



# BALLARAT RADIO MODEL FLYING CLUB Inc.

Web site: [www.startek.com.au/brmfc](http://www.startek.com.au/brmfc)

Inc. No. A0001288M

## NEWSLETTER – March, 2010

### Committee 2009/2010

<i>President:</i>	Matt Porter	(0466 148 637)	<i>Public Officer:</i>	Roger Carrigg	
<i>Vice President:</i>	Jeff Dowsley	(0427 565 791)	<i>Safety Officers:</i>	Noel Findlay	(0412 801 287)
<i>Treasurer:</i>	Nick Katsikaros	(0438 559 985)		Graeme Allen	(0418 534 983)
<i>Secretary:</i>	Roger Carrigg	(0437 842 277)	<i>Newsletter Editors:</i>	Roger Carrigg	
<i>Publicity Officer:</i>	Matt Porter			Glenn White	(0412 641 188)
<i>Returning Officer:</i>	Roger Carrigg		<i>Field Maintenance:</i>	Max Rowan	(0409 011 160)

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The next meeting of BRMFC is to be held out at the flying field on Wednesday March 24<sup>th</sup> 2010 commencing at 7.30PM. Please come along to the meetings and support your club and be part of the decision making process. Don't forget to bring a plate for supper.

**\*\*\* BRMFC Annual Public Display – Sunday 28<sup>th</sup> March \*\*\***

### Agenda Items for the next meeting

1. Wind Farm
2. Field Maintenance
3. Annual Display 2010
4. ARF Scale Competition – Future Direction
5. Domain Name Registration

### Points of interest from the last meeting

*Extract of newsworthy items from the minutes of the last meeting. Note: Some events/activities may have concluded or been modified as circumstances change.*

#### 1. Wind Farm

Secretary checked the WestWind web site: <http://www.w-wind.com.au/> on 24<sup>th</sup> February – It was last updated on 11<sup>th</sup> February. No information relating to the Lal Lal Wind Farm.

#### 2. Field Maintenance

Max Rowan gave the meeting a rundown on field maintenance issues.

- a) Sprayed the grass growing through the matting. (*Seems to be working – 7/3/2010*)
- b) Sheep are back in the paddock so must make sure gate is closed.

#### 3. Annual Display 2010

- a) Sub-committee meeting for February 10<sup>th</sup> did not eventuate.
- b) Matt Porter has organized a display at Stockland Wendouree for Saturday 27<sup>th</sup> March to promote our flying display and sell some raffle tickets. Two crews will be required on the Saturday – one at the field doing preparation work and another at Stockland Wendouree promoting the flying display.
- c) Matt Porter has sent off the food permit to Moorabool Shire Council.

- d) Trophies still to be organized. We have adequate stock of plaques and club badges; just need engraving done for the five categories.
- e) PA system to be organized through Craig Butterworth (SLC). Secretary suggested that we should look into purchasing a modest PA system of our own. A second hand system that would suit our needs may well be quite affordable and one less thing to chase up. Something to follow up next year. The VMAA has a PA system and other equipment for loan but there's the logistics of picking up and returning to the State Field.
- f) The raffle is now underway and thirteen books were distributed to club members at the meeting. First prize is a Boomerang Trainer with OS46AX engine (purchased from Goldfields Model Supplies), second prize is a \$150 voucher courtesy of Goldfields Model Supplies. The president thanked John McLennan for his generous support.
- g) Max Rowan advised that he has ordered the toilets from Coates Hire and will contact Whitford Waste regarding the pump out.
- h) Max noted that some extra star pickets would be handy for the barrier fencing.
- i) We have core flute to make up about 6 extra road signs. This is to be done as a working bee at the field. (*The VPA weekend – March 13<sup>th</sup>/14<sup>th</sup> would be an opportune time.*)
- j) Matt Porter is to compile a duty roster for the day.

- k) Sent out pilot invitations again on 22<sup>nd</sup> February – will resend once more around 22<sup>nd</sup> March.
- l) VMAA Public Display application permit has been sent off and received.
- m) *Nick Katsikaros and Roger Carrigg put up the advertising banners on Monday 8<sup>th</sup> March at the following locations:*
  - i) 8/03/10 to 28/03/10 (Victoria Street – Ballarat Secondary College)
  - ii) 8/03/10 to 28/03/10 (Albert Street Sebastopol)
  - iii) 8/03/10 to 28/03/10 (Creswick Road – opposite showgrounds/Sports Centre)

#### 4. ARF Scale Competition – Future Direction

Still to be confirmed with the VFSAA.

The future of this event was discussed at the October 2009 meeting and the options we identified were summarized by the following.

- a) Leave as is.
- b) Offer the event slot to the VFSAA (Victorian Flying Scale Aircraft Association) as a competition round. They run an ARF section now.
- c) Convert event to an in-house only event.
- d) Offer the event slot to the VFSAA as a competition round and add an in-house only event.
- e) Scrap the event altogether.

It was decided to sound out the VFSAA first to see if they would like the slot in our calendar to run another round of competition. The date would be open to negotiation.

*Action: Secretary to contact the VFSAA to see if they are interested in another round at our field.*

#### 5. Domain Name Registration

Still on the todo list.

#### 6. VPA Model Engines Trophy

We are hosting this event on the weekend of March 13<sup>th</sup>/14<sup>th</sup>.

Field will need to be prepared beforehand.

Catering to be organized by Roger C. Canteen helpers will be required over both days.

Secretary is to get an estimated of the numbers from Henry Hutchinson. (8<sup>th</sup> March 2.00PM – Henry just rang and advised that he has 20 entrants.)

#### 7. Roy Gladman Novelty Event Post Mortem

The event held on Sunday 21<sup>st</sup> February was discussed enthusiastically to determine what improvements we could make to next year's event. The following suggestions were put forward and will be included in next year's event.

- a. Climb & Glide – Extra points for landing on the field as opposed to powering on when too low and unable to make the runway. (Clock is stopped when throttle is opened.)

- b. Carrier Deck – Points for taking off on the carrier deck.
- c. Balloon Burst – Must take off to get points for balloons burst on takeoff run.
- d. Foam cup bomb drop as a new event.

#### 8. VMAA Trophy

It was noted that the VMAA Trophy is to be held at the State Field over the weekend of 10<sup>th</sup>/11<sup>th</sup> April, however we will not be entering a team this year.



#### VMAA News

The following Model Aircraft Engines were stolen from Darien Cassidy on 1<sup>st</sup> March 2010.

1. 1946 Ohlsson "60" side port
2. 1978 Webra "60" Geared
3. 1949 Frog "160" Red Glow
4. 1949 Frog "180" Diesel
5. 1950 Frog "500" Glow x 2
6. 1965 Enya "15" Glow
7. 1968 OS Max III "15" Glow
8. 1990 PAW "80" Diesel
9. 1954 Sabre "35" Glow
10. 1948 McCoy "49" Spark Ignition
11. 1980 Taipan "15" Racing Glow x 3
12. 1948 ED Mark II 2cc Diesel (Penny Slot)
13. 1992 PAW 2.5cc Diesel
14. 1958 Glow Chief "35" Glow

Could members please help Darien's chances of recovering his treasured engines by monitoring eBay and reporting to Police any items matching the above descriptions. (Call Box Hill Crime Investigation Unit on 9890 9496.)

**State Field Purchase** – The VMAA is purchasing the State Field at Darraweit Guim from the MAAA for approximately \$270k. This is to be funded by an initial payment of \$40k and the balance to be paid by a loan from the MAAA, paid back over 20 years. Solicitors have been engaged.

#### State Field Development

- "Start up" boxes are to be reorganized. They are to be arranged in an arc instead of a straight line to eliminate the chance of props lining up with adjacent start up boxes.
- Top dressing of pits and runways to take place along with development of the E/W runway.

Anthony Mott is to be presented with an MAAA Australian record certificate at the Greensborough field on April 28<sup>th</sup>. The presentation is to be attended by the VMAA President and Editor (Murray Ellis / Joe Finocchiaro).



## New Models seen at field

Murris' Antoinette – Murri Anstis has been kind enough to furnish us with some info on this intriguing old aircraft.

The proto Antoinette was designed and built in 1909 and named after the builder's daughter, there were 8 different models up to 1912. In 1909 Hubert Latham tried to fly the English Channel and then in 1911 (6 days before Bleriot was successful), but both times dumped it in the water. The engine was one of the first liquid cooled, fuel injected V8s. The seriously under cambered wings were designed for maximum lift and penetration with 50 sq m with wing warping.



*Murris 92" span Antoinette powered by an electric motor. It was thought the vibration level from an IC engine might be too much for the delicate airframe and would spoil the scale like appearance.*

This model is built as per the full size aircraft (museum scale). It is 1/5 scale, 92 inches span and 92" length, I have powered it with a 50x50 electric outrunner motor with a 5 pack (18v) lipo battery, I seem to have heaps of power. The model is a good replica of the Antoinette 7 hanging in the London museum. The model is an ARF built in the Philippines by K&W and was purchased from Maccas Vintage Aerodrome <http://www.vintage-aerodrome.com/> in Perth. Following two test flights with an unknown C of G, I now have a better idea of the correct C of G, and hopefully by the time this is read it will be flying (in time for our display day)

Thanks for the interesting info Murri.

The photos were taken on Sunday 7<sup>th</sup> March after its inaugural "Wright Brothers" flight. Murri was supposedly doing a high speed taxi run to see how it tracked and it lifted off whilst heading east along the runway. Not having enough elevator response to sustain flight Murri thought it prudent to cut the motor and it landed a little heavily in the outfield having covered about 50m. It tracked straight lifting off very gently maintaining level wings and had plenty of power from the electric motor. Murri felt that it was nose heavy with the lead installed just behind the motor. It was resting fairly heavily on the front skid.

The front skid was cracked in the landing and Murri intended to repair that and remove some of the lead before the next flight. The following weekend after the VPA comps had concluded on the Sunday Murri was ready for another attempt. This time it was sitting decidedly on the tail skid. With perfect conditions around 4:30PM Sunday,

Murri was out on the runway again and opened the throttle. This time it roared down the runway and climbed fairly steeply, obviously tail heavy this time. The Antoinette flattened out at the top of the climb about 3 or 4m high and descended rapidly landing heavily on the nose but fortunately with wings level. There was some superficial damage – broken wires and nose skid but nothing serious. It has since been repaired.



*Murri Anstis and his much loved Antoinette. This photo was taken shortly after its brief & unintentional test flight.*

The CofG is very critical with under cambered wings and this wing is symmetrical in both plan view and cross-section. Ie the camber is the same on the leading and trailing edges. Murri has a good idea now where the CofG should be – just a little forward of the main wheels. It should sit on the ground resting lightly on the front skid.

Let's keep our finger crossed that the next flight is a success.

Richard Turner has a new model – moving on from his trainer aircraft. This one is PC9 powered by an OS46AX engine and was photographed at the field on Sunday 7<sup>th</sup> March. They are a popular model, fly very well and also have good landing habits. It's a relief when you get a model that doesn't have a tendency to bounce on touchdown – so many do though.



*It's good to see new modellers moving on to their next and more advanced aircraft. Richard Turner is seen here on Sunday 7<sup>th</sup> March with his new PC9 with OS 46AX engine.*

Richard has progressed quite rapidly having spent a considerable amount of time on the flight simulator during his learning stages.

Mike Faulkner has been working on a VQ Pilatus Porter over the last few weeks. It's a big model with a 9 foot wingspan and is powered by an OS160FX two stroke motor with a Pitts style muffler. Just before it was ready to be test flown, Mike had a call from Col Taylor Models telling him not to fly it under any circumstances until he received an upgraded wing joiner aluminium tube. Apparently some had failed in flight and the manufacturer was replacing the wing tube with a heavier walled replacement. (Don't know about those that had failed).



Mike Faulkner with his 9 foot wingspan Pilatus Porter powered by an OS160FX engine. Photo was taken on Sunday 7<sup>th</sup> March.

Anyway Mike received the tube in the mail the week before it was test flown on Saturday March 6<sup>th</sup> (The day of the big storm in Melbourne). Murri Anstis had the honour of doing the test flight and on all accounts it went quite well. The OS160FX had plenty of power and manages to draw fuel successfully from the tank which is located some 150-200mm behind the firewall. The design obviously had petrol motors in mind.

Mike brought the Pilatus out again the next day (Sunday 7<sup>th</sup> March) for another flight. Murri had one flight but just as the second flight was about to get under way we noticed a problem with the starboard aileron – it was hanging down. We all thought the servo arm had come off but it turned out to be the servo rails attached to the mounting plate had come adrift. The problem has since been rectified and the Pilatus awaits its next mission. Mike suggested that it would make a good lolly dropper with its large sliding doors. A tray could be fitted in the fuselage with the door open. Simply banking to the open door and a bit of top rudder the lollies should slide out. Well in theory anyway!



## Crash Report

Peter Evans had an unfortunate incident last Sunday (21<sup>st</sup> March). Whilst flying an old 46 size Extra to test his new radio gear, the model rolled on takeoff and crashed at the end of the runway. Peter was dumbfounded thinking what the hell has gone wrong. He said the model was flown successfully a couple of days beforehand to test the new radio gear. To all who saw it happen it appeared to be a case of reversed ailerons.

The wreckage was brought back to the pits and on examination the ailerons were found to be reversed. At least it's a relief to know what caused the crash.

What happened? Well as it turned out Peter flew the Extra with the servos that were in the model using the receiver from the new set a day or two ago but decided to replace the aileron servo with one from the new set and overlooked checking the travel direction. And it was unfortunately the opposite direction! The existing servos in the Extra weren't Hitec and unbeknown to Peter they travelled in the opposite direction.

Peter is a member who has a good safety record and rarely makes a mistake like this so it shows how easily it is to get caught out with a trivial oversight that destroys a model. Fortunately it was an old model used as a test bed, but it could have been a scale model with years of work.



## Tips & Tricks

**Servo travel direction** – If you ever change a servo particularly an aileron servo make sure you check the travel direction before flight. One would expect that servos of a particular brand all have the same travel direction but not necessarily across different brands.

In the “old” days before you could change travel direction on the transmitter, servos were marked with a dot to denote different travel direction. I (Roger) have an old set of Kraft Series 75 that has two of the four servos marked in that way.

See the Crash Report column above for the consequences of servos that travel in opposite directions unbeknown to the operator.



## Events

### Warrnambool Fun Fly by Graeme Allen

On Friday the 5<sup>th</sup> March, four brave souls from the Ballarat Club being Mat Werner, Rick and Pam Pimblott and Myself, ventured down to Warrnambool to take part in the their Annual Fun Fly which was held over two days being the 6<sup>th</sup> and 7<sup>th</sup>.

The trip down was an absolute shocker and it wasn't until about 50 km outside of Warrnambool that the rain stopped and to my surprise, the weather was quite pleasant in the evening at around 7 p.m.

It wasn't so good for poor old Mat though when he arrived around 10pm or so at night with him not being able to find the field and so he had to camp out on the road for the night.

Much to Mat's surprise when he woke the next morning, he found he was only 3 or 4 hundred metres away but just couldn't see it for the fog.

On the Saturday morning, we ventured out to the field and conditions weren't all that bad to start with but as the day went on, things became worse.

The edge of the large storm that went through Melbourne also skirted the Warrnambool field and it was a dash on

several occasions to throw the tarps over the models, however, we still managed to get two flights in for the day.

The Sunday was a much better day and I think we all had around 4 or 5 flights each up until around 2pm when it was time to pack up and start the long journey home, all but Mat that was who I think stayed on until the end of the event.



A line up of models at the Warrnambool Open Day. Looks like Mat Werner is doing some adjustments to his Extra. No doubt it was in the air a fair bit!!!

The class of models at the event was reasonably mixed between civilian and military with the larger percentage being ARF type models but also some very nice scratch builds as well.

I think there were unfortunately about 3 fatalities for the weekend but all in all, the event was enjoyable.

I would recommend you put it on your to do list for next year as I think it is a nice spot and one of the very best fields to fly at. (Thanks for the article Graeme – I was expecting some payback!!! Ed.)

**VPA Model Engines Trophy** by Glenn White

An annual event at our field for as long back as I can remember has been the Model Engines Trophy event for pattern flyers. This year the event was held on March 13<sup>th</sup> and 14<sup>th</sup>. I don't know how they do it but they always seem to pick good weather, this year conditions were near perfect.

Our club doesn't have to do a lot of organizing as they look after themselves we just provided the canteen.



Some of our members soaking up the sunshine while taking in the event.

I arrived out at the field at 8.30 and by that time most of the flyers were there and ready to go. I must say the field looked great, some of our members had been out there in the week doing a lot of work.

Henry runs a tight ship and had things underway by 9.15. This year there was only one flight line I think due to difficulty in finding judges.



As you can see the aircraft all look very similar being built to a formula.



I can't help but wonder why they don't fit larger diameter wheels. The weight/drag penalty would be far outweighed by fewer undercarriage problems. Not all fields are bowling greens – ours certainly isn't.



Managed to snap this one just as it lifted off.

There were around twenty pilots flying over the two days. There are four classes beginning with Sportsman and going through to Masters. It is always interesting to see the latest pattern ships; it looks like electric is getting popular.

One or two of our members showed some interest so it is on the cards that they may compete next year. You can fly the "Sportsman" schedule with any model that has some vertical. I have pinned that schedule on our notice board.



Poor "old" Henry (right) had his problems on top of running the event. He ran into radio problems with his model and almost lost it on his first flight. Thinking the Rx was at fault I (Roger) brought a JR 7 channel synthesized Rx out on Sunday but his Graupner Tx does not support PCM 'S'. He then found a spare Rx in his flight box but that did not solve the problem – there seems to be an unwanted mix between throttle & aileron. Move the throttle and the ailerons move a bit and the amount varies by the aileron trim lever position. Makes for a very attention-grabbing flight! Hopefully Henry has found the problem by now.

Model Engines had generously donated a 2.4GHz Hitec Aurora 9 radio set complete with receiver and four HS-5485HB digital servos to be given away over the weekend, Henry decided to put all the pilot's names in a hat and then draw out a winner. It came as a nice surprise that before the draw we were asked to give a list of names of the club members that helped out in the canteen over the two days; these were then put into the draw. After the presentations were made (see results further on) the draw was made and the winner of the radio was our Peter Evans, not bad for an hour's work cooking the B.B.Q.



Peter Evans with the Hitec 2.4GHz Aurora 9 radio set he won when his name was drawn at the VPA event. Set was donated to the VPA by Model Engines as a prize to commemorate the 30<sup>th</sup> anniversary of the Model Engines Trophy.

On behalf of Peter we would like to thank Model Engines for donating such a wonderful prize and the VPA for putting our members in the draw.

All in all it was a good weekend and I am sure we will see them back again next year maybe with some of our members flying.

## Coming Events

### Annual Display Day – 28<sup>th</sup> March

It certainly doesn't seem like twelve months have passed since that last one, but as everyone is well aware the BRMFC Annual Display for 2010 is on this coming Sunday. As with any time we hold an event there is hope that we will be blessed with fine weather on the day and a good turnout from the public and visiting pilots to make the event a flying success, pun intended...

Firstly, I wish to thank everyone for all of the effort that has been put in up to this point, I also remind you all that there is still a little prep work that needs to be undertaken to make the event run smoothly on Sunday. On Saturday we are holding a stall at Stocklands Wendouree from around 9:00am to 4:00pm to hand out flyers and sell raffle tickets. Anyone who might be able to spend a couple of hours there please put up your hand and let me know what time would suit you and we will try and get a good spread of people there over the entire day. For anyone that might want to help in a slightly more physical manner, also on Saturday there will be a working bee at the field to have a bit of a clean up around the place, erect signs and barriers, mark out flight lines and startup boxes, etc. This will kick off around 10:30 and shouldn't take too long if there is a reasonable turnout.

For the event on Sunday I have emailed a roster to everyone on the email list with the varied duties that need to be performed and I have also placed one on the notice board in the club house. If you are on the roster and you can't fill your nominated slot then please let me know at the meeting on Wednesday night and I will change it to suit.

I need to send out a thank you to Richard Turner, Len Astbury, Graham Waterhouse and Jeff Dowsley for your efforts in cleaning the field up before the Pattern event on the 13<sup>th</sup>/14<sup>th</sup> of this month. The place looks like it is in top nick and has greatly lessened the work load for the working bee on Saturday.

It was great to see the large turnout of club members at the field today (21<sup>st</sup> March), I hope to see you all again at the meeting this Wednesday night.

Regards

Matt Porter

El-Presidente (As Mr. Waterhouse says)



## Event Calendar

March 6 <sup>th</sup> (Sat.)	VFSAA Sport Scale Round 2 – State Field.
March 6 <sup>th</sup> /7 <sup>th</sup>	Annual Fun Fly – Warrnambool.
<b>March 13<sup>th</sup>/14<sup>th</sup></b>	<b>VPA Model Engines Trophy – Yendon.</b>
<b>March 28<sup>th</sup></b>	<b>BRMFC Annual Display – Yendon.</b>
April 10 <sup>th</sup> /11 <sup>th</sup>	VMAA Trophy – State Field.
April 18 <sup>th</sup>	State Champs F4C & ARF Scale – P&DARCS.
April 23 <sup>rd</sup> – 25 <sup>th</sup>	WWII & Military Scale – Wagga Wagga.
May 1 <sup>st</sup> /2 <sup>nd</sup>	Sunraysia Aero Modellers Fun Fly - Mildura.
May 2 <sup>nd</sup>	NFG Twins & More – State Field.
May 15 <sup>th</sup> /16 <sup>th</sup>	TCMAC Scale rally – Albury



May 16<sup>th</sup> Mid May Muster, Scale Fun Fly –  
Bairnsdale  
May 22<sup>nd</sup> (Sat.) VFSAA Sport Scale /ARF – State Field.  
May 23<sup>rd</sup> OS Day – P&DARCS  
June 12<sup>th</sup>/13<sup>th</sup> VFSAA – VicScale Trophy – Shepparton  
Sept 11<sup>th</sup>/12<sup>th</sup> VFSAA Sport Scale/Rally – Albury

October 10<sup>th</sup> State Champs ARF & Large Scale –  
P&DARCS

That's all for now. Good flying.  
G.W & R.C.

Henry Hutchinson has provided us with the final results after the 102 competition flights.

## Final Results

### Model Engines Trophy 02/10

Held 13<sup>th</sup>/14<sup>th</sup> March 2010

Competitor	Flight 1	Flight 2	Flight 3	Flight 4	Flight 5	Flight 6	Total
<b>Advanced</b>							
<b>1 Greg Hede</b>	1000.0 277.00	1000.0 255.33	1000.0 255.00	1000.0 259.67	1000.0 290.33	1000.0 332.67	<b>5000.00</b>
<b>2 Darren Williams</b>	800.24 221.67	994.78 254.00	742.48 189.33	821.57 213.33	918.49 266.67	728.46 242.33	<b>4277.55</b>
<b>Expert</b>							
<b>1 Gavin Wallis</b>	873.38 292.00	1000.0 345.33	1000.0 339.33	1000.0 335.33	968.94 322.33	1000.0 344.67	<b>4968.94</b>
<b>2 Peter Hill</b>	1000.0 334.33	995.17 343.67	926.33 314.33	885.69 297.00	928.86 309.00	934.24 322.00	<b>4784.59</b>
<b>3 Bob Hurst</b>	885.34 296.00	909.27 314.00	896.86 304.33	902.58 302.67	1000.0 332.67	910.06 313.67	<b>4618.77</b>
<b>4 Rob Clarke</b>	891.33 298.00	872.59 301.33	862.48 292.67	952.29 319.33	931.86 310.00	896.52 309.00	<b>4544.58</b>
<b>5 David Carkeek</b>	711.86 238.00	893.82 308.67	922.40 313.00	956.26 320.67	817.64 272.00	856.87 295.33	<b>4446.98</b>
<b>F3A</b>							
<b>1 Bill Bloodworth</b>	1000.0 427.00	1000.0 432.00	1000.0 441.00	1000.0 429.00	1000.0 424.00	1000.0 468.00	<b>5000.00</b>
<b>2 Tom Bloodworth</b>	848.56 362.33	897.38 387.67	814.82 359.33	898.21 385.33	891.51 378.00	791.31 370.33	<b>4350.47</b>
<b>3 Fernando Monge</b>	750.20 320.33	823.30 355.67	769.46 339.33	831.39 356.67	895.44 379.67	816.95 382.33	<b>4136.55</b>
<b>4 Cliff McIver</b>	804.06 343.33	801.70 346.33	762.66 336.33	780.11 334.67	878.93 372.67	799.15 374.00	<b>4063.94</b>
<b>5 Dennis Travassaros</b>	758.78 324.00	822.53 355.33	758.88 334.67	777.00 333.33	878.93 372.67	816.24 382.00	<b>4053.58</b>
<b>6 David Gibbs</b>	636.22 271.67	772.38 333.67	614.51 271.00	745.92 320.00	818.40 347.00	709.40 332.00	<b>3682.32</b>
<b>7 Graham Scott</b>	0.00 0.00	0.00 0.00	520.03 229.33	635.59 272.67	798.74 338.67	658.12 308.00	<b>2612.48</b>

## Sportsman

<b>1 Will Crossman</b>	1000.0	968.65	1000.0	1000.0	1000.0	979.93	<b>4979.93</b>
	187.33	195.67	191.00	181.00	196.67	195.33	
<b>2 Doug Dorrat</b>	992.88	1000.0	958.12	974.22	989.83	1000.0	<b>4956.93</b>
	186.00	202.00	183.00	176.33	194.67	199.33	
<b>3 Ted Knowles</b>	727.76	754.13	820.24	906.08	925.42	846.15	<b>4252.02</b>
	136.33	152.33	156.67	164.00	182.00	168.67	