. Anyone who accesses our home page through the Internet will see your advert – that is world wide free advertising at no extra cost.

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The following conditions apply:

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- **Webra 145 Pumped engine** complete with Webra pipe and manifold. Very little use as new condition. £240 Contact Nigel Armstrong 01670 822402.
- **Excelsior 188** with Gator soft mount and EZ retracts tank etc. No servos. Finished in Pink, White and Blue, Two pack painted Fuselage, Pro-film on Wing and Tailplane. Price £220.00 ono.  
Contact: John Mee email: johnmee@compuserve.com Tel: 0116 237 4792

# **Triple Crown 2002, Maidstone**

## **Hosted by Maidstone Model Flying Club**

### **Directions to The Triple Crown**

Leave the M20 Motorway at junction 8, sign posted for Leeds Castle.

At the top of the slip road turn right over the motorway towards Leeds Castle. Take the first exit at the roundabout. Proceed straight ahead at the 2<sup>nd</sup> roundabout. At the 3<sup>rd</sup> roundabout turn right which is signposted for Sutton Valance B2163. You should now pass the main entrance to Leeds Castle almost immediately on your left. Carry on up this road for several miles until you reach a T-junction. Turn left at the T-junction signposted for Headcorn, Sutton Valance A274; follow this road for about 5 miles. As you approach Headcorn Village High Street turn left into Kings Road (next to the Green and Raleigh Cycle shop). Carry on up this road for about a mile until you see white signs on the right hand side advertising ducklings for sale. Take the next turning right immediately after these signs. At the end of this one-track road turn left at the T-junction. Continue down this road for approximately 1 ½ miles until you reach 4 or 5 farm type houses on your left. Directly opposite these houses is the entrance to the field. Drive through the first field aiming for the far left hand corner, over the bridge and into the 2<sup>nd</sup> field. **GBRCAA** signs with orange arrows will be in place on the day showing directions.

Should you have any problems with directions on the day please ring Mike LeMmon on mobile number 077760268321 or Bob Ailles on mobile 07966441240.

### **Competition Agenda**

Pilots briefing 9.30am Saturday & Sunday

Judges warm up flight 9.45am by Richard Christopher Saturday & Sunday

Commence flying 10.00am

Flying order will be drawn on Saturday at pilots briefing

There will be a one hour lunch break

The site will be open for practice on both Thursday and Friday prior to the competition.

We have been granted permission for on site camping. We have toilet facilities but no fresh water on site.

We have arranged a banquet for the Saturday night at a near-by golf course at £20 per head. There are two choices of menu which will need to be chosen early on Saturday.

Directions will be given on the day.

The nearest Travel Inn is at Junction 8 M20, Maidstone (Hollingbourne) No 170

Tel 01622 739647

If this one is full there is another back at Junction 6 Maidstone (Sandling) No 172

Tel 01622 717251 (Follow signs for Museum of Kent Life)

Any problems please let me know on 01634 849101

Bob Ailles



## GBRCAA Competition Calendar - Issue 3 May 2002

	Weekend 1	Weekend 2	Weekend 3	Weekend 4	Weekend 5
May	5 <b>Mansfield</b> (max 15 entrants) Sprt Std Sen Mast FAI (P-03) CD Trevor Plumble  <b>Sandown Park Exhibition</b> Esher Surrey	12 <b>2nd Centralised / Team Trial Event</b> <b>Ashbourne</b> FAI (PO3) CD: T.B.A Entries to Alison Harrop	19	26	
June	2	9 <b>International Tournoi de Champagne</b> <b>7th—9th</b> AMC Romilly, France Contact Person : Pascal Blauel 120 rue des Pyrénées 75020 Paris France  Tel : +33 1 43 73 77 97 Fax : +33 1 53 33 19 75 Email: pascalblauel@wanadoo.fr  <b>Ashbourne</b> Sprt Std Sen Mast FAI (P-03) CD Brian Hoare	16	23 <b>3rd Centralised / Team Trial Event</b> <b>Scotland (venue T.B.A.)</b> FAI (PO3) CD: T.B.A Entries to Alison Harrop	30 <b>Skelbrooke</b> Nr Doncaster Sprt Std Sen Mast FAI (P-03) CD Steve Dunning
July	7 <b>Triple Crown (6th—7th)</b> Team Event Maidstone, Kent CD Bob Ailles Details in next edition	14 <b>REARRANGED!</b> <b>4th Centralised / Team Trial Event</b> <b>Wroughton Aerodrome, Swindon</b> FAI (PO3) CD: T.B.A <small>Entries to Alison Harrop</small>	21	28 <b>Warboys</b> Sprt Std Sen Mast FAI (P-03) CD Clive Whitwood	

**POSTPONED**  
(Judges on hols.)  
Watch the website  
for new date.

	CD Bob Ailles Details in next edition	FAI (PO3) CD: T.B.A Entries to Alison Harrop  <b>Bedford</b> Sprt Std Sen Mast FAI (P-03) CD Brian Ball			CD Clive Whitwood	
August	4 <b>Cashmoor</b> Dorset Sprt Std Sen Mast FAI (P-03) CD Nik Middleton	11 <b>Brian Brotherton Memorial Trophy</b> Newmarket MFC, Smallwell Sprt Std Sen Mast FAI (P-03) CD George Drever	18		25 <b>BMFA Nationals (24th—26th)</b> Sprt Std Sen Mast FAI (PO3) CD: Brian Hoare	
September	1	8 <b>Skelbrooke</b> Nr Doncaster Sprt Std Sen Mast FAI (P-03) CD Steve Dunning  <b>Bedford</b> Sprt Std Sen Mast FAI (P-03) CD Brian Ball	15		22 <b>5th Centralised / Team Trial</b> Event <b>Cashmoor</b> FAI (PO3) CD: T.B.A Entries to Alison Harrop	29
October	5 <b>GBRCAA Championships</b> Venue T.B.A. Sprt Std Sen Mast FAI (P-03) CD T.B.A.	12	19		26	
	<b>Sprt</b> Sportsman Schedule	<b>Sid</b> Standard Schedule	<b>Sen</b> Senior Schedule	<b>Mast</b> Master Schedule	<b>FAI</b> FAI schedule(s)	

NB: Centralised competitions are flying the FAI schedule indicated.

Send entries to the Contest Director (CD) using the Competition Entry Form from Aerobatics News unless otherwise noted

## League Table Final Standings

### European Champs June 2001 - May 2002

Name	Final Position.	Final Total	Scotland 2001	Barkston 2001	Cashmoor 2001	Wittering 2002	Ashbourne 2002
Brandon Ransley	1	3000.000	0.00	0.00	1000.00	1000.00	1000.00
Angus Balfour	2	2952.633	994.29	0.00	948.76	980.27	978.08
Richard Howarth	3	2948.105	984.00	1000.00	964.11	955.48	902.51
David Matthias	4	2941.497	1000.00	960.42	919.78	981.08	958.93
Kevin Caton	5	2910.262	954.50	975.98	950.73	979.78	943.70
Keith Jackson	6	2856.501	0.00	968.07	964.05	0.00	924.38
Steve Underwood	7	2840.969	963.14	0.00	947.53	930.29	920.54
Malcolm Balfour	8	2767.596	923.16	0.00	910.58	933.86	898.82
John Harrop	9	2704.216	897.84	920.30	886.07	0.00	843.30
Richard Welch	10	2699.118	0.00	902.09	890.48	906.55	454.00
Richard Christopher	11	2640.917	905.04	882.30	853.58	414.45	851.28
Sam Wragg	12	2558.791	884.55	845.26	828.99	0.00	757.41
Mike Pole	13	2534.541	880.00	826.82	0.00	827.73	0.00
John Mee	14	2466.922	830.25	855.90	0.00	0.00	780.77
Arthur Silsby	15	2422.549	836.83	798.10	787.62	596.90	0.00
Alan Simmonds	16	2103.190	0.00	735.66	0.00	673.51	694.01
Peter Brett	17	1439.933	750.56	689.37	0.00	0.00	0.00
Malcolm Harris	18	924.650	924.65	0.00	0.00	0.00	0.00
Bill Allison	19	917.207	917.21	0.00	0.00	0.00	0.00
Bob Reid	20	887.327	0.00	657.43	229.90	0.00	0.00
Mark Waterman	21	807.950	0.00	0.00	807.95	0.00	0.00
Alan Wild	22	804.173	0.00	804.17	0.00	0.00	0.00
Tom Shore	23	699.314	0.00	0.00	699.31	0.00	0.00



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All ZN and PL kits come with carbon/nomex former kits and carbon endgrain balsa bulk-heads.

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All ZN Line kits come with all flying surfaces covered in contest grade balsa.  
(Servo and retract holes cut).

### **NEW** **ZN SYNERGY**

Kits in stock!  
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### **CAPRICE**

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Carbon / kevlar  
Carbon u/c                 £ 600.00

### **MADNESS 3D**

Ready covered           £ 195.00

**OPTIONAL FIXED GEAR**  
**AVAILABLE FOR ALL KITS**

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### **CAP 232 TOC**

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**NEW !! WINNER OF 2000 TOC!**

### **EXTRA 330S**

Carbon / kevlar.3mtr span, engine capacity 150cc,(D/A 150),carbon u/c,  
Carbon former kit       £ 1,175.00

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Carbon / kevlar, 2.5mtr span, engine capacity 100cc(D/A 100), Carbon u/c,  
Carbon former kit.       £ 750.00

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All PL Prod kits come with all flying surfaces, covered with contest grade balsa (servo and retract holes cut).

### SMARAGD

Carbon / kevlar £460.00

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Carbon / kevlar £460.00

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Carbon / kevlar £500.00

**OPTIONAL FIXED GEAR**

**AVAILABLE**

### TORNADO

Carbon / kevlar £500.00

### EXTRA 330s

Carbon / kevlar, 3m span ,engine capacity 150(D/A150) £1,145.00

## FIBER CLASSICS

### EXTRA 330 TOC

Ready painted in Fiber Classics own colour scheme £2,350.00  
(Custom designed option available).

### GILES 202 TOC

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(Custom designed option available).

## ENGINES

### YS

**NEW !!** YS 140 DINGO £520.00

(Available soon)

YS 140L £365.00

YS 91 £260.00

YS 63 £226.00

**NEW!!**

YS 140 FZ 2 £365.00 **NEW!!**

### OS

OS 140F1 £850.00

### WEBRA

145R £309.50

### D/A PETROL ENGINES

D/A 150 £1,145.00

D/A 100 £895.00

D/A 50 £499.00

ENGINE MOUNTS

Gator soft & safe	£40.97
Hyde 140	£118.00
Hyde 140ARI	£150.00
<b>NEW!!</b>	
PL mount for YS 140	£150.00
<b>NEW!!</b>	
ZN mount for YS 140	£150.00

MANIFOLDS

Hatori YS 120/140	£37.40
AAP power manifold	£50.00
AAP header tube	£9.50
AAP support bracket	£10.45

PIPES

Hatori 693	£125.50
F3AUK pipe 4 stroke	£60.00
F3AUK pipe 2 stroke	£60.00

TETRA

14oz tank	£8.80
16oz tank	£9.90
20oz tank	£11.00
Fuel t's	£4.10
Fuel dots	£4.50
Switch bracket	£7.35
Black 55mm wheel	£14.27 each
Red 55mm wheel	£14.27 each
Angle push-rod	£3.00
Straight push-rod	£4.00

HATORI

Silicon tail pipe	£7.95
<u>CFE</u>	
nose ring	£9.95
OS 140 nose ring	£10.95
YS 140 air filter	£19.50

RETRACTS

Supra DX 60	£41.90
Supra DX 200	
(Titanium legs)	£99.50
Giezendanner	£139.95
3/16 titanium legs	£19.75
3/16 DX legs	£10.95

ZN

Annodised horns(L)	£11.50
Annodised horns(M)	£11.50
Annodised horns(S)	£11.50
Pull-pull wheel	£15.00
70mm spinner	£38.50
76mm spinner	£42.10
82mm spinner	£42.10
98mm spin.carbon	£62.50
113mm spin.carbon	£68.00
127mm spin.carbon	£74.50
152mm spin.carbon	£92.95

PL

Annodised horns(L)	£11.50
Annodised horns(S)	£11.50
85mm spin.carbon	£47.50

APC

14 x13	£9.07
15x11	£9.07
15x12	£9.07
15X14	£9.07
15X14N	£9.07
15.5X13N	£9.07
16X10	£9.07
16X11	£9.07
16X13	£9.07
16X14	£9.07
16X16	£11.00
17X12	£11.00
14.5X12F/B	£19.95
15.5X12F/B	£19.95
<u>MK</u>	
Gear linkage	£9.65
Suspension axels	£44.50
Tail wheel	£13.50
Dual coupler(S)	£24.99
Dual coupler(L)	£24.99
55mm wheels	£8.95
2.5mmBB servo-ends	£6.39
2.5mmBB horn ends	£6.39
3 mm BB servo-ends	£6.39
3 mm BB horn ends	£6.39
YS header mount	£21.95
OS header mount	£25.95
Alloy horns	
Plastic base(S)	£5.50
Alloy horns	
Plastic base(M)	£5.50
2.5mm ball joints	£4.20
Remote glow plug set	£13.70

DUBRO

4-40 ball link	£2.96
4-40 pull-pull system	£6.75
Servo horn set	£10.50
T-style horns (L)	£4.95

GATOR

Stab adjuster kit	£10.95
Wing adjuster lit	£13.95
Wing tube set 7/8x24"	£20.85
Gator mount rubbers	£6.55

TRU-TURN SPINNERS

2.1/2" FAI	£25.50
2.1/2" FAI (LBP)	£33.50
2.3/4" FAI (LBP)	£33.50
3" FAI (LBP)	£36.00

BUILDING MATERIALS

300mm x 300mm end grain-carbon balsa	£ 21.00
300mm x 300mm nomex Panel (glass skin)	£ 15.00
300mm x 300mm nomex panel (carbon skin)	£ 23.00

LEAK FREE GASKET

YS 140	£ 15.95
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### FUTABA RADIO GEAR

9 zap W/C 2 combo	£950.00
9102 servo	£52.00
9202 servo	£44.00
9402 servo	£58.50
9204 servo	£58.50
136G servo	£34.50
3101 servo	£21.50

### **DIGITAL SERVOS**

9150 low profile	£71.50
9151 9.5 kg	£85.50

### FULL RANGE OF ACCESSORIES IN STOCK

i.e. battery packs, switches, extensions, etc.

RING FOR BEST PRICE.

**NEW ! NEW !**

- PL Prod Partner
- Fiber Classics Revolution-Pro fully moulded F3A design
- ZN Line Enigma designed by Arnold Poyet
- ZN Line Hyde Away
- Asano carbon pipes for 2 and 4 stroke(very light)
- Asano flexible manifold for YS
- Asano flexible manifold for OS
- YS 140 FZ 2
- Hyde ARI A engine mount for YS/OS

**Please ring for details and prices.**

**FOR SALE!!**

**PL SMARAGD READY TO PAINT AND COVER £1,350.00**

## ICEBREAKER 2002 HESWALL

What a marvellous setting for an Icebreaker, situated in the middle of an estuary with Wales to our left and the Wirral to our right. The weather was virtually perfect apart from a slight haze.

Due to the positioning of the strip, flights were delayed till 9.45am until the sun had moved around. The extra time wasn't put to waste with old faces reappearing on the aerobatic scene, such as Nigel Clayton with his faithful Loaded Dice. And newcomer Barry Macleod with one of John Harrops old models which his late dad Bill Harrop built.

It's been also nice to see Tom Anyon and Pete Cappelman returning to the judging scene.

The day would consist of three rounds with the Masters starting the proceedings, the strip was north facing with a north-easterly wind blowing the models in slightly. It felt like a bit deja-vu, the CD's model had engine problems from the outset, with the engine cutting immediately after take off on the first two rounds.

	Name	Rnd 1	Rnd 2	Rnd 3	Total Best 2 of 3
<b>Masters</b>					
1	D Matthias	460	484	478	<b>481</b>
2	S Wragg	359	385	392	389
3	A Simmonds	305	316	338	327
4	H Pritchard	305	322	311	316
<b>Senior</b>					
1	A Harrison	274	255	300	<b>287</b>
2	G Bankes	284	277	268	281
3	K Moss	254	257	275	266
4	N Clayton	270	255	247	263
5	R Aisbitt	233	188	236	212
6	B Hoare	0	0	296	0
<b>Standard</b>					
1	B Dillon	189	199	183	<b>194</b>
2	M Uttley	150	203	181	192
3	B Macleod	160	184	193	189

By the end of the second rounds, D Matthias was leading Masters, Graham Bankes was leading Seniors with Adrian Harrison close on his heels, and Brian Dillon leading the Standards.

During the lunch break we were entertained by one of the clubs members flying his F-15 ducted fan scale jet. Thanks to the Heswall club and its members who turned up on the day to support our cause and to help out, we had a good crowd of spectators watching the days events. A special thanks to Graham and Dave Richards (the third Judge for the day) for assisting in preparing the facilities.

The final round finished at 4.10pm ending a glorious day of flying. It was a shame more competitors couldn't have been there to take advantage of such a great site, their loss.

The results were as follows;

In Masters, Dave Matthias was first winning every round, Sam Wragg was second, Alan Simmonds was third. A good try by Hubert Pritchard who had just started flying the PO3 schedule some two weeks earlier.

In Seniors, Adrian Harrison piped Graham at the post with a brilliant last flight, with Ken Moss in Third.

And finally Brian Dillon winning the Standard Class with Martin Uttley in second suffering a broken manifold on his last flight. Newcomer Barry Macleod coming third.

Brian Hoare  
CD



Adrian Harrison's good looking ZNLine Caprise / YS140L combination

## 1st Centralised Event. Wittering. 14th April 2002

Name	Pos.	Final Total	Rnd 1	Norm	Rnd 2	Norm	Rnd 3	Norm
Brandon Ransley	1	2000.000	479.25	1000.00	480.00	1000.00	484.00	1000.00
Dave Matthias	2	1962.160	465.25	970.79	472.25	983.85	473.50	978.31
Angus Balfour	3	1960.533	453.50	946.27	467.75	974.48	477.25	986.05
Kevin Caton	4	1959.560	446.25	931.14	471.25	981.77	473.25	977.79
Richard Howarth	5	1910.950	447.50	933.75	468.00	975.00	453.00	935.95
Malcolm Balfour	6	1867.726	427.25	891.50	447.50	932.29	452.75	935.43
Steve Underwood	7	1860.589	435.50	908.71	453.00	943.75	443.75	916.84
Richard Welch	8	1813.108	433.25	904.02	420.00	875.00	440.00	909.09
Mike Pole	9	1655.450	393.50	821.07	400.50	834.38	378.00	780.99
Alan Simmonds	10	1347.022	323.75	675.53	297.25	619.27	325.00	671.49
Arthur Silsby	11	1193.796	282.25	588.94	275.50	573.96	292.75	604.86
Richard Christopher	12	828.899	397.25	828.90	134.25	0.00	414.50	0.00
Sam Wragg	13	0.000	393.75	0.00	348.50	0.00	378.75	0.00

## 2nd Centralised Event. Ashbourne. 12th May

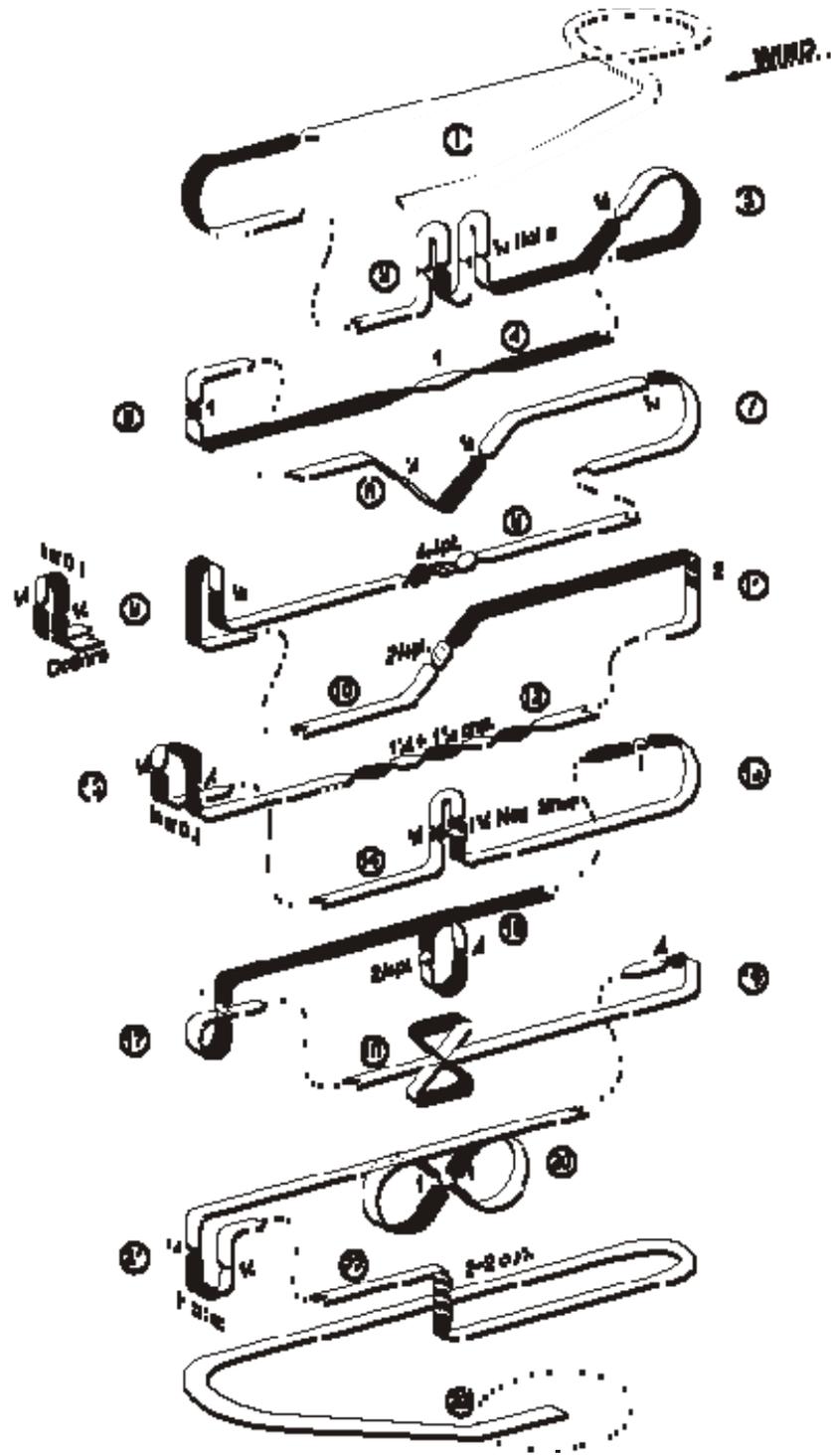
Name	Pos.	Final Total	Rnd 1	Norm	Rnd 2	Norm	Rnd 3	Norm
Brandon Ransley	1	2000.000	484.67	1000.00	480.33	1000.00	490.67	1000.00
Angus Balfour	2	1956.156	438.67	905.09	472.00	982.65	477.67	973.51
Dave Matthias	3	1917.864	451.00	930.54	466.33	970.85	464.67	947.01
Kevin Caton	4	1887.405	456.67	942.23	454.00	945.18	456.67	930.71
Keith Jackson	5	1848.762	441.00	909.90	40.00	83.28	460.67	938.86
Steve Underwood	6	1841.083	402.67	830.81	435.00	905.62	459.00	935.46
Richard Howarth	7	1805.023	430.67	888.58	43.33	90.22	449.67	916.44
Malcolm Balfour	8	1797.643	432.33	892.02	435.00	905.62	424.33	864.81
Richard Christopher	9	1702.554	406.33	838.38	405.33	843.86	421.33	858.70
John Harrop	10	1686.608	373.33	770.29	398.00	828.59	421.00	858.02
John Mee	11	1561.534	368.00	759.28	365.33	760.58	393.00	800.95
Sam Wragg	12	1514.827	355.67	733.84	353.67	736.29	382.00	778.53
Alan Simmonds	13	1388.029	290.00	598.35	312.67	650.94	361.67	737.09
Richard Welch	14	908.004	10.00	20.63	40.00	83.28	404.67	824.73

# Cashmoor 21st October 2001

Masters	Round 1		Round 2		Round 3		Total	Position
Steve Underwood	476	1000.00	483	1000.00	502.5	962.64	2000.00	1
Keith Jackson	465	976.89	468	968.94	522	1000.00	1976.89	2
Richard Christopher	418	878.15	430	890.27	443	848.66	1768.42	3
Mark Waterman	419.5	881.30	418	865.42	429	821.84	1746.73	4
Graham Reid	406	852.94	383	792.96	406	777.78	1645.90	5
Mick Burrell	390.5	820.38	337.5	698.76	416	796.93	1617.31	6
Tom Shore	377.5	793.07	373.5	773.29	390.5	748.08	1566.36	7
<b>Seniors</b>								
Steve Hartley	331	1000.00	364.5	1000.00	315	881.12	2000.00	1
Dave Stevens	296.5	895.77	345	946.50	357.5	1000.00	1946.50	2
Simon Johnson	291	879.15	325	891.63	318	889.51	1781.14	3
Adrian Harrison	266	803.63	286	784.64	287.5	804.20	1607.82	4
Russell Asbitt	246	743.20	254	696.84	238	665.73	1440.05	5
<b>Standard</b>								
Andy Waterhouse	232.5	995.72	266	1000.00	248	1000.00	2000.00	1
Steve Prideaux	233.5	1000.00	226	849.62	241.5	973.79	1973.79	2
Adam Reid	213	912.21	219.5	825.19	226	911.29	1823.50	3
Roy Shepherd	206	882.23	243.5	915.41	215	866.94	1797.64	4
<b>Sportsman</b>								
Tony Wallilow	101.5	990.24	109.5	1000.00	113.5	970.09	1990.24	1
Keith Baker	83	809.76	102.5	936.07	117	1000.00	1936.07	2
Neil Scratchley	102.5	1000.00	102.5	936.07	0	0.00	1936.07	3

*A windy but bright day for this event that saw one of the largest turnouts at this site I've ever seen. Thanks to Phil Mitchel and WMAC for hosting this event, Bob Ailles and Phil Mitchel for judging Masters, Steve Underwood and Keith Jackson for judging Senior Standard and Sportsman classes. Ed*

# Proposed Masters Ribbon Diagram





## GBRCAA SCORE SHEET PROPOSED MASTERS SCHEDULE 2002

<b>Name</b>		<b>Date :</b>		
<b>Comp :</b>				
<b>BMFA No :</b>		<b>Round No :</b>		
	<b>Manoeuvre</b>	<b>Mark</b>	<b>K</b>	<b>Score</b>
1	Takeoff sequence		1	
2	Fig M 1/4 Rolls Up & Down Exit Inverted		5	
3	Half Reverse Cuban eight exit inverted		2	
4	Slow Roll inverted to inverted		3	
5	Half Square Loop full roll up		2	
6	Cobra Roll from the top with 1/2 rolls		4	
7	Split S		1	
8	4 Point Roll		4	
9	Humpty Bump with options		2	
10	45 Degree up with 2/4 pt Roll exit inverted		3	
11	2 Turn inverted Spin		3	
12	1.1/2 Rolls reversed immediately		4	
13	Top Hat 1/4 Rolls up & down		2	
14	Stall Turn 3/4 Roll up 1.1/4 Negative Snap roll down		5	
15	Immelmann Turn Full Roll exit inverted		2	
16	Humpty Bump with 2/4 point Roll down 1/2 Roll up		4	
17	Fig 6 from the top with Full Roll down inverted entry		2	
18	Hourglass from the middle top first		4	
19	Half Square Loop to top 1/2 Roll on exit		2	
20	Outside Inside Cuban Eight with Full Rolls		4	
21	Reversed Top Hat 1/4 Roll up & down		2	
22	Two Turn Spin		4	
23	Landing Sequence		1	
<b><u>IN FLIGHT NOISE MARK</u></b>		<b>Average</b>		
		<b>Noisy</b>		
		<b>Total</b>		
<b>Flightline</b>		<b>Average Score</b>		
<b>Judge</b>		<b>Max score</b>		660

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