

BMFA Scale Technical Committee Newsletter - November 2012



Editorial
Andy Sephton



Many thanks indeed to all who responded to my request for email addresses. The postal distribution has been reduced significantly and is now at a manageable size. On the subject of distribution, if you hear of any BMFA Scale modeller who doesn't receive a copy of this Newsletter, please ask them to send me their email (preferred) or postal address so that I can get them onto the distribution list. Don't forget that there'll also be a copy on the BMFA Scale Tech Committee (STC) website: www.scalebmfa.co.uk.

Now, on to this issue. I'm pleased to say that Control Line are on board, Bernard Seale has kindly offered to write on the subject so we should now have a relatively complete review of the last few months of all BMFA Scale flight operations. There is also a notification of changes to the Free Flight Scale Rules and an indication of other rule changes to be discussed at the next STC meeting.

There's news of a new **Indoor RC Scale** event to be held in Birmingham next April and a programme of Indoor Events over the winter. The issue ends with a well argued proposal by Chris Allen for an amendment to the R/C flight scoring system. Enjoy your read!

BMFA Nationals at Barkston Heath, 25th - 27th August 2012



Bill Dennis RE8

Free Flight **Bill Dennis**

We were due some decent weather this year and while it was not perfect, we seemed to be existing in an oasis of relative calm on Barkston Heath with the heavens crashing all around us. Entry was a very healthy total of thirty – the same as for RC, and a good time was had by all.

On the Saturday evening, the drift took the models in the best possible direction, but overall the flying was mediocre, as modellers used the three rounds to perfect their trim. Many people do not have the benefit of access to a decent flying site, and there is little scope at the August Nats for testing. Very welcome were two flyers from New Zealand: Richard Bould and Stan Mauger, and they acquitted themselves well. In retrospect, the contest was decided on that first evening – certainly Mike Smith's electric DH10 had it wrapped up when this impressive machine tacked back towards us and glided in for a runway landing. Bill Dennis also scored a very good flight with his new RE8 while Andrew Hewitt's rubber Morane N was a delightful flyer, and ultimately took the prestigious Eric Coates trophy.



Kevin Wallace About to Release his giant (60") Rubber Powered Lacey M-10

BMFA Scale Technical Committee Newsletter - November 2012



Mike Kelsey launching his AW FK3

On the Sunday, having completed their trimming quite a few more models qualified, including Martin Fardell's Douglas O38 which was his first foray into FF scale competition. He was delighted with his effort and will be back!



Mike Smith's DH-10 floats over the crowd

By general consensus, it was felt to be a successful and enjoyable Nats and we can look forward to another one next year. From an organisational point of view, the problem we are going to get is that many of the RC fliers we have used as judges over the years are now joining in. Volunteers are required for next year please!

Radio Control Dave Knott

We had an even spread of entries over the 3 classes with 10 F4C, 11 S/O and 9 F/O.



Mike Goldby's Sopwith Dolphin flown by Ian Pallister

There were two new models this year, Richard Crapp's Westland Wessex in F4C and Jim Reeves Bristol Bullet in S/O.

The comp was well run by CD Graham Kennedy with Gordon Warburton doing the scoring. Martin Fardell and John Carpenter did a good job of keeping the crowd informed of what was flying and what it was doing.

The weather was remarkably calm for Barkston until the Monday afternoon, when it caused the cancellation of the

third round of the F4C comp.

The engine on my Hurricane decided to stop in the first round shortly after take off, which was a bit of a surprise as it had run well in the heat of the Spanish World Champs. Dave Womersley put in the best flight of the competition with his Chipmunk closely followed by Ian Bryant with his DH51. When the static marking was completed, Mick Henderson was highest scoring with his DH9a closely followed by Ian and Dave's Chipmunk in 3rd.

As we only managed to fly two rounds, the final places are worked out on just best flight score plus static. This put Ian Bryant in 1st Place for a second year with Dave 2nd and Mick 3rd.

I managed a reasonable 2nd flight to just take 4th place from Mick Reeves in 5th.

BMFA Scale Technical Committee Newsletter - November 2012

In the S/O class Steve Fish put in two very good flights with his Typhoon which also scored well on static which made him a clear winner of the class. Martin Fardell scored the highest in static scores but could not quite keep ahead of Steve overall and finished 2nd and Andy Bowman in 3rd with his Stampe

In Flying only Richard Scarbrough was competing his P51, "Trusty Rusty", for the first time after a flying accident wrote off his P47 the Friday before the Nats. Even though he had not flown it much recently "Trusty Rusty" went on to be the clear winner. John Thomas was 2nd with his Chipmunk and Alan Glover, one of our regular flight judges, was 3rd with his YT Hurricane.



Richard Scarbrough's
'Trusty Rusty'

Radio Control Graham Kennedy

Approaching the scale flightline on the Saturday morning of the Nats was like being in a dream - clear blue skies, a light breeze and wearing only two layers of clothes! Thankfully this year, the Nats were afforded much better weather than in recent times, which contributed to a far more enjoyable competition (despite the abandonment of F4c round 3).

Entries were a little down this year thanks to the proximity of the world championships (loss of our international entrants), physical injuries and the removal of weekend passes thanks to a major wedding anniversary...



Jim Reeves Bristol
Bullet

This year saw the Nats debut of the Stand-Off class, for which the entry was very pleasing. A case could be made for every entrant's ability to gain a place on the podium, which contributed to a keenly contested event. Another pleasing aspect was the fact that the 'builders' classes commanded the highest entries.



John Thomas' Chipmunk
- one of my favourite full-size types

Our two newbies performed with great credit and I'm sure we shall see them more regularly in the future. Both David Caley and Richard Welch received lots of guidance and encouragement over the weekend showing that the scale guys are indeed a helpful and friendly bunch.

All in all, it was a very positive weekend - roll on 2013, I look forward to contest directing again - if you will have me. :-)

Control Line (including a review of this year's events)

Bernard Seale



Bernard Seale's AW Siskin.

The new editor wants to include C/L Scale input, so here goes! To start with, I'll give a short overview of the 2012 season. There were a number of events, usually fly-ins often held in conjunction with Carrier Deck competitions, which in themselves are semi-scale.

15th April. Damyns Hall Airfield, Essex, courtesy of the COSMO club. The weather was windy, but Peter Tribe (Neiuport 17) and I (AW Siskin IIIA) flew in the bumpy conditions. A Carrier competition also took place.

July 8th. Marlborough MFC Scale & Carrier meeting. This takes place on one of the finest flying sites in Britain, namely the Marlborough College playing fields. I did not attend this year because of a very poor weather forecast, but the event did apparently go ahead.

28th/29th July. Modelair Scale Weekend at Old Warden Airfield. I attended on the Sunday and smashed the Siskin in the strong wind. What is heartening is the fact that the scale competition had an entry running into double figures. Most of the entries were small and unthrottled, the models

that is, but obviously the interest is high.



Stephen Turner's DH Mosquito

25th-27th August. BMFA R/C and C/L National Championships, RAF Barkston Heath. C/L Scale: 1st Peter Tribe (Neiuport 17), 2nd Stephen Turner (DH Mosquito), 3rd Mike Welch (electric powered Lysander). I had a miserable weekend, failing to start the engine in my old Gloster Gamecock and the electronic system malfunctioned in my Flying Only entry, the Hawker Hurricane.

29th/30th September. St Albans & District Model Engineering Society Exhibition, with C/L (and R/C helicopter) demonstration flying on the sports field of the Samuel Ryder Academy, formerly Francis Bacon School, where I started my teaching career in 1964!



Peter Tribe's Neiuport 17



Mike Welch's electric Lysander

BMFA Scale Technical Committee Newsletter - November 2012

7th October. Three Kings Aeromodellers Carrier & Scale event, Croydon Airport. Peter Tribe and I flew scale models.

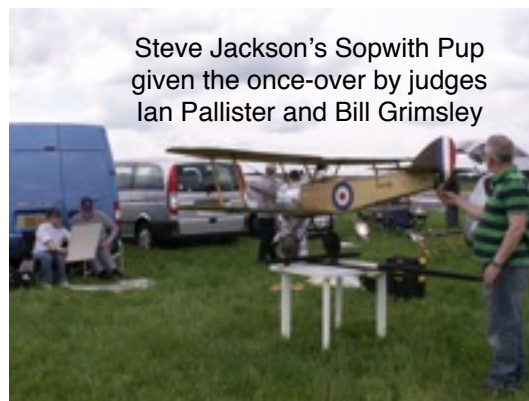
R/C Scale, Barkston Heath, 10th June 2012

Dave Knott

We arrived at Barkston to be greeted by a sunny and calm day and a good entry of 16 models spread evenly between RC Scale and the Flying Only classes.

During the day I heard unusual sayings such as it's too hot and there's not enough wind. The wind at times was so light you could take off in any direction. Pity it's never like this at the Nats!!!

In the flying only comp Dave Toyer brought his Trent Meteor which he has converted to electric, but unfortunately it suffered a speed controller failure and could not fly. Pete Fullard was flying his new Hurricane which suffered an engine cut at the wrong time and some damage to the retracts was sustained in the forced landing.



Steve Jackson's Sopwith Pup given the once-over by judges Ian Pallister and Bill Grimsley

After the first round of F/O Jim Reeves was leading with his Wedell, followed by Ian Pallister with his Tiger Moth and Mike Sollitt with his T28. In the 2nd round Ian managed a better flight and edged past Jim to take the win with Mike in 3rd place.



Richard Crapp's Westland Wessex

Mick Henderson had the highest static score in the R/C Scale Class followed by myself with my Hurricane just ahead of Mick Reeves with his Strutter. Mick Henderson's flights were not quite as good as normal and Mick Reeves had a problem on his first flight which made the final results not as close as usual. After the two flights plus static were added, I had won the Ripmax Trophy for 2012 with my Hurricane and Mick Henderson 2nd with Mick Reeves in 3rd.

It was good to see the team for the Spanish World Champs in the top 3 positions.

R/C Scale Osbournby, 22nd July 2012

Dave Knott

We had 14 flyers attend this event on a very well prepared grass strip at Osbournby. The weather was good and the wind was reasonably constant and not too strong.

We had 5 flyers entering the Stand Off class and 9 in Flying only. In Stand Off Mick Reeves had a clear lead in static scoring, but suffered from tail flutter in



John Kidd's Gotha Go-145 - another favourite, I have one on the drawing board for free flight.

BMFA Scale Technical Committee Newsletter - November 2012



Richard Scarbrough's P-47

the 2nd round and he wisely decided to land part way through his flight. The scoring was very close between John Carpenters Bulldog and Richard Crapp's Westland Wessex with John just winning in the end. Dave Charles was 3rd with his Spitfire

Jim Reeves put in the best flight of the day with his Wedell in the second round of Flying Only. It was nice to see a couple of new models with Dave Toyer's Ag Wagon and John Kidd's Gotha Go-145. The wind though not excessive did catch a lot of us out on landings and I did not see many good ones

throughout the day. Pete Fullard flew his YT T28 which flies very well and sounds good. Richard Scarbrough's YT P47 also performed well. I was flying my old Hurricane and overall just managed to beat Jim into 2nd place with Andy Bowman flying his Piper Cub getting 3rd place.

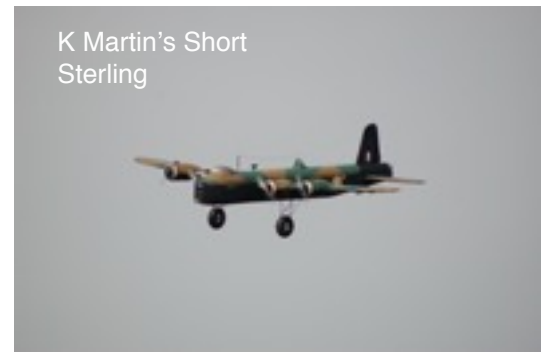
Thanks to Derek North and his wife for the lovely barbecued sausages at lunch time.

R/C Scale, Merryfield, 9th September 2012

Dave Knott

The weather was good with a gentle wind blowing down the runway and 14 flyers entered the flying only competition. K Martin brought his nice Short Stirling along to his first BMFA competition for many years. The model looked very good in the air but lost some marks as the undercarriage was none retracting due to his club site being unsuitable for retracts.

Dave Charles had intended to fly his Panther jet but had an air leak on the retracts, so flew his Spitfire instead and used an interesting sighting device for centering his manoeuvres (*Can we have more details on this, please - Ed*). The Panther went on to fly very well in the lunch break after the leak was fixed.



K Martin's Short Stirling

There were several electric aircraft at the comp and Jim Reeves was the highest placed with his Bristol Bullet.

As the weather was good I decided to fly my best Hurricane and see if the engine problems that I had at the Nats had been cured. All went well so it seems it was just a plug failure that caused the engine stop. Had to happen at the Nats though!!!!



Merryfield Flightline

Steve Fish was flying his trusty Spitfire and flew well as always and Ian Bryant had his Nats winning DH51 which also always flies well.

BMFA Scale Technical Committee Newsletter - November 2012

After the first round it was very close between myself, Steve and Ian ,so it was all open for the second round. As the afternoon progressed the wind increased, but Ian still managed to put in the best flight of the day. Steve Fish put in the second best score closely followed by myself 3.5 points behind. Overall I won a very close fought competition by 9 points (0.2%) from Steve with Ian in a close 3rd.

We all had a very good day and thanks to the club for letting us use this excellent venue.

RC Scale, Warboys, 30th September 2012

Dave Knott

We had a good turn out of 13 flyers, but it was a windy day. Martin was first to go and made a good flight in the wind, but unfortunately nosed over on landing. Mick's Strutter made a good take off and he put in a solid flight. Mick Henderson was next on with his DH9, but unfortunately a strong gust caught it as he was about to take off. The model flipped over backwards causing major damage to the model. Hopefully Mick will be able to rebuild it over the winter.

Mick's mishap made a lot of the flyers decide or confirm their decision not to risk their models in the strengthening wind. However, several did brave the conditions with John Carpenter flying his new Bronco followed by Jim Reeves with the Bullet and myself with my old Hurricane.

Pete Fullard was last to fly with his YT T28 which flew extremely steadily in the gusty wind.

After the first round was completed the wind increased above our limits, so we gave up and went home early. *(That seems to be very much the story of most of this year, hasn't the weather been just awful for outdoor model flying! Ed)*

Free Flight Scale, Selby Trophy, Barkston Heath, 7th Oct 2012

Bill Dennis



Ray Hall receiving the Selby Trophy from Bill Dennis

The event was held in perfect conditions with light to zero drift, clear skies and long grass - very pleasant indeed. Only six modellers turned up, it was not a good one to miss!

The trophy was won by Ray Hall with a perfect flight, marred only by the pilot who had slumped in his seat and could not be seen.

Other flyers were Nick Bosdet (Norwich way) Mike Kelsey (way down south) Bryan Lea, Mike Smith (Kent), and Andrew Hewitt (Midlands).

BMFA Scale Technical Committee Newsletter - November 2012

Scale Technical Committee News

Andy Sephton

The main Scale Technical Committee news this time round is the major review we are carrying out on the Scale Rule book. There'll be more on this in the next Newsletter but to give you an idea, the result will include the following changes:

- Renumbering of chapters in chronological order.
- Removal of Judges Guides to separate document.
- Implied rules within Judge Guides formalised and moved to main Rule Book.
- Removal of ambiguity.
- Increase of max weight for indoor scale models to 200 gm
- Introduction of formal declaration for free flight scale
- Indoor Scale - ban of previous winners over last five years in Open Rubber, CO2/Electric and Kit Scale events from entering Kit Scale.

Appeal for Judges: we are running short of volunteers for judging in all of the BMFA Scale disciplines, especially radio control. If you are interested in helping out in this area, please contact Chris Allen in the first instance (01249 814881 c.allen134@btinternet.com). Personally, I learned a lot about what makes a scale model competitive from the judging I've carried out for both R/C and free flight over the years. Give it a go, you might learn a lot too!

The Future of CO2 and the Electric Multi Bonus in Free Flight Scale Competition: I don't believe there is any doubt that CO2 is on the way out and also that CO2 powered models are more tricky to set up and operate than the current electronic-controlled electric powered models.

My own feeling is that CO2 should be given a bonus of, say 5% per engine to encourage the power source in it's twilight years and to reflect it's difficulty over electronic-controlled electric power. There may also be a good argument for reducing the bonus for electronic-controlled electric powered multis.

What do YOU think? Answers on a postcard, please.....

New Event - Indoor RC Scale: We've had several attempts at starting up an indoor RC Scale competition over the last few years and I now believe we are ready to take it on seriously. Accordingly, there'll be a combined free flight/RC event in Birmingham on 7th April next year - see below. RC models should be recognisable as scale models of full-size aircraft and have a 3-D fuselage. They should also conform to indoor rules in that they must be less than 200gm all up flying weight (inc batts!) and have a wing loading of less than 15 gm/sq dm. Two competitions will be held concurrently, one for scratch built models and one for ARTFs. The flying schedule will include take off and climb, figure of eight, descending circle, approach and go-around, approach and landing with extra marks for realism and presentation. Scoring and manoeuvre requirements will be similar to that for outdoor R/C. There'll be no static judging at the first competition. The hall size is about 100ft x 100ft with a ceiling height of about 30ft.

BMFA Scale Technical Committee Newsletter - November 2012

Competition Results: I've appended the Nationals Results at the end of this Newsletter, but don't forget that all results as well as copies of this Newsletter can be found on the Scale BMFA website:

www.scalebmfa.co.uk

Judging Flight Realism: There is an interesting discussion document by Chris Allen on Judging Flight Realism. It's recommended reading if you wish to get involved in future planning for our sport/hobby - the document is now attached to the end of this Newsletter.

BMFA Indoor Scale Events for 2012/13 Season

Saturday 24th November 2012: Manchester Velodrome - Combined Free flight Indoor and Free flight Scale Indoor. 9.00am to 6.00pm. £15 entry for competitors. Free flight events: F1D, F1M, F1L, Limited Penny Plane, No-Cal and Legal Eagle. **Scale events: Pistachio, Peanut and Open Scale Flying** (CO2, Electric or rubber power only) all to BMFA rules.

Sunday 7th April 2013: Change of venue to: Walsall Sports Centre (University of Walsall), Birmingham, WS13TA - Indoor free flight and introducing **Indoor RC Scale**. Practice for main champs. Events include **ARTF and scratch built RC scale, Peanut, Pistachio and Open Scale**, slot times depending on numbers. Further details tbn.

Sunday 21st April 2013: Nottingham University Sports Centre (NG7 2RJ) - Indoor Free Flight Scale Championships. Main Events for: **CO2/Electric, Open Rubber, Kit Scale, Peanut and Pistachio**. Fun events for **Mass Launch, Air Race, and Bostonian**. Two Halls. Lightweight RC welcome in second hall (no shock flyers). Further details tbn.

Finally, I'd like to pass a big 'Thank You' to all the contributors - without them, this would have been a rather short issue!

That's all for now, folks and if you have any comments, suggestions, details of forthcoming events, articles for publishing, etc, etc please get in touch:

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BMFA Scale Technical Committee Newsletter - November 2012

Scale R/C, Free Flight & Control Line Nationals Results – Barkston Heath 2012

F4C.									
Pos	BMFA	Name	Model	Flt 1	Flt 2	Flt 3	Static	Total	Norm %
1	77211	I Bryant	DH51	1703.0	1528.0		1800.0	3503.0	97.4
2	32449	D Womersley	DHC Chipmunk	1749.0	1711.0		1701.0	3451.0	100.0
3	SAA4653	M Henderson	DH9a	1391.0	1597.0		1809.5	3406.5	91.3
4	43166	D Knott	Hurricane	181.5	1683.5		1636.0	3319.5	96.3
5	15674	M Reeves	Sopwith Strutter	1453.0	1616.0		1661.0	3277.0	92.4
6	41024	J Carpenter	SA Bulldog	1512.5	1597.0		1648.0	3245.0	91.3
7	75095	D Toyer	Miles Messenger	1447.5	1488.5		1707.0	3195.5	85.1
8	52698	R Crapp	Westland Wessex	898.5	1569.0		1606.5	3175.5	89.7
9	706	J Collins	BA Swallow	1291.5	1130.0		1626.5	2918.0	73.8
10	11235	T Manley	Blackburn Blackburn	1270.5	1273.0		1390.5	2663.5	72.8

R/C Stand off Scale									
Pos	BMFA	Name	Model	Flt 1	Flt 2	Flt 3	Static	Total	
1	159884	S Fish	Typhoon	1686.0	1651.5	1562.0	1660.0	4997.5	
2	68822	M Fardell	Fairey III F	1562.0	1592.0	1431.5	1717.5	4872.0	
3	32526	A Bowman	Stampe	1605.5	1617.0	1515.0	1635.0	4857.5	
4	74966	T Ruck	MB 5	1559.0	1577.5	0	1715.0	4851.5	
5	167787	A Kennedy	Tiger Moth	1435.5	1580.0	1526.0	1710.0	4816.0	
6	80894	D Charles	Spitfire MK IX	1491.0	1582.0	1533.5	1655.0	4770.5	
7	80379	J Reeves	Bristol Bullet	1452.0	1484.5	1492.0	1645.0	4621.5	
8	53649	P Fullard	Hurricane	1346.0	429.5	1523.0	1700.0	4569.0	
9	135936	R Welch	Tiger Moth	689.5	964.0	0	1445.0	3098.5	
10	36968	S Jackson	Sopwith Pup	0	759.5	0	1707.5	2467.0	
11	42682	M Sollitt	P51 Mustang	0	0	0	0	0	

R/C Flying Only							
Pos	BMFA	Name	Model	Flt 1	Flt 2	Flt 3	Total
1	75342	R Scarbrough	P 51	1637.0	1631.0	1548.5	3268.0
2	35245	J Thomas	Chipmunk	1425.0	1534.0	1313.0	2959.0
3	54244	A Glover	Hurricane	1451.5	1267.0	1454.0	2905.5
4	SAA 217	J McCall	Chipmunk	1375.0	1426.5	1414.5	2841.0
5	115924	D Caley	PT 19	1362.0	1438.5	1386.0	2824.5
6	86453	I Pallister	Sopwith Dolphin	1364.5	1309.5	1426.0	2790.5
7	SAA 1089	W Young	Auster Mk 1	1354.0	1134.0	1432.5	2786.5
8	34438	B Perry	Glasair TD	1359.5	1263.0	1362.5	2722.0
9	42682	M Sollitt	Ryan STA	0.0	0.0	0.0	0.0

BMFA Scale Technical Committee Newsletter - November 2012

Free Flight Power										
Pos	Name	Model	Flt 1	Flt 2	Flt 3	Flt 4	Flt 5	Flt 6	Static	Total
1	B Dennis	RE8	1340.0	1715.0	0.0	0.0	0.0	1725.0	1702.5	3427.5
2	S Maugher	Auster T7c	0.0	0.0	1180.0	0.0	0.0	1355.0	1217.5	2572.5
3	G Tilston	Fokker EIII	0.0	0.0	0.0	0.0	582.5	1275.0	1283.0	2558.0
4	B Lea	DH Beaver	0.0	0.0	0.0	910.0	0.0	1125.0	1243.0	2368.0
5	M Kelsey	FK3	0.0	650.0	0.0	0.0	0.0	0.0	1488.5	2138.5
6	A Hewitt	DH6	0.0	0.0	0.0	0.0	0.0	0.0	1656.5	1656.5
7	R Bould	AOP 9	0.0	0.0	0.0	0.0	0.0	0.0	1484.0	1484.0
8	T Rimmer	Strutter	0.0	0.0	0.0	0.0	0.0	0.0	1436.5	1436.5
9	J Rimmer	Tiger Moth	0.0	0.0	0.0	0.0	0.0	0.0	1409.0	1409.0
10	S Glass	Hurricane	0.0	0.0	0.0	0.0	0.0	0.0	1361.5	1361.5

Free Flight CO2/Electric										
Pos	Name	Model	Flt 1	Flt 2	Flt 3	Flt 4	Flt 5	Flt 6	Static	Total
1	M Smith	DH10	0.0	1567.5	1977.3	1685.8	0.0	0.0	1753.5	3730.8
2	C Newman	RWD13	1742.5	0.0	0.0	1610.0	1710.0	1710.0	1661.0	3403.5
3	S Glass	Scimitar	0.0	0.0	0.0	1327.5	1235.0	1352.5	1339.0	2691.5
4	G Tilston	DH60 Moth	1100.0	0.0	0.0	1212.5	1160.0	1042.5	1452.0	2664.5
5	D Knight	Tiger Moth	900.0	0.0	0.0	0.0	0.0	0.0	1730.0	2630.0
6	R Bould	Comper Swift	0.0	0.0	0.0	0.0	1357.5	1612.5	1012.0	2624.5
7	B Nicholls	L4 Grasshopper	0.0	0.0	980.0	1282.5	0.0	0.0	1339.0	2621.5
8	J Rimmer	BE12b	0.0	0.0	0.0	0.0	990.0	0.0	1592.5	2582.5
9	I Bryant	DH80	0.0	0.0	0.0	0.0	0.0	0.0	1278.0	1278.0
10	K Wallace	Yak	0.0	0.0	0.0	0.0	0.0	0.0	1006.0	1006.0
11	P Lang		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Free Flight Rubber										
Pos	Name	Model	Flt 1	Flt 2	Flt 3	Flt 4	Flt 5	Flt 6	Static	Total
1	A Hewitt	Morane	1180.0	1300.0	1550.0	0.0	1260.0	0.0	1764.5	3314.5
2	C Newman	Comper Swift	0.0	0.0	0.0	1000.0	1250.0	1120.0	1470.0	2720.0
3	D Knight	Bristol M1	0.0	0.0	0.0	0.0	0.0	1120.0	1591.0	2711.0
4	R Granger	Lacey M10	1460.0	1540.0	1700.0	1610.0	1600.0	1650.0	903.0	2603.0
5	P Briggs	Albatros DIII	0.0	1030.0	1320.0	0.0	1530.0	0.0	830.0	2360.0
6	M Fardell	Douglas O38	0.0	0.0	0.0	0.0	0.0	1310.0	822.0	2132.0
7	K Wallace	Lacey M10	0.0	0.0	0.0	0.0	1350.0	1210.0	741.5	2091.5
8	S Maugher	Fairchild 24	0.0	0.0	0.0	0.0	1105.0	0.0	686.0	1791.0
9	L Marks	Wildcat	0.0	0.0	0.0	0.0	0.0	0.0	742.0	742.0
10	R Bould	FW 190	0.0	0.0	0.0	0.0	0.0	0.0	640.0	640.0

Scale Control Line							
Pos	Name	Model	Flt 1	Flt 2	Flt 3	Static	Total
1	P Tribe	Nieuport 17	1556.0	1596.0	1478.0	1510.0	3086.0
2	S Turner	Mosquito	936.0	932.0	0	1565.0	2499.0
3	M Welch	Lysander	558.0	0	0	1434.0	1713.0
4	B Seale	AW Siskin	0	0	0	0	0

BMFA Scale Technical Committee Newsletter - November 2012

"Pioneer and early aircraft (pre 1915).

Purpose designed reconnaissance and bomber aircraft (this does not include fighter aircraft later adapted for reconnaissance duties or fighter/bombers where the designer intended an aerobatic capability).

Touring aircraft

Passenger and cargo aircraft

Military Transports"

This definition has served us well for many years but it is a rather simplistic view which does not fully reflect full size practice.

Under this rule, unless a model is declared non-aerobatic, it is often incorrectly assumed to be fully aerobatic and capable of flying all the manoeuvres in the book. The design criteria of a full size aeroplane may indicate its performance potential, but its actual performance is dependent upon how it has been tested, its clearance for flight or release to service and many good men have died exploring these limits! The release to service will invariably have restrictions imposed upon it depending upon carriage of fuel, payload, weapons or stores or possibly because of a change of role. A vintage aeroplane may also have its performance restricted because of the need to conserve engine wear or to preserve its airframe fatigue life.

Alternatively an aeroplane not designed for aerobatic manoeuvres may, during its service life, have routinely carried out manoeuvres considered to be aerobatic.

POSSIBLE or APPROPRIATE MANOEUVRES

Many scale models are overpowered in relation to their wing loading and with excess speed and no realistic airframe stress limits or fatigue limitations, they are able to achieve an unrealistic degree of manoeuvrability and an unrealistic rate of climb. Also the propulsion systems of R/C scale models have an inverted capability and all this results in optional manoeuvres being flown, many of which would be impossible for the full size aircraft.

The question of what constitutes an 'appropriate' manoeuvre for a particular scale model is another issue that has been the subject of controversy for as long as I can remember. I am often asked to list what would be appropriate manoeuvres for a particular model and I normally respond by advising the enquirer to consider what the aeroplane was designed to do and then consider what would be typical manoeuvres for such an aeroplane.

There was an abortive attempt some years ago to award a score for the "Choice of Options", based on what would be typical options for an aeroplane being demonstrated at an airshow. Although this was a good idea in principle it was introduced without any guidance for judges and in the face of strong criticism of inconsistent scoring, the rule was withdrawn.

There is however a statement that remains in the current FAI judges Guide, (paragraph 6C.3.7) which states that "The selection of optional manoeuvres should demonstrate the fullest capabilities of the subject aircraft type modelled". There is currently no provision on the score sheet to award marks for this aspect !

Many Scale fliers carry out considerable research to determine what are appropriate and realistic manoeuvres for their model, however many assumptions are made in this regard and it is often left to the judge to decide if the model flight schedule is appropriate. The judge has the authority to challenge the validity of any manoeuvre and can request supporting evidence that the manoeuvre is appropriate or indeed possible. The judge may be in the somewhat embarrassing position of having insufficient knowledge of the prototype and of course no judge has detailed knowledge of the flight clearance of all the aeroplanes likely to appear as flying scale models.

BMFA Scale Technical Committee Newsletter - November 2012

In practice there is little or no time for the judge to give this matter any real thought, because the first time the judge is made aware of the flight schedule is when it is presented on the flightline and the competitor is waiting for the signal to start his engine.

PRESCRIBED OR LISTED MANOEUVRES

Over the years the list of prescribed optional manoeuvres has gradually grown to the current situation where we now have 24 (not counting variations e.g. Cuban eight/reverse/half/half reverse), but including dropping stores or a parachute. Just seven of these prescribed optional manoeuvres are restricted to models certified as non-aerobatic and this is discrimination against non-aerobatic models because of the smaller choice of flight manoeuvre options.

Competitors can also demonstrate a maximum of two flight functions or manoeuvres of their own choice, subject of course to the provision of evidence that such manoeuvres are appropriate to the full size. Surprisingly however, these 'open' options are rarely taken up and then only to show variations of 'listed' manoeuvres, e.g. a two or four point roll.

There are many manoeuvres seen by full size aircraft at flying displays which are not on this prescribed list and whilst it would be a good thing to have a comprehensive list, any proposed additions are more likely to increase the unbalance between aerobatic and non-aerobatic options.

There may be some scope to question whether or not the current descriptions of the prescribed manoeuvres reflect full size practice. These descriptions show the basic geometry of the manoeuvres, but because they are flown by an almost infinite variety of aeroplane types, I doubt there is much room for improvement. What is important however is the need to recognise that these descriptions are by definition 'rules' and competitors should not have to refer to the judges guide to understand the rules.

COMPULSORY MANOEUVRES

The rules have also traditionally decreed that there have to be compulsory manoeuvres; apart that is from the take-off and landing. There have been changes and a reduction in the number of these compulsory manoeuvres over the years and we currently have two, the figure 8 and the descending circle. These manoeuvres which of course are capable of being flown by any model were originally created to ensure there were 'reference' manoeuvres as a check of judging standards and also a test of the pilots control and co-ordination skills and his spatial awareness. The figure eight and the descending circle are inappropriate manoeuvres for many aeroplanes and there may be an argument that because flying standards have improved, there is now little justification for compulsory manoeuvres.

'MECHANICAL' OPTIONS

There is also the question of whether certain mechanical 'options' like retractable undercarriage or flap demonstrations are a realistic reflection of full size practice. Personally I consider these demonstrations to be anachronistic, especially since they are an essential part of the take-off and landing, as are the use of air brakes and other high lift devices. Indeed failing to use such functionality when the prototype is so equipped is rightly regarded as an error. I recognise however that for some aircraft the demonstration of controlled flight at a low airspeed and in a high drag configuration may well be a suitable manoeuvre and maybe there is scope to make these demonstrations more realistic.

JUDGING AND SCORING

The current rules decree that, "all flying manoeuvres must be judged bearing in mind the performance of the full size prototype" and the judges are required to assess the "scale realism achieved" of these scheduled manoeuvres. The remainder of the flight which inevitably includes additional manoeuvres is then subject to assessment in three aspects: Sound, Speed and Smoothness.

BMFA Scale Technical Committee Newsletter - November 2012

Realism in Flight rightly applies to the "entire flight performance", but there is clearly more to flight realism than "sound, speed and smoothness", so why only list three and only give K-factors for these three ? For some time I have felt that this is a rather inconsistent way of judging realism.

Close examination of "Sound", "Speed" and "Smoothness" also reveals some interesting anomalies:

In reality the sound that the model makes is "model sound" and the BMFA rules were changed for 2012 to reflect this, but the current FAI rules require the judge to assess "Engine sound (realistic tone and tuning)". The 'tone' of the engine cannot be separated from all the other sounds the aeroplane makes and 'tuning' has nothing to do with realism. The important issue here is that as with full size aeroplanes, the sound the model makes varies considerably depending on factors such as speed, direction of travel in relation to the observer or judge, whether climbing or diving, etc and as a result some manoeuvres will sound more realistic than others.

Speed is a very important aspect of flight realism, but it is invariably 'traded off' against 'Smoothness'. In practice many models are deliberately flown faster than is realistic in order to make the flight smoother and some models are incapable of controlled flight at a realistic speed.

Speed and Smoothness have the same K-factor, but the problem is that a lack of smoothness which is easier to observe, will invariably be down-marked more than an increase in speed which is more subjective.

There is also the question of how the speed of the model affects the judges' awareness of deviation from the straight and level. Whilst such deviation may not in itself be an error, it is an inescapable fact that slow flying models are exposed to the judges' eye for a longer period of time and deviations and errors are more readily observed.

It is also true to say that a fast flying model has an added advantage in that the model flies further during the time the judge takes his eye off the model to enter the marks on the score sheet; consequently the judge has less time in which to observe the model between manoeuvres, which discriminates against slower flying models.

The current guidance for judging smoothness also addresses attitude, specifically "nose-up or nose-down tendency". In reality this is again a very simplistic approach, because some full size aeroplanes actually fly with a nose down or nose up attitude.

I believe that flight schedule planning should also provide scope for added realism, although this aspect is not covered by the existing rules and not judged. The competitor, who plans his flight schedule carefully, as indeed a full size pilot is required to do for an air display, should be rewarded.

PROPOSALS FOR CHANGE

In order to attempt to address all these realism issues there clearly needs to be changes to the flight rules and the way in which flight realism is judged and marked.

It would not be practical to list all the aspects of flight realism and then attempt to give each one a separate K-factor. Speed and smoothness are already assessed during each manoeuvre so why not simply add the sound ?

The remaining parts of the flight and the aspects highlighted above, which are not judged as a specific manoeuvre could then all be included as one item which could be called "Overall Scale Performance" or "Flight performance" and awarded a separate K- factor. This also presents an opportunity to reduce the marking aspects on which the judges confer at the end of the flight to one.

Using this concept, I suggest the following:-

Take-off	K=10
Manoeuvres 2 to 9	K= 8
Approach & Landing	K=10
Flight Performance	K=16

BMFA Scale Technical Committee Newsletter - November 2012

A suggested definition for 'Flight Performance' is as follows:-

"Flight Performance is a subjective assessment of all aspects of the flight not covered by the specific manoeuvres 1 to 10. This includes the overall flight presentation and all the flying between manoeuvres and in addition the appropriateness or otherwise of the scheduled manoeuvres in an air display or operational scenario. Flight judges should discuss the 'Flight Performance' and attempt to agree the marks to be awarded for this item."

CONCLUSION

I have heard the argument that removing the non-aerobatic declaration would simply mean that competitors would choose to fly manoeuvres that they consider 'low risk' or 'easy options' and that the result would be a boring schedule. (e.g. everyone would choose to fly a straight flight or low pass). This is often linked to the argument that manoeuvres should have the K-factor based on some perception of the degree of difficulty.

Firstly scale flying is not an aerobatic contest and what may be an easy option for one model may be extremely difficult for another. Secondly, what may appear to be an 'easy option' will in fact be subject to more rigorous scrutiny by the judges. As for the straight flight, rest assured that the rules will be changed to make it more difficult the faster you fly.

If this revised concept for judging flight realism is adopted, there will clearly need to be a major revision of the Judges Guide. A draft is in course of preparation and will be made available in due course.