



Great Britain R/C Aerobatic Association

AEROBATICS

NEWS

Newsletter of the Great Britain Radio Control Aerobatic Association



January / February 2003

Pattern Ponderings

First of all I would like to thank all those who came along and voted me into the enviable position of Newsletter Editor at the AGM on 8th December. I know who you are!!

I am sure everyone would join me in thanking Keith Jackson for doing such a brilliant job with this newsletter over the past four years. I will try to maintain the high standards set by Keith but it's really a tough act to follow, so no promises. I'm not planning on making major changes to Aerobatics News since I think the format is good already. What I *will* try to do is make the text size large enough to read without a magnifier and with any luck, this will have the added benefit that I won't have to write so much!

Of course, the newsletter doesn't write itself and it can't survive without your contributions. So **PLEASE** send me anything related to F3A Aerobatics you think the readers would find interesting - news, photos, ideas, comp reports, new products you've seen or used, letters etc. etc.

Nationals Mid-Air

Most of you will be aware that I lost my Spirit prototype in a mid-air collision with a pylon racer at the Nationals last year and that the pylon pilot had put a claim into the BMFA for £70 which was withheld from the GBRCAA share of the entry fees. I am happy to report that the claim has now been dropped and the balance has been refunded to us. I would also like to take this (belated) opportunity to thank those who contributed to a whip round towards my next model which to be honest, was quite unexpected. It was a really nice gesture and I thank you all.

Competition News

The competition calendar is filling up more quickly this year but I know there are more yet to be added. If you are planning a competition, please be sure to check your proposed date with Alison Harrop so we can avoid as many clashes as possible. Neither pilots or judges can be in two places at once.

Sandown

The Elmbridge MFC have kindly offered us a stand at Sandown Park again this year where we will be trying to educate less fortunate pilots to the joys of F3A aerobatics and recruit a few new members. Kevin Caton has already volunteered to fly on both Saturday and Sunday but we will need more volunteers to fly and help out on the stand; if not for both days then just one. Anyone interested should contact Adrian Harrison on 01675 462672 for further details.

Larks Comp Correction

Due to the usual MS Publisher gremlins, some tab stops disappeared resulting in some confusion of the classes and entry fees. The correct fees are as follows (1½ x normal fees):

Sportsman: £7.50; Standard: £15.00; Senior: £21.00; Masters: £21.00; FAI: £24.00.

It looks like this will be a popular event since Brandon reports it was full by 20th January. It might still be worth getting your name on the reserve list though.

NATS 2003

No news from the BMFA yet on the Nationals. I believe that Barkston will not be available after May so all we can do is hope they can find an alternative venue for this year.

Class F-G1 Artistic Aerobatics

Sited as being more "Media Friendly" than F3A, many of you will be aware that F-G1 Artistic Aerobatics is now an official competition class whose rules are defined by the FAI/CIAM. The rules for the model are very similar to F3A, 2mx2m, max 5kg dry weight etc. but the schedules are much shorter - the 2001/2 preliminary schedule had only five manoeuvres. Information is a bit sketchy at the moment and I haven't seen any schedules for this year, but I hope to be able to fill you in with the details in future issues of Aerobatics News. I believe we should encourage the growth of F-G1 within our association, not as a replacement for F3A, but as an addition to it. Later this year, it is hoped that we will be holding a dedicated AA competition to start the ball rolling so watch this space for more information.

Flair Swallow Comp

First mentioned in the September 2002 issue of Aerobatics News, there are still plans to hold an open competition for Flair Swallow/Lark models but nothing firm yet.

Team Selection Meeting

Arriving at the latest formula for how we select our team to send to the World and European Championships has always taken up a disproportionate amount of time at AGM, or it has while I have been a member anyway. It is for this reason that the decision was taken at last year's AGM to hold a separate meeting once a year where all interested parties can debate the various issues and agree on the formula to be used during the following year to select the team we will send the year after that.

This year's team selection meeting will be held at 2:00pm on Sunday 23rd March at BMFA Headquarters, Chacksfield House, 31 St. Andrews Road, Leicester. If you currently fly FAI or have any plans to fly FAI, then the decisions taken at this meeting will affect YOU, so don't miss it.

TOC

Following the sad death just before Christmas of Bill Bennett, CEO of Sahara Hotel & Casino and sponsor of the Tournament of Champions, Mrs Bennett has announced that she will not continue with the TOC. It is hoped that someone else will step into the breach to continue this most prestigious event.

Techno Hobby Angel's Shadow

Contrary to one rumour I heard, Techno Hobby, makers of the Angel's Shadow are still in business and producing this popular model which is available from Noel Barrett Models.

Website: <http://indigo.ie/~nbarrett>

Noel tells me there are 3 versions (all still available), version 2 has shorter wings than the original while version 3 has smaller wings designed by Marco Benincasa. There are now several colour schemes to choose from.

Congratulations!

It gives me great pleasure to announce the recent engagement of John Harrop & Angie Staton. Wedding bells are planned for July this year. I am quite sure John & Angie will have already checked the competition calendar before fixing the date!

Europattern

Few people who regularly visit the discussion pages hosted on the GBRCAA website will have failed to notice the silly games being played by one anonymous visitor. This resulted in the discussion pages being removed altogether for a short while until the dust settled. Personally, I find this kind of conduct serves no purpose other than to bring our association into disrepute and believe that if you can't bring yourself to put your name on your message, it's best left unsaid! This is where the Europattern list may help as you first have to register before sending & receiving messages.

Operated by Team Manager & Webmaster, Nik Middleton, Europattern is an email based discussion list run for the benefit of GBRCAA members but open to other aerobatic pilots too. Unlike the website discussion, messages are automatically posted to your email address. To register, just click on the Europattern link on the home page of the website at www.gbrcaa.org.

Subs Reminder

If you haven't already paid your subs, then this could be the last issue of Aerobatics News you receive unless you take action soon. If you've not already done it, please send the form enclosed along with your cheque to Stuart Mellor.

Newsletter Deadlines

March / April issue: 23rd March

May / June issue: 25th May

July / August issue: 20th July

September / October issue: 21st September

November / December issue: 23rd November

Well, that's my first edition almost done - any volunteers for the next? If I ever get around to building my model, I'll see you at the comps.

Alan Simmonds

Newsletter Editor.

Welcome to the 2003 season! As I write it is bitterly cold outside – too cold for me to venture into the garage for building, but Spring is just around the corner. This is the time of year to be getting your equipment tested and ready for the competitions when they start.

At the AGM in December we welcomed two new elected committee members. John Harrop is the new Vice-Chairman and Alan Simmonds takes over as Newsletter Editor. Also, Nik Middleton was ratified as the UK Team Manager and Brian Ball has been co-opted as Competitions Promoter. Congratulations to you all and I'm sure you will enjoy the experience. Also, our thanks go to outgoing Vice Chairman Nigel Armstrong, Newsletter Editor Keith Jackson and Team Manager David Tappin. All have worked hard over the years and no doubt they will continue to support the Association in future.

The new position of Competition Promoter needs clarifying. Brian's remit is to encourage Contest Directors (past, current and future) to hold more competitions and try to coordinate these competitions so that there are no conflicts such as having two similar events in the same part of the country on the same day. Alison Harrop remains the Competition Secretary, so CDs must book their events through Alison to appear on the calendar. The distinction between the roles is important, as any overlap could cause problems, but the jobs of promoting and organising competitions can be quite time-consuming, hence the separation of the roles.

The contest calendar is filling steadily and it is good to see an increase in the number of events planned for this year. Membership Secretary Stuart Mellor has also reported an increase in renewals compared with this time last year, so I think we are looking healthy this year.

The BMFA Nationals venue and date have not yet been announced. RAF Barkston Heath is having a temporary change of use part way through the year, which means that model flying will not be allowed after the end of May. The BMFA are actively seeking an alternative venue but no announcement has been made yet. The August Bank Holiday has been left free as this is the usual weekend for the Nationals.

Other than the Nationals, we have a busy competition schedule ahead of us. There is the new Masters Class to be incorporated into local events, the FAI Centralised events, a new event at LARKS, the Triple Crown in Scotland and the GBR/CAA Championships for all classes. Also, our team travels to Poland in August for the World Championships. Other than competition flying, we are planning to hold a training day on June 1st at a central venue. This should be an excellent opportunity to fly and be coached by the more experienced pilots and judges. Holding the event mid-season should improve the chances of decent flying conditions – we hope!

Let's be hearing from you about your latest plane, engine, radio etc – and not just what is alleged to be the "top stuff". You can still fly competitive aerobatics without spending a fortune. I always enjoy reading letters from anyone who has recently started aerobatic flying. The theme is always one of great enthusiasm and willingness to learn. Keep that in mind and you will continue to enjoy aerobatic flying for many years. That, above all else, is why our association exists.

That's enough from me this time. I have building & flying to do – and I need to get a better mug shot for this the top of this column (thanks for the feedback!).

Kevin Caton



Brandon Ransley being awarded the Bill Harrop Trophy after the AGM.

3M ENGINES - A NEW ITALIAN STALLION?

Take a look at these 3M beauties from Mintor SRL in Italy! There are two 140's: 3M 140 (front induction) 3M 140R (rear induction), and the 3M 170 with it's double rear bearing (claimed to be currently the most powerful F3A engine available) completes the range. All models are rear exhaust, are pumped and fitted with twin plugs. Here's what the manufacturer has to say about the 140.

The new 3M 140 has been designed, engineered and manufactured to meet the needs of modern F3A models. Existing programs, which have very few horizontal patterns but many vertical ones as well as a very rapid operating rate, require increasingly more flexible, powerful and reliable engines that can fly 2m x 2m models, most of which weigh considerably more than 4.5 kg.



3M 140 (purple head) and 3M 170 (blue head) engines

Until now, very few engines on the market have been able to meet these demands; in fact, other than the Japanese YAMADA and OS models, there are no other valid alternatives on the competitive field.

This is why over the last decade we have shifted from single-brand championships, where displacement limits forced pilots to use 4t, to championships where any capacity was allowed, and those who did not want to face management problems and costs of a state-of-the-art 4T had no other choice but to buy an OS.

Mintor srl, a Bergamo company specialized in precision mechanics for over thirty years, has achieved its aim in providing another choice with the engines line of superior quality than those available on the market today, with top performance at a very attractive price. This engine was created from an innovative structural design and processing procedures that are not found in large-scale standard production. Hours were spent working towards the goals set the moment the project was started; from months of bench tests and flight tests, to adjustments and meticulous fine-tuning, resulting in the final version.

All the engine parts, that are normally cast, (crankcase, pumps, piston, carburettor, etc.) are machined from the solid by removing chips; instead of simply roughing out shapes, each part is crafted to the finest detail.

Only the best aeronautical aluminium is used, allowing a reduction in weight and total absence of microporosity, as well as much greater structural rigidity than even the best castings available on the market.

Finally, all the engine parts have been subjected to anodizing and anti-corrosion treatment which protects them against the effects of nitromethane.

Mintor also supply headers and aluminium & carbon pipes to match. Prices are very competitive and should be available soon from F3A UK. If these engines perform as well as they look, I'm sure we're going to be seeing a lot more of them. (Ed)



Technical Data	3M 140	3M 140R*	3M 170
Weight:	780g (27.5 oz)	790g (27.85 oz)	830 g (29.3 oz)
Power:	3.7 HP	3.7 HP	4.1 HP
Feeding:	Fuel pump incorporated		
Ignition:	Twin spark glow plug		
* 3M 140 evolution, The rear back intake improves feeding, assuring a correct fuel flow for each running. Designed for F3A IDRO championship			

Our results with different propeller combinations:

(Fuel 14% MOTUL micro, 15% nitromethane, central glow plug OS A5, rear glow plug OS F 4t)

APC 16*12	8350 rpm	8350 rpm	
APC 16.5*12	8300 rpm	8300 rpm	
APC 17*12	7850 rpm	7850 rpm	
APC 16*14	7900 rpm	7900 rpm	8150 rpm
APC 15.5*12 4 P			7900 rpm
Mejzlik 18*10			8250 rpm
Mejzlik 18*12			7600 rpm

For more performance figures on the 3M 170, check out www.rcpattern.com/2cycle.htm where Jason Shulman has posted some results (but note the test altitude!)

YS110 FZ

Just so I can't be accused of being biased towards 2 strokes, I thought I'd show you the new YS110 FZ.

Displacement	18cc
Bore	30.4mm
Stroke	24.8mm
Weight	728g

I would appreciate some feedback on this engine if anyone is planning on using one as it looks like it may be a good power plant for my next Spirit.



GBRCAA AGM 2002

Following is a copy of the Minutes of the AGM held on Sunday 8th December at The Holiday Inn, Leicester. The meeting started at 11.22am, 34 members attended.

- 1) **Apologies for absence:** N Armstrong, N Middleton, E Scott.
- 2) **Approval of AGM 2001 minutes.** Proposer J Mee, Seconded P Brett, Passed unanimously.
- 3) **Matters arising:** None
- 4) **Election of officers:** Alan Simmonds proposed to become Newsletter Editor & John Harrop to become Vice Chairman, both proposals were carried unanimously. All other committee members were prepared to stand again.
- 5) **Approval of Accounts:** (see Accounts for 2002 elsewhere in this newsletter)
Ashbourne club donation of £35.00 to go into the BH Memorial account. ACTION SG.
Approval of accounts proposed B Reid, seconded D Tappin. Passed Unanimously.
- 7) **Committee Proposals:**
Proposal 1. Rules 8. Delete second sentence and replace with "It shall consist of (a) Chairman, (b) Vice-Chairman, (c) Secretary, (d) Treasurer, (e) Competition Secretary, (f) Chief Judge, (g) Public Relations Officer, (h) Technical Secretary, (i) Newsletter Editor"
Voting: 24 for the proposal 4 against, proposal carried.
Proposal 2. Byelaw 111 Section 18. Delete existing paragraph and replace with " Each Committee member shall hold office for a period of two years. The Chairman, Secretary, Competition Secretary & Public Relations Officer shall retire in odd numbered years and the Vice-Chairman, Treasurer, Chief Judge, Newsletter Editor & Technical Secretary shall retire in even numbered years."
Voting: 25 for the proposal 3 against, proposal carried.
Proposal 3. Appendix 1. Delete in its entirety. An amendment was proposed: Delete appendix 1 and replace with: "The team selection processes shall be decided by any interested parties at a team selection meeting to be held before the end of June each year before the team selection processes starts." Proposed A Simmonds, Seconded B Hoare.
Voting: 27 for the proposed amendment 1 Against, Amendment carried.
Proposal 4. New Schedules 2003: The committee proposes that the new Sportsman & Senior schedules be introduced at the start of the 2003 season.
Voting: Passed Unanimously.
- 8) **Members Proposals.**
Proposal 5. Raise promotional scores by 15% in the Standard and Senior Classes, also pilots will have to get 3 promotional scores at 3 separate comps within a 12 month period.
Proposed by S Wragg seconded by J Mee, 3 for the proposal 26 against, proposal defeated.
Proposal 6. Limit Standard Class to .90 size engine
proposed by S Wragg seconded by B Reid, 2 for the proposal 26 against, proposal defeated.
Proposal 7. Team trials / Centralised: Only the top 4 pilots / models on the day will have their planes scrutinised i.e. weight, size & noise.
Proposed by S Wragg seconded by B Reid, 3 for the proposal 25 against, proposal defeated.
Proposal 8. Competition fees to be levelled to a flat rate. To be decided by the committee.
Proposed by S Wragg. Proposal withdrawn (after much discussion!! ed.).
Proposal 9. To allow CD's of domestic competitions to use profit after payment of expenses for the comp to provide better certificates, trophies or even prizes for certain classes.
Proposed by Steve Dunning.
Amendment added: "The formula for this will be decided by the committee."
Amendment proposed by B Michie, seconded by M Wood. 23 for the proposed amendment 1 against, amendment carried.

6) Subscriptions, Competition entry fees 2003.

Senior subscriptions to be increased by £1.00 to £31.00.
Proposed by M Wood seconded K Jackson, 26 for the proposal, 12 against, proposal carried.
Centralised fees to be increased to £20.
Proposed by P Brett, seconded B Reid. 25 for the proposal 3 against, proposal carried.
Sportsman fees to be reduced to £5.00.
Proposed by A Simmonds, seconded B Reid. 18 for the proposal 7 against. Proposal carried.
Standard and Senior Class fees stay at £10.00 & £14.00 respectively.
Master Class fees to be £14.00.
FAI Domestic fees £16.00.

10) 2003 Events:

GBRCAA Champs: CD K Caton. Venue TBA ACTION KC / AAH.
Entry fee will not be more than a double fee.

BMFA Nationals: CD N Middleton. Entry fee £25.00 + £5.00 registration.

Sandown Park: 3rd & 4th of May.

Festival of Flight: PB to find out if it will be taking place, action PB.

Wings & Wheels: 28th & 29th of June more information, action?

Triple Crown: (Scotland) venue & date to be arranged.

Two day comp at Larks: CD B Ransley, 5th & 6th of July.

Centralised dates:

1st Centralised 13-4-03 Wittering
2nd Centralised 11-5-03 Ashbourne
3rd Centralised 22-6-03 Scotland Venue TBA
4th Centralised 13-7-03 Venue TBA
5th Centralised 14-9-03 Venue TBA

GBRCAA Champs: 4th & 5th of October

World Champs: 7th to the 17th of August

Romilly: 6th to the 8th of June

11) Any other Business

A vote of thanks from the chair to all those who have supported the association with donations.

Meeting closed at 5.25 pm.

Following the meeting, the GBRCAA trophies were awarded to those winners present.

The trophy winners for 2002 were:

GBRCAA Trophies

Sportsman Class League		Chris Bond
Standard Class League		Barry McLeod
Senior Class League		Brian Hoare
Master Class League		Not Awarded
FAI Class League		Keith Jackson
MacGregor Trophy	Standard Class Championships	Andrew Waterhouse
Skyleader Trophy	Senior Class Championships	Matthew Hoyland
Mike Birch Trophy	FAI Class Championships	Brandon Ransley
Bob Hall Trophy	Best Junior Championships	Alistair Michie
Bill Harrop Trophy	Midland Centralised	Brandon Ransley

PROFIT AND LOSS ACCOUNT

For Period: 22/11/2001 - 05/12/2002

General Account		
Income:	Subscriptions	2751.00
	Newsletter Advertising	155.00
	Donation B A Ball (newsletter Sponsor)	250.00
	Bill Harrop Memorial fund	500.00
	Total Income	3656.00
Expenditure:	AGM 2001	210.00
	Telephone	37.78
	Postage	88.94
	Stationary	110.38
	Internet Costs	197.78
	Equipment Maintenance	30.14
	Nik Middleton Euro Champs Support	338.28
	Bill Harrop Memorial Fund (Trophy)	141.50
	Committee Meetings	571.55
	Computer Equipment & Software	939.99
	Training Day 27/0312002	219.65
	Team Travel Levy (subs)	306.00
	Raffle 2002 Licence Renewal	17.50
	Newsletter Costs	982.56
	Total Expenditure	4192.05
	Sub Total Profit (Loss)	(536.05)
	Depreciation - Capital Equipment	316.30
	Profit (Loss) on General Activities	(852.35)

Competitions 2002

Competitions	Income	Site Fees	Judging Exp's	Team Levy	Donations	Other Exp's	Total
Ice Breaker 7/04/02 Heswall M.F C	178.00	35.00	28.50	13.00	18.00		83.50
Wittering 14/04/02 1st Centralised	208.00	35.00	284.90	13.00	N/A		(124.90)
Skelbrooke 14/04/02 Domestic	120.00	35.00	49.50	10.00	N/A		25.50
Mansfield 05/05/02 Domestic Comp	172.00	35.00	27.50	15.00	N/A		94.50
Ashbourne 12/5/02 2nd Centralised	240.00	N/A	183.00	15.00	60.00		(18.00)
Glenrothes 23/6/02 3rd Centralised	201.00	N/A	186.50	11.00	49.00		(45.50)
Skelbrooke 30/06/02 Domestic	227.00	35.00	56.00	16.00	N/A		120.00
Bedford 14/07/02 Domestic Comp	150.00	35.00	38.00	11.00	N/A		66.00
Wroughton 14/7/02 4th Centralised	240.00	50.00	181.60	15.00	16.00		(22.60)
Warboys 28/07/02 Domestic Comp	188.00	35.00	38.55	15.00	N/A		99.45
Cashmoor 04/08/02 Domestic Comp	100.00	35.00	N/A	7.00	N/A		58.00
Skelbrooke 08/09/02 Domestic	204.00	35.00	26.00	16.00	N/A		127.00
Bedford 08/09/02 Domestic Comp	198.00	35.00	N/A	15.00	N/A		148.00
Cashmoor 22/09/02 5th Centralised	192.00	50.00	241.20	12.00	N/A		(111.20)
Champs 04/10/02 Middle Wallop	366.00	164.63	201.00	20.00		26.00	(45.63)
Cashmoor 21/10/01 Domestic Comp	205.00						205.00
Score Sheets						175.00	175.00
Nationals 2001	555.00						555.00
Nationals 2002	445.55						445.55
Nationals 2002			336.75			217.55	(554.30)
Total	4189.55	614.63	1879.00	204.00	143.00	418.55	930.37

COMPETITION ACCOUNTS

For Period: 22/11/2001 - 05/12/2002

Income:	Competition Entry fees 2002	3189.00
	Surplus Nationals 2001	555.00
	Surplus Nationals 2002	445.55
Total Income		4189.55
Expenditure:	Judging Expenses	1542.25
	Nationals 2002	554.30
	Site Fees 2002	614.63
	Team Travel Levy	204.00
	Refunds Competition account	26.00
	Donations	143.00
	Score Sheets	175.00
Total Expenditure		3259.18
Profit (Loss) on Competitions		930.37

BALANCE SHEET

For Period: 22/11/2001 — 05/12/2002

Assets:	Current Account Balance	4210.97
	Team Travel Account	27.47
	Newsletter Editor's Float	150.00
	Stock of saleable goods	1.00
	Portable Generator	1.00
	Sound Meter	20.00
	Weighing Scales	30.00
	Computer Equipment, Laptop, software	1100.00
	Trophies	559.56
	PA Sound System	50.00
	Misc Equipment	150.00
Total Assets		6300.00
Liabilities:		NIL
Assets Less Liabilities		6300.00

TEAM TRAVEL ACCOUNT

For Period: 22/11/2001 — 05/12/2002

Income:	Levy from Subscriptions	306.00
	Levy from Entry Fees	204.00
	Balance Raffle 2001	80.00
	Donations from Judges Expenses	58.00
	Donation from Scottish Aerobic Assoc	25.00
	Donation from Bob Ailles	25.00
	Donation from Ashbourne Club	35.00
	Interest	3.33
Total Income		736.33
Expenditure:	European Championships	1806.41
	Triple Crown	200.00
Total Expenditure		2006.41
Increase (Reduction) in Team Travel Fund		(1270.08)

Letters to the Editor

Apology

I would like to take this opportunity to apologise to Phil Williams of Probuild for using an image of the Hatori 698 Pipe from his website without his permission, in the November 2002 issue of Aerobic News. This was purely a mistake on my part in the rush to prepare the newsletter for printing just after the 2002 AGM, and in no way did I realise at the time that this would cause offense to him.

Keith Jackson

Former Newsletter Editor GBRCAA

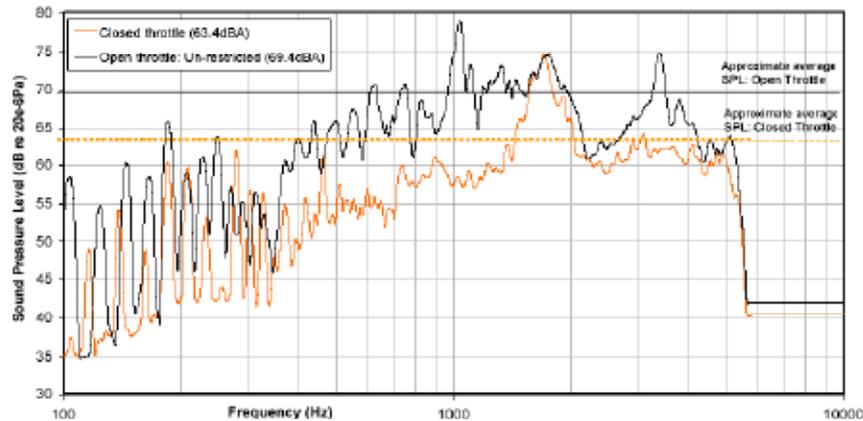
For Sale:

Futaba FC28 transmitter, latest model equiv. to ZAP. Brand new (never used) in case, including extras. DSC lead, tray, stick extensions, 1800 battery pack. Bargain £530.

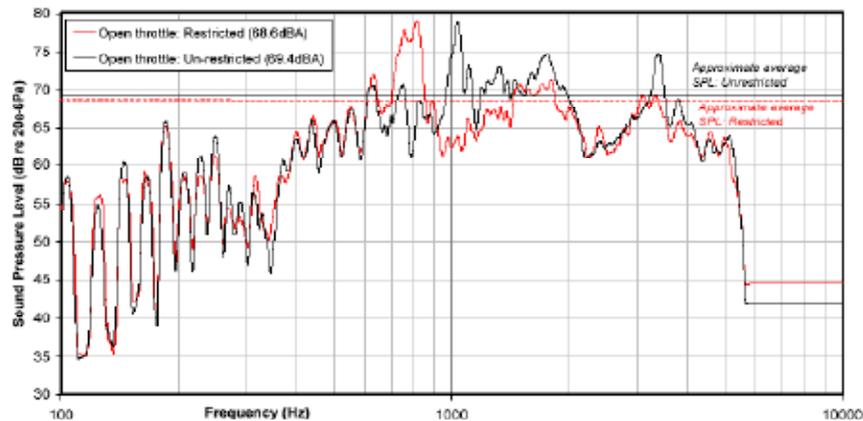
Contact Dave Matthias tel. no. 0151 424 3738

DZ Notes (continued from last issue)

Just before I sent the last newsletter for printing I was able to take some noise data from a bench mounted DZ (DZ #3 courtesy of F3A UK). The noise was measured in a semi-anechoic vehicle chamber hard mounted onto a quiet (i.e. non rattly) workmate bench. The microphone was positioned 3m away from the exhaust side of the engine to mimic the method used in the FAI noise test. The object of the test was to assess the noise level difference when the orifice was shut compared to when open, and also to see if the air intake noise levels were sufficient to cause concern. In order to assess the effects of intake noise only, the engine was rotated by an electric starter which span the engine to ~2460rpm. This is effectively the noise you hear when you are about to start a YS four stroke engine with the throttle opened up to prime the engine. It can be seen that overall noise levels rose by ~6dBA, which was significant; generally a 1dB change in noise levels is undetectable by human hearing whereas 10 dB represents a doubling of



EffectofintakeorificeNoise.AverageAweightednoiselevels:Closed63.4dBA,Open(un-restricted)69.4dBA

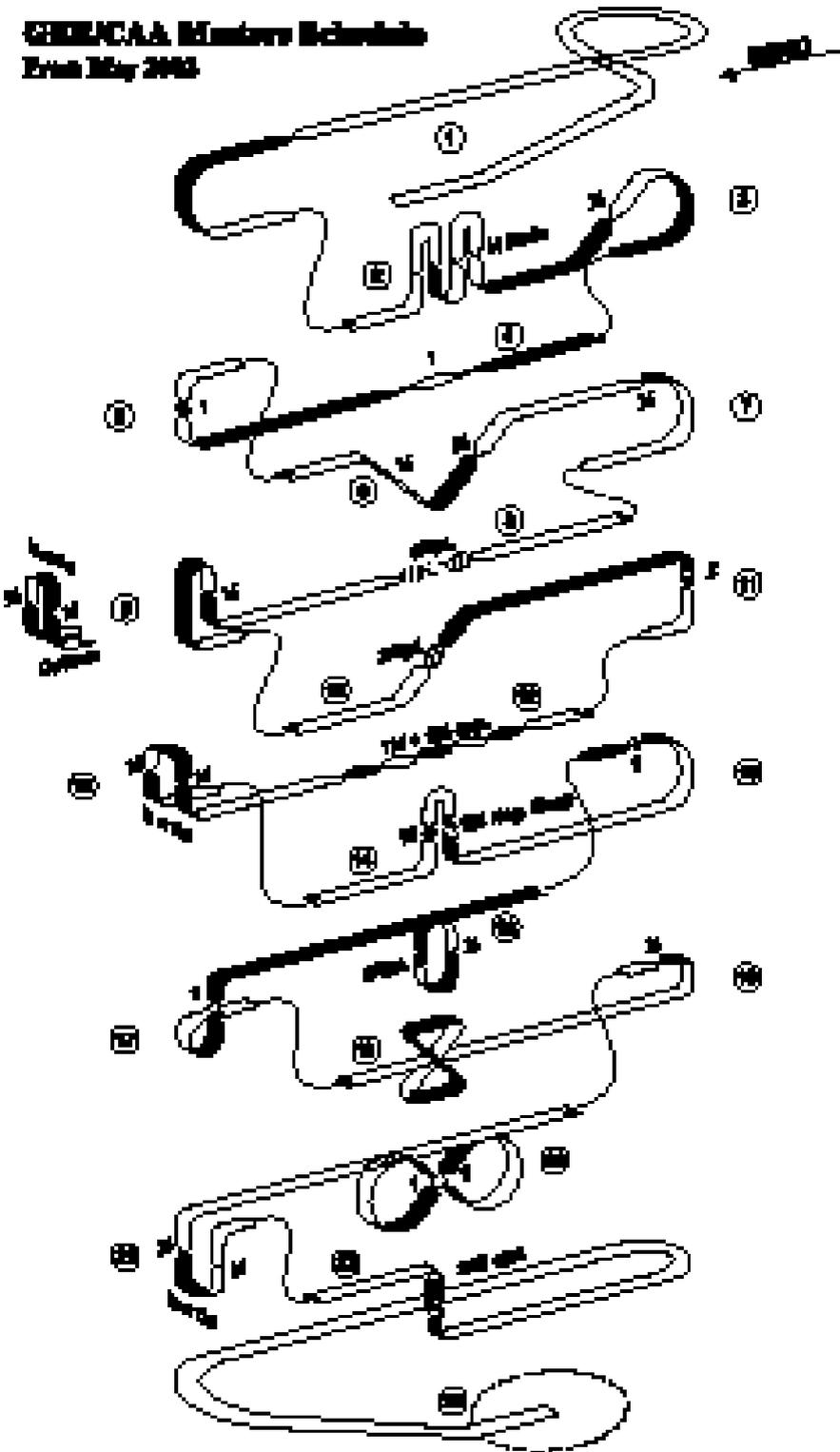


EffectofintakeYSventuri.AverageAweightednoiselevels:Openrestricted68.6dBA,Openun-restricted69.4dBA

loudness. You may question the fact that the overall noise level was only ~69 dBA and therefore is much less than the 92dBA / 94dBA limit specified by the FAI test. However it must be remembered that this test took place only at low engine speeds; if it were possible to spin the engine faster without letting it fire then the noise levels would rise to a more normal level. The important aspect here is the level difference between open and closed throttle and this 6dB change which gives a measure of the noise reduction possible by silencing the air intake of this engine.

G.B.R/C.A.A. SCORE SHEET MASTERS SCHEDULE 2002

Venue		Date:		
Name		Round No.		
Judge		Flight line		
No	Manoeuvre	Mark	K	Score
1	Take off Sequence		1	
2	Fig M ¼ Roll up ¼ Roll Down Exit Inverted		5	
3	Half Reverse Cuban Eight With ¼ Roll Up, 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 ¼ Rolls		4	
7	Split S		1	
8	4 Point Roll		4	
9	Humpty Bump With Options		2	
10	45 Degree Up 2/4pt Roll, Exit Inverted		3	
11	2 Turn Inverted Spins		3	
12	1½ Rolls Reversed Immediately		4	
13	Top Hat ¼ Roll Up & Down		2	
14	Stall Turn ¼ Roll Up 1¼ Neg Snap Roll Down		5	
15	Immelmann Turn Full Roll Exit Inverted		2	
16	Humpty Bump 2/4pt Roll Down, ¼ Roll Up Exit Inverted		4	
17	Fig 6 From The Top Full Roll Down		2	
18	Hour Glass From The Middle Top First		4	
19	Half Square Loop Up, ¼ Roll On Exit		2	
20	Outside Inside Cuban Eight With Full Rolls		4	
21	Reversed Top Hat ¼ Roll Down ¼ Roll Up		2	
22	Two / Two Spins, Opposite Immediately		4	
23	Landing Sequence		1	
IN FLIGHT NOISE MARK (NOISY-5 POINTS)				
Promotion Procedure CD to sign EITHER this score sheet or separate promotion claim form, Competitor to send it to membership secretary to claim a promotion score (395). I confirm the above has achieved an average score of <input type="text"/> on this flight				
Signed.....CD.				
TOTAL				
AVERAGE SCORE				



GBR/CAA Competition Entry Form 2003

Comp. Venue

Date:

Name:

BMFA No.

Frequencies:

Address:

1.

2.

GBR/CAA No.

You must specify an alternate frequency. Only ODD frequencies are allowed.

Telephone No:

Your car details: Reg. No. Make Colour Names of Passengers

Competition Entry Fees - please tick

Sportsman	£5	<input type="checkbox"/>
Standard	£10	<input type="checkbox"/>
Senior	£14	<input type="checkbox"/>
Masters	£14	<input type="checkbox"/>
FAI Domestic	£16	<input type="checkbox"/>
FAI Centralised	£20	<input type="checkbox"/>

Completed entry form, entry fee and a self addressed, stamped envelope must be sent to the contest director not less than three weeks prior to the contest date.

Cheques should be made payable to the GBR/CAA and dated for the date of the competition.

Important Notice to all Competitors and Contest Directors

Pre entry is a requirement of all GBRCAA competitions. If you wish to submit a late entry for a GBRCAA competition, contact the CD. If the CD is willing to accept your late entry you will have to pay double fees for the competition. If you have pre entered and fail to turn up on the day, no refunds will be given.

CD to return this part to entrant

Your entry foris accepted/rejected

Your frequency is

Remarks :

SignedCD. Date

Important note for MOD sites:

You must bring some means of identification (Driving Licence, Passport etc.) on the day.

GBRCAA Competition Calendar

Issue 1 - January 2003

	Weekend 1	Weekend 2
March	2	9
April	6 Icebreaker - Heswall All classes CD: Dave Matthias	13 1st Centralised - Wittering FAI (P-03) Entries to Alison Harrop Skelbrooke Nr Doncaster All classes CD: Steve Dunning
May	3/4 Sandown Park Model Symposium Esher, Surrey Contact: Adrian Harrison	11 2nd Centralised - Ashbourne FAI (P-03) Entries to Alison Harrop
June	1 Judges & Pilots Clinic All classes Venue TBA	6/7/8 International Tournoi de Champagne - Romilly
July	5/6 Larks 2003 2 Day Contest Market Harborough All Classes CD: Brandon Ransley	13 4th Centralised - Bedford FAI (P-03) Entries to Alison Harrop
August	3	10
		7-17 F3A World Championships Deblin, Poland
September	6/7 Triple Crown - Scotland Venue TBA 7 Skelbrooke Nr Doncaster All classes CD: Steve Dunning	14 5th Centralised - Cashmoor FAI (P-03) Entries to Alison Harrop
October	5	12

Weekend 3	Weekend 4	Weekend 5
16	23 (Sunday) Team Selection Meeting 2:00pm BMFA HQ Leicester.	30
20	27	
18	25 Mansfield (Max 15 Entrants) All classes CD: Trevor Plumbe	
15 Ashbourne All classes CD: Brian Hoare	22 3rd Centralised - Glenrothes FAI (P-03) Entries to Alison Harrop	29 Brian Brotherton Memorial Trophy, Newmarket All classes CD George Drever Skelbrooke Nr Doncaster All classes CD: Steve Dunning
20	27 Warboys All classes CD: Clive Whitwood	
17	24	31
21	28	
19	26	

GBR/CAA SCORE SHEET SPORTSMAN SCHEDULE

Venue

Date:

Name

Round No.

Judge

Flight Line

No	Manoeuvre	Mark	K	Score
1	Rectangular Takeoff Sequence		2	
2	Two Inside Loops		3	
3	Immelman Turn		1	
4	One Outside Loop		2	
5	Split S		1	
6	Cuban Eight		3	
7	Stall Turn		1	
8	Slow Roll		3	
9	Half Square Loop 1/2 Roll On Exit		2	
10	Two Turn Spins		3	
11	Rectangular Landing Sequence		2	

IN FLIGHT NOISE MARK

(NOISY – 5 POINTS)

Promotion Procedure: C.D. to sign EITHER this score sheet or separate promotion claim form. Competitor to send to the Membership Secretary to claim a promotion score. (138 points.)

TOTAL

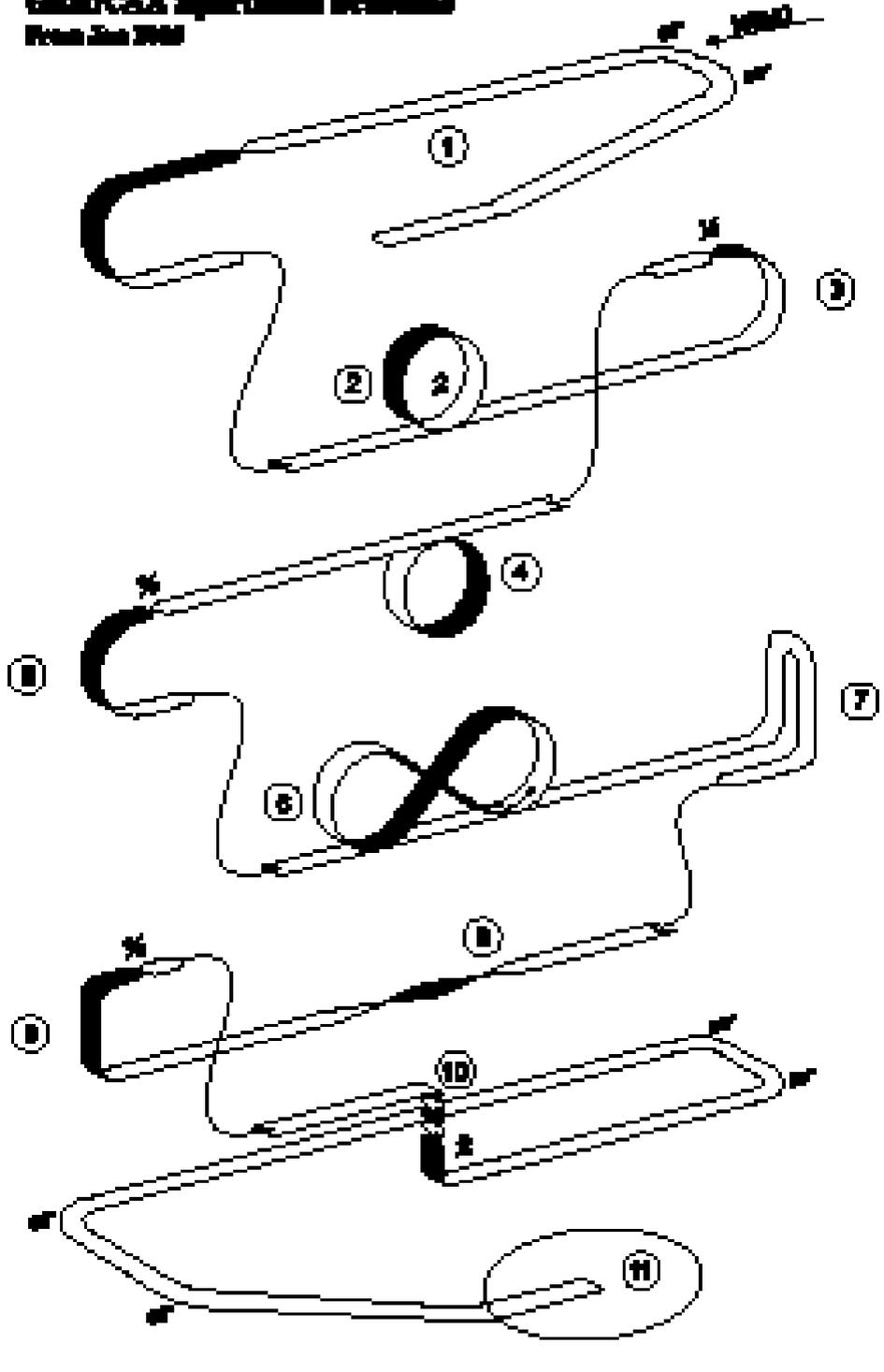
AVERAGE

I confirm the above has achieved an average of

on this flight

SignedC.D

(Max Score = 230.)



SPORTSMAN SCHEDULE

DESCRIPTION OF MANOEUVRES AND JUDGES DOWNGRADES

1. Rectangular Take-off Sequence.

A. The model should be placed on the runway by your helper facing into wind with a very slow idle and released. When released the helper should not touch the model again as this could be classed as an assisted take-off. However, when flying off grass, especially in cross wind conditions, it may be necessary to hold or give the model a short push to make the take-off safer.

• **The assisted take-off rule should only be applied when flying off tarmac type surfaces.**

B. The pilot slowly applies the power and the model moves off in a straight line, when flying speed is reached the model lifts off with wings level and a gentle rate of climb, which should not exceed an angle of 30 degrees. Power can now be reduced to allow the model to fly at the speed, which you like to fly through the schedule.

C. The pilot now proceeds to turn the model 90 degrees into a crosswind leg with the model still climbing towards his preferred baseline height, at the appropriate distance out, the model should turn 90 degree into the downwind trimming pass, which should be positioned over the 150 metres markers. When approximately level with the downwind marker the pilot initiates a turn-around manoeuvre of his choice.

• **Do not rush the take-off, a rushed take-off normally leads to a rushed flight and a lot of points lost.**

DOWNGRADES

1. Assisted take-off; Zero points. This only applies when flying off hard surfaces.
2. Model does not track straight on take-off: 1-2 points. Beware of the flying surface i.e. ruts and pot holes on grass sites.
3. Wings not level after take-off: 1 point per 15 degrees.
4. Rate of climb too steep: 1-2 points if above 30 degrees.
5. Model goes behind judges' line after take-off: zero points.
6. Model retouches runway after lift off: 1 point.
7. Bits come off model on take-off: zero points.
8. The 90 degree turns are not 90 degrees: 1 point per 15 degrees.
9. The model is flown in too close or too far out on completion of turn-around manoeuvre: 1-3 points depending on its severity. Judges you need to be careful about what is considered to be too close or too far out. The criteria set out in the judges' guide suggests 100-175m and this is acceptable.

Judges and pilots please note that the downwind trimming pass and turn-around carries no downgrades, as this is your chance to trim your model, but on completion of the turnaround the flight line depth will be downgraded as above.

2. Two Inside Loops

Pull up and perform an inside loop of constant radius immediately followed by a second inside loop of the same radius. Both loops should be concentric, of equal size and centred on the centre marker. Entry and exit must be at the same altitude.

3. Immelman Turn.

Perform a half of an inside loop followed immediately by half roll.

Judges Note: There is no hesitation between the half loop and the half roll.

4. One Outside Loop.

Push down and perform one outside loop of a constant radius centred on the centre marker. Entry and exit must be at the same altitude.

5. Split S

Perform a half roll followed by a half loop.

Judges Note: There is no hesitation between the half roll and half loop.

6. Cuban Eight

Pull up and perform five-eighths of an inside loop to 45 degree inverted downline, push and execute three-fourths of an outside loop, to a second 45 degree upright downline pull to level flight.

Judges Note: Crossover on the 45 degree downlines must be over the centre marker.

7. Stall Turn

Pull to vertical upline and execute a stall turn left or right.

Judges Notes:

The maximum radius of the pivot is ½ wingspan. If the radius exceeds 1½ wingspans: severe downgrade and more than two wingspans: zero points.

8. Slow Roll.

On the horizontal line perform a slow aileron roll.

Judges Notes:

The length of the slow roll should take no longer than 4-5 seconds, and should be of equal length either side of the centre marker and have a constant roll rate.

9. Half Square Loop, 1/2 Roll on Exit.

Pull a quarter loop into a vertical upline then pull a second quarter loop, then fly a short straight inverted line followed by a half roll.

10. Two Turn Spin.

From upright perform a two turn spin on completion of spins hold a near vertical downline on, or close to the centre marker, then pull to recover upright.

19. Rectangular Landing Sequence.

The landing sequence should be flown with the same precision as all other manoeuvres in the schedule. On completion of the last manoeuvre a short length of straight and level flight should be flown. At reduced power the model turns 90 degrees into a level crosswind leg then 90 degrees into downwind leg, followed by a third 90 degree turn to a crosswind level or descending leg, and a 90 degree turn upwind for final descending approach to runway, touching down inside the landing zone. The landing is complete after the model has rolled 10 metres or has come to rest inside the landing zone.

The landing zone is an area described by a circle of 50 metres radius or lines across a standard runway spaced 100 metres apart where the runway is 10 metres wide.

Judges Notes:

1. Model does not follow landing sequence: Zero points.
2. Landing gear retracts or wheels come off on landing: Zero points.
3. Model lands outside the zone: Zero points.
4. 90 degree turns not 90 degrees: 1-2 points.
5. Wings not level in downwind, upwind or crosswind legs: 1 point per 15 degrees.
6. Model does not track straight on runway after touchdown: 1-2 points.
7. Model bounces on touchdown: 1-2 points.
8. Model climbs and dives on approach to runway: 1-2 points.
9. Model changes heading left or right on approach to runway: 1-2 points

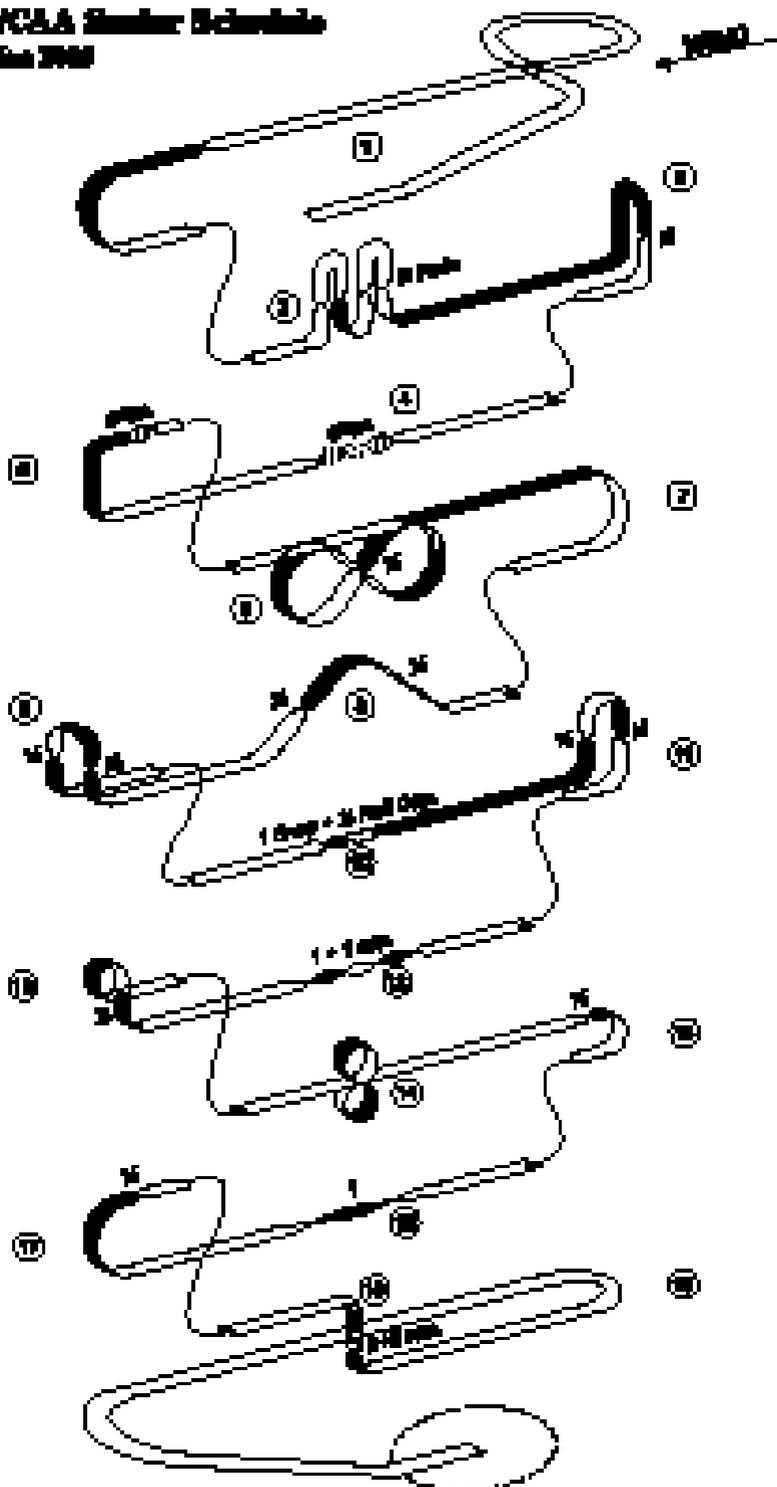
The landing will not be downgraded if:

1. If the pilot elects to sideslip to land due to crosswind conditions in which case the upwind wing will be low.
2. Wing dips due to cross wind turbulence and is corrected IMMEDIATELY.

JUDGES PLEASE BEWARE OF CROSSWIND CONDITIONS WHERE YOU NEED TO LOOK AT ISSUES REGARDING YOURSELF AND THE PILOTS' SAFETY.

GBR/CAA SCORE SHEET SENIOR SCHEDULE				
Venue		Date:		
Name		Round No		
Judge		Flight Line		
No.	Manoeuvre	Mark	K	Score
1	Takeoff Sequence		2	
2	Fig M, 1/4 Rolls Up & Down, Exit Inverted		4	
3	Stall Turn, 1/2 Roll Down		2	
4	Four Point Roll		3	
5	Half Square Loop, 2/4pt Roll On Exit		2	
6	Cuban Eight from the Top With 1/2 Roll in exit line, Exit Inverted		4	
7	Half Loop		1	
8	Cobra Roll With 1/2 Roll Up & Down		4	
9	Top Hat, 1/4 Roll Up & Down		2	
10	1 Positive Snap, 1/2 Roll opposite		5	
11	Push Push Pull Humpty Bump, 1/2 Roll Up 1/2 Roll Down		3	
12	One + One Rebound Roll		4	
13	Fig 9, 1/2 Roll Up		2	
14	Vertical Eight, Mid Entry, Top First		4	
15	Split S To Bottom		2	
16	Slow Roll		3	
17	Immelmann Turn		2	
18	Two + Two Spins Opposite		4	
19	Landing Sequence		2	
IN FLIGHT NOISE MARK		(NOISY -5 POINTS)		
Promotion Procedure: C D to sign EITHER this score sheet or separate promotion claim form. Competitor to send to the Membership Secretary to claim a promotion score. (330 points.)		TOTAL		
I confirm the above has achieved an average score of <input style="width: 80px;" type="text"/> on this flight.		AVERAGE		
Signed.....C D.				

**GENERAL Similar Schedule
From Jan 2008**



SENIOR SCHEDULE

DESCRIPTION OF MANOEUVRES AND JUDGES DOWNGRADES

1. Take-off Sequence.

A. The model should be placed on the runway by your helper facing into wind with a very slow idle and released. When released the helper should not touch the model again as this could be classed as an assisted take-off. However, when flying off grass, especially in cross wind conditions, it may be necessary to hold or give the model a short push to make the take-off safer.

• **The assisted take-off rule should only be applied when flying off tarmac type surfaces.**

B. The pilot slowly applies the power and the model moves off in a straight line, when flying speed is reached the model lifts off with wings level and a gentle rate of climb, which should not exceed an angle of 30 degrees. Power can now be reduced to allow the model to fly at the speed, which you like to fly through the schedule.

C. The pilot now proceeds to turn the model 90 degrees into a crosswind leg with the model still climbing towards his preferred baseline height, at the appropriate distance out, the model should turn upwind to start its 270 degree turn into the downwind trimming pass, which should be positioned over the 150 metres markers. When approximately level with the downwind marker the pilot initiates a turn-around manoeuvre of his choice.

• **Do not rush the take-off, a rushed take-off normally leads to a rushed flight and a lot of points lost.**

DOWNGRADES

1. Assisted take-off; Zero points. This only applies when flying off hard surfaces.
2. Model does not track straight on take-off: 1-2 points. Beware of the flying surface i.e. ruts and pot holes on grass sites.
3. Wings not level after take-off: 1 point per 15 degrees.
4. Rate of climb too steep: 1-2 points if above 30 degrees.
5. Model goes behind judges' line after take-off: zero points.
6. Model retouches runway after lift off: 1 point.
7. Bits come off model on take-off: zero points.
8. The 90 degree turn is not 90 degrees: 1 point per 15 degrees.
9. The 270 degree turn is not 270 degrees 1 point per 15 degrees.
10. The model is flown in too close or too far out on completion of turn-around manoeuvre: 1-3 points depending on its severity. Judges you need to be careful about what is considered to be too close or too far out. The criteria set out in the judges' guide suggests 100-175m and this is acceptable.

Judges and pilots please note that the downwind trimming pass and turn-around carries no downgrades, as this is your chance to trim your model, but on completion of the turnaround the flight line depth will be downgraded as above.

2. Fig M with 1/4 Rolls up & down, exit inverted

The pilot pulls to vertical up line, performs a quarter roll in the centre of the upline followed by a stall turn to a vertical downline with a second quarter roll in the centre. He then pushes through an **inverted** half loop, to start a second stall turn with 1/4 rolls in the up & downlines before exiting the manoeuvre inverted.

Judges Notes:

Stall turns: The maximum radius of the pivot is $\frac{1}{2}$ wingspan. If the radius exceeds $1\frac{1}{2}$ wingspans: severe downgrade and more than two wingspans: zero points.

If the half loop and exit are not inverted: zero points.

3. Stall Turn, 1/2 Roll Down.

Push to a vertical upline and execute a stall turn. In the centre of the downline, perform a 1/2 roll. Pull to level flight.

Judges Notes:

Stall turns: The maximum radius of the pivot is 1/2 wingspan. If the radius exceeds 1/2

wingspans: severe downgrade and more than two wingspans: zero points.

Entry not inverted. Zero points.

4. Four Point Roll.

Judges Notes:

Manoeuvre not centred severe downgrade 2-4 points.

One point missing. Zero points.

5. Half Square Loop, 2/4 pt. Roll on exit.

Judges Notes:

There must be a straight line after the quarter loop, and before the 2/4pt roll.

6. Cuban Eight from the top, 1/2 Roll in exit line, exit inverted.

Push down and execute five-eighths of an outside loop to 45 degree inverted up line then pull and execute three quarters of an inside loop.

On the second 45 degree up line perform a half roll. Then pull to recover inverted.

Judges Notes:

Manoeuvre not centred severe downgrade 2-4 points

7. Half Loop.

Pull to execute half loop to level flight.

8. Cobra roll with 1/2 rolls up and down.

Pull to 45 degree up line perform 1/2 roll, pull to inverted down line and perform second 1/2 roll, pull to recover upright.

Judges Notes:

The direction for each 1/2 roll is optional.

Model not inverted over the top: Zero points.

9. Top Hat 1/4 Roll Up & Down.

Pull to a vertical upline and execute a 1/4 roll left or right, pull to inverted flight. **Fly a straight line**, pull to a vertical downline and execute a second 1/4 roll, pull to level flight.

Judges Notes:

The Horizontal line must be inverted. If not, a score of zero points must be awarded.

The length of the horizontal line can be as long or short as required, but if flown short this should not compromise the shape of the manoeuvre. I.e. If slightly rounded across the base a severe downgrade 2 or 3 points. If flown as a humpty zero points must be awarded.

10. 1 Positive Snap Roll, 1/2 Roll Opposite, Exit Inverted.

On a horizontal line perform one positive snap roll followed by half roll opposite to inverted.

Judges Notes:

There should only be a brief hesitation between the snap roll and the half roll.

If the hesitation is too long a 2 point downgrade or more, depending on the severity of the hesitation.

11. Push. Push. Pull. Humpty Bump 1/2 Rolls Up And Down.

Push to a vertical upline and perform a half roll, then push through a half outside loop, into a vertical downline and perform a second half roll, pull to level flight.

12. One + One Rebound Roll.

On a horizontal line perform a one + one rebound roll.

Judges Notes:

The direction of the first roll is optional; the second roll must be opposite.

There is no hesitation between rolls.

13. Fig 9 1/2 Roll Up.

Pull to vertical upline and perform 1/2 roll, then pull 3/4 inside loop to level flight.

14. Vertical Eight Mid Entry Top First.

Pull and perform a inside loop, then push to an outside loop,

15. Split S To Bottom,

Perform a half roll followed immediately by a half inside loop.

Judges Notes:

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

16. Slow Roll.

On the horizontal line perform a slow aileron roll.

17. Immelman Turn.

Perform half of an inside loop followed immediately by a half roll.

Judges Notes:

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

18. Two + Two Spins Opposite.

From upright perform a two turn-spin then immediately perform a two-turn spin in the opposite direction. Hold a near vertical downline then pull to recover upright.

Judges Notes:

The spin reversal is immediate.

Forced entry: Downgrade only. Snap entry: zero points.

19. Landing Sequence.

The landing sequence should be flown with the same precision as all other manoeuvres in the schedule. On completion of the last manoeuvre a short length of straight and level flight should be flown. At reduced power the model turns 180 degrees into level or descending downwind leg, and then executes a second 180 degree turn upwind for final descending approach to runway, touching down inside the landing zone. The landing is complete after the model has rolled 10 metres or has come to rest inside the landing zone.

The landing zone is an area described by a circle of 50 metres radius or lines across a standard runway spaced 100 metres apart where the runway is 10 metres wide.

Judges Notes:

1. Model does not follow landing sequence: Zero points.

2. Landing gear retracts or wheels come off on landing: Zero points.

3. Model lands outside the zone: Zero points.

4. 180 degree turns not 180 degrees: 1-2 points.

5. Wings not level in downwind or upwind legs: 1 point per 15 degrees.

6. Model does not track straight on runway after touchdown: 1-2 points.

7. Model bounces on touchdown: 1-2 points.

8. Model climbs and dives on approach to runway: 1-2 points.

9. Model changes heading left or right on approach to runway: 1-2 points

The landing will not be downgraded if:

1. If the pilot elects to sideslip to land due to crosswind conditions in which case the upwind wing will be low.

2. Wing dips due to cross wind turbulence and is corrected IMMEDIATELY.

JUDGES PLEASE BEWARE OF CROSSWIND CONDITIONS WHERE YOU NEED TO LOOK AT ISSUES REGARDING YOURSELF AND THE PILOTS' SAFETY.



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Annodised horns (M) £11.50

Annodised horns (S) £11.50

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Annodised horns (S) £11.50

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15.5X13N	£9.07	GATOR	
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16X16	£11.00		
17X12	£11.00	TRU-TURN SPINNERS	
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15.5X12F/B	£19.95	2.1/2" FAI (LBP)	£33.50
		2.3/4" FAI (LBP)	£33.50
		3" FAI (LBP)	£36.00
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Dual coupler (L)	£24.99	300mm x 300mm nomex panel	
55mm wheels	£8.95	(carbon skin)	£23.00
2.5mmBB servo-ends	£6.39		
2.5mmBB horn ends	£6.39	LEAK FREE GASKET	
3 mm BB servo-ends	£6.39	YS 140	£15.95
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		
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Remote glow plug set	£13.70		

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- ZN Line Hyde Away
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- Asano flexible manifold for YS
- Asano flexible manifold for OS
- Jamara ARTF KITS - £149.95
- Swallow 90, Edge 540, Giles 120, and Cap 232



- Hatori pipe 698 for YS DZ140 £125.50



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