

2010 Issue 5
Sept/Oct



NEWSLETTER AWARDS 07 08

CompassSport



LINCOLN ORIENTEERING GROUP - WWW.LOGONLINE.ORG.UK

LOG-NEWS



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Photographs from LOG's first ever Midsummer Madness Chasing Sprint, August 5th 2010, held at the University of Lincoln. Clockwise from top left: the rival clubs' banners floating gently in the summer breeze; competitors making their way around the maze section; the HALO team proudly displaying their victory in the inaugural Lincolnshire Challenge Shield; Liam Harrington (LOG) first home in the chase and 'the disqualified' line up for the mass start in the chase. Report inside...

ED'S BIG BIT



Urban racing and the Nopesport league is the focus of this newsletter, with our own Lincoln city race and the London event, a race that is fast becoming the one to do in the UK, featuring heavily. Whilst we can never hope to challenge the likes of DVO, SYO and other clubs further afield with our traditional 'cross-country' events, due primarily to the limitations of our wooded terrain, we can rest in the knowledge that our city provides us with an area that ranks amongst the very best in this country for urban racing. Steve Bones continues to develop the map and the addition of

Arboretum adds much to a map that already has some highly varied areas. The next, and possibly the last, addition to this fantastic map would be the Minster school and the area surrounding it, as I think this would add some further technicality to the west end part. Go on, Steve, you know it makes sense!

Looking ahead, we are now only three weeks away from the CompassSport Trophy final at Burbage Moor—the first time we've made it to this stage. The opposition will be strong, in particular FVO from Scotland—winners for the last three years, but I'm hopeful that, with a good turn-out from the club, we can do ourselves justice and make it into the top 4. So, get the 17th October in your diary and let's see if we can repeat the heroics of our earlier

performance this year at Shouldham Warren!

On the training front, Sean mentions in his chairman's address that EMOA are putting on another raft of courses for club members. Last year's event was cracking, with LOG benefiting to the tune of three qualified planners, one level one coach, one controller and two mappers. Please make every effort to support this day again—the advert is later in the newsletter and further details are on the website.

We also ran a mapping day in-house a few weeks ago and I'm hopeful that the seven eager participants will be producing a range of training and event maps over the next few months for us all to enjoy!

See you at Burbage, if not before...

Paul Murgatroyd

Chairman's Sound Byte



The Lincoln City Race was held on the 5th of September, where we had a tremendous turn out of over 200 competitors. I think the joint weekend with Sheffield and extra advertising in *CompassSport* magazine certainly paid off. Thanks to Liam for planning some good courses and Ranald for controlling on the day. From people's comments on the day I believe the vast majority of competitors had a great day out.

Many thanks to all the helpers also at the event. For a small club like LOG it can sometimes be a bit difficult to get enough people to fill all the jobs on a larger event like the city race, but we managed with very little difficulty! I think everyone who wanted a run managed to get out on the course sometime during the day.

Talking of city races, I have just come back from taking part in the London City Race. Liam and myself made a

weekend out of it, whilst Andrea, Ali, John Mather and Paul M came down by train on the Saturday. This was my first time at the event and I must say it's a great area to run in, with the obvious large amount of famous landmarks in the area. If you have not competed in this race, I would thoroughly recommend giving it a go next year.

We have had one new member join the club in the last 2 months and I would therefore like to welcome Jeanne Gaudin. Jeanne is currently in this country teaching at two primary schools in Lincoln. Not wanting to put anyone in the club to shame, but she has already been to three Thursday night training events and one East Midlands league event, which shows great commitment already!

The next events coming up this year are all part of the Winter Series. As previously mentioned, we are going to target the South of our area, with 2 events in Sleaford, 2 around Grantham and 2 in the Stamford area. Thanks to Paul M we now have planners for each of the events. I realise this will

be a bit further for many of our members to travel to, but please make every effort to support your club and the planners by making every effort to attend at least some of the events, if not all.

EMOA are putting on another training event to be held on Saturday 11th December at Trent University. There will be courses for Planners, Organisers, Controllers and Mappers. All these courses are free to LOG members, so please give them your full support. There is also a Coaching course that runs over three days 20th & 27th November and 11th December, again at Trent University. The cost for this course is £200, but a bursary is available for those willing to provide coaching for their club on completion of the course.

Finally, this year's AGM will be held on Wednesday 20th October at the Golden Eagle pub on Lincoln High Street, starting at 7.30pm. Please can all members try and make this meeting.

Sean Harrington

FUTURE LOG EVENTS

2009/10

- 30.09.10 *Training Session - South Common - Fitness*
- 07.10.10 *Training Session - West Common - Technique*
- 14.10.10 *Training Session - West Common - Fitness*
- 17.10.10 **CompassSport Trophy Final—Burbage Moor**
- 21.10.10 *Training Session - Riseholme Park - Technique*
- 23.10.10 **Winter Series #1 - Sleaford Town (North) (Amanda Roberts)**
- 28.10.10 *Training Session - Riseholme Park - Fitness*
- 04.11.10 *Training Session - Riseholme Park - Technique*
- 06.11.10 **Winter Series #2 - Sleaford Town (South) (Michael/Joanne Nell)**
- 14.11.10 **CLUB TRIP - Venice Street O**
- 18.11.10 *Training Session - Hartsholme Park - Technique*
- 20.11.10 **Winter Series #3 - Harlaxton College (Jeff Baker)**



SUMMER SERIES WINNERS



Short Series winner, Craig Lucas (LOG), collecting his trophy from LOG vice-chairman, Paul Murgatroyd, with chairman, Sean Harrington making the announcement



Technical Series winner, Liam Harrington (LOG), collecting his trophy from LOG vice-chairman, Paul Murgatroyd, with chairman, Sean Harrington proudly looking on!

Long Series winner, Will Parkinson (NOC), collecting his trophy from LOG vice-chairman, Paul Murgatroyd, following their runs at the Lincoln City race



Team Trophy winners: Team Pillar (from l to r) Jeff Baker (LOG); Craig Lucas (LOG) and Amanda Roberts (LOG)



LINCOLN CITY RACE 2010 – REPORT

Controller's Comments

Firstly, 'well done' to Liam for courses which proved challenging to many providing a mix a route choice, fast running and some surprises. Having the East of the city mapped opened up a couple of new areas which Liam used very imaginatively, including the arboretum and maze. A number of people were disqualified because they assumed theirs was the only control in the maze and so didn't check the control code – there were actually three. The same seemed to happen for some in the Bishop's Palace. Secondly, thanks to Sean and his, as usual, very efficient and friendly band of helpers for the slick way in which they managed the various aspects of the event.

I have to offer a sincere apology to those on Course D who had an inaccurate control description for control 64. On the map the control description accurately described the control as 'wall, east side'. However, when transcribed to written descriptions as taken in the start lanes it inadvertently appeared as 'wall, West side'. I know some people were very upset about this and I can assure you that we are just as upset as we wanted this, our first attempts at planning and controlling an urban event, to go without hitch. We have taken the decision to remove leg 8 to 9 as being the fairest action we could think of without voiding the course completely, which seemed inappropriate in this level of event.

Some competitors felt that Course D was too easy. BOF Guidelines for urban events say that Courses 3 and 4 can be combined, thus putting M55+, W60+, W16/18, M70+ and W55+ on the same course. I'm sure if we had done this we would had M55s complaining it was too short or W55+ saying it was too tough, not least because of the climb we needed to make best use of the map. So, we took the decision to combine courses 4 and 5, trying not to compromise the technical difficulty of Course 4 too much.

Well done to LOG on getting nearly twice as many competitors as last year, no doubt helped by the event's inclusion in the Nopesport Urban League, the link with Sheffield's urban event the previous day, as well as their growing reputation for Lincoln being a good event.

I also got a lot of constructive feedback about the courses, control descriptions and the map after the event, which I have shared with LOG. It is clear that there are differences of opinion about some aspects, including what is impassable, what appears in the seventh column of the control descriptions and how we indicated and enlarged the maze. It was interesting hearing people's thought processes as they realised where they had made a mistake or interpreted things incorrectly. I would conclude by thanking those of you who said you really enjoyed your course, despite finding it somewhat physical – who thought Lincolnshire was flat!

Ranald Macdonald, Derwent Valley Orienteers

6 September 2010



Britain's National Orienteering Magazine

CompassSport

CompassSport is the National Orienteering Magazine for the United Kingdom. It is 52 pages of full-colour news, maps, reviews, reports, previews, competitions, profiles, fixtures, photos, coaching tips and advice, including coverage of MTBO, Trail-O and much more.

Regular features include Dave Peel, Senior GB Team Coach providing coaching tips, "Know your Class Leader!" which takes a look at some of the individuals at the top of different age groups, Mountain Marathon Review, Controller's Conundrum, Out of Control, MTBO, Quizzes, Competitions and Fixtures. All the big races are covered throughout the year.

We produce a professional and action packed magazine, full of maps and orienteering excitement which any orienteering enthusiast would appreciate. We cater for everyone from the beginner to the expert, with ideas to improve, inspire and intrigue.

Cost

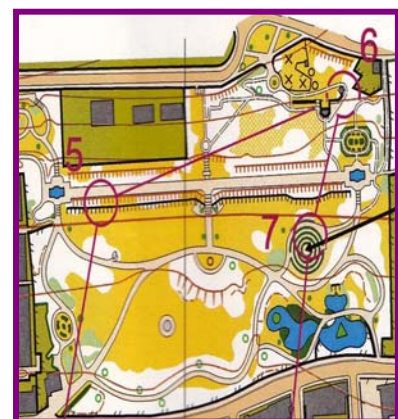
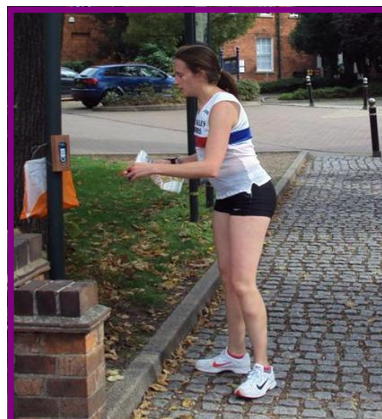
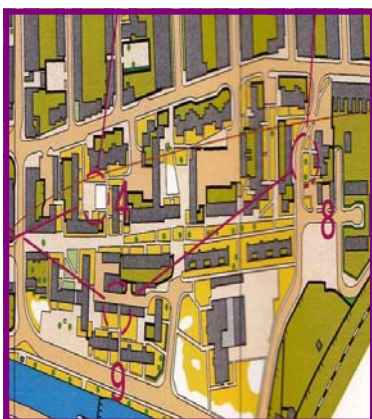
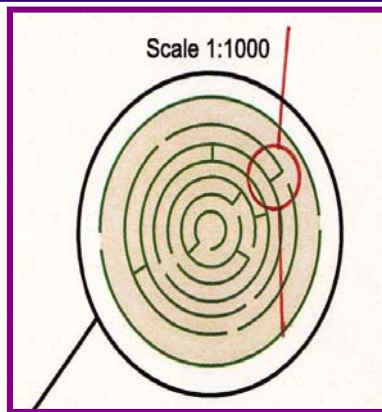
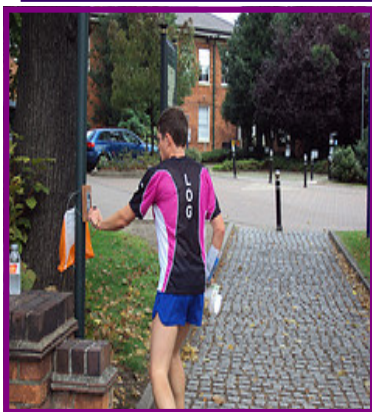
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LINCOLN CITY RACE 2010 - RESULTS & PHOTOS



LOG CITY RACE RESULTS

A (length 7.2km, climb 150m, 30 controls)

7	Paul Barnes	LOG	M35	51:48
13	David Gourlay	LOG	M50	53:17
18	Jonathan May	LOG	M35	56:06
19	John Mather	LOG	M40	56:50
22	Dave Denness	LOG	M50	57:31
27	Andy Lucas	LOG	M45	60:28
35	Stephen Bones	LOG	M21	65:02

B (length 6.3km, climb 120m, 25 controls)

9	Paul Murgatroyd	LOG	M40	41:09
22	Justin Williams	LOG	M45	46:19
30	Terry Crosby	LOG	M50	51:20
36	Christopher Smith	LOG	M40	54:05
37	Andrea Page	LOG	W21	55:02
47	Julie Mendes	LOG	W35	61:15
52	Sean Harrington	LOG	M50	67:03
54	Hayley Fox	LOG	W35	68:12
56	Alison Wright	LOG	W21	70:42
mp	Andy Furnell	LOG	M45	71:56

C (length 5.7km, climb 105m, 22 controls)

25	Martin Wheeler	LOG	M55	54:20
26	Jeffrey Baker	LOG	M55	54:23
30	Tanya Taylor	LOG	W40	55:07
41	Trudy Crosby	LOG	W50	61:20
50	Clare Hanna	LOG	W45	65:31
58	Kaele Pilcher	LOG	W45	80:30
61	Phil Longstaff	LOG	M55	133:27
mp	Amanda Roberts	LOG	W45	54:50
mp	Nick McAndrew	LOG	M45	91:29

D (length 3.0km, climb 60m, 14 controls)

15	Amanda Mylett	LOG	W55	27:13
20	Anne Gibbs	LOG	W65	29:20
24	Craig Lucas	LOG	M14	30:33
35	Charlotte Fox	LOG	W6	43:21



NOPESPORT URBAN LEAGUE 2010



One of main attractions of Sheffield's annual Urban Sprint event to date has been the use of different areas each time. After last year's City Centre event, this year's moved back to the suburbs, to the north west of the City Centre. It was based in a park called Ponderosa - which may have made it sound a more appealing setting than it actually was. The event was again made up of two separate short races - a prologue and a sprint - but this time the sprint was not going to be run as a chasing sprint, but instead it would just be based on combined times for the two races. I had assumed that as the prologue race was over a distance of just 950 metres that this would be based in the park - but was quickly proved wrong when I saw runners disappearing straight off into the estate. Other than the final two controls, the remaining 17 were packed into a small area of the estate, with two loops in place resulting in one control being visited three times.



I soon went wrong, visiting control no 7 instead of control no 3 and only realised that I had done so when I found myself at no 7 for a 2nd time. As a result I repeated my first loop to correct the error, but didn't realise that I was also visiting the wrong no 5 on both occasions! As a result disqualification, but this wasn't a huge disappointment in itself as I knew I'd messed up a already anyway.

The sprint race required a walk to the across the estate to the start. This event featured areas with lots of narrow cut-throughs, requiring very close

concentration. The course then crossed the park before returning to the area of the prologue. I managed to make a number of errors again - but wasn't too bothered in view of not being able to get a result anyway. I found it another interesting and challenging event.



Quick decision making was crucial on what was a complicated map - even allowing for the generous scales of 1:2500 and 1:4500. Other LOG members present did better than me - not difficult. Liam's 7th place on the Men's Open kept him in top spot on the Nopesport Urban League. This was a position he would be unable to consolidate the next day in Lincoln due to his planning of the event. Paul M was 6th overall in the M40 and Clare Hanna in 16th on W40+.

With our own Lincoln City Race on the following day and it's inclusion on the Nopesport Urban League for the second time in four years, the event had attracted a record entry. The race also showed plenty of promise with registration, start and finish right at the heart of the High Street and an extension of the map to the east of the city centre.

After a stint on duty at the road crossing at the foot of Lindum Hill, I set off on my course. Things started well enough, with home advantage meaning quick decisions were no problem at all. The course soon worked it's way into the map extension, with controls in the back streets along Monk's Road and into the Arboretum. The use of the maze was interesting - on this occasion a permanent feature in the park, as opposed to one created for the occasion. I certainly had a good tour of it before finally finding my control - but there were a number

of mis-punches at this stage.

Further controls were then in the grounds of Lincoln College, where I managed to run through some nettles, before crossing back over towards the city centre and then uphill. A control at the edge of Castle Square led to a run through the crowds admiring the vintage cars on display in the square before heading into the notorious Bishops Palace. Here I ended up in a group of five who punched the control in the vineyard all within two seconds of each other. Finally, back downhill and all was going well, as I headed down to the Brayford Waterfront and on to the finish. It was on downloading that I found out that completely missed out a control at City Hall. So much for the home advantage!



I think that with a lot of runners coming from further afield to Lincoln for this event, it really gave the best of what the city has to offer, with courses that spread out over a wide area of the city centre, all providing plenty of variety and challenge. Hopefully, this will help maintain interest in the event in the future. The next Lincoln city race has already been set for Sunday 4th Sept 2011!

There were 30 LOG members competing on the day - a very impressive turnout that's hopefully a good indication for the forthcoming Compass Sport Trophy final. Of the many performances, I would say Paul Barnes' 7th place on the Men's Open, in the midst of some nationally recognised names, really stands out.

Andy Furnell

EAST MIDLANDS TRAINING DAY 2010



East Midlands Orienteering Association

Development Day 11th December 2010

**Would you be willing to help your club?
Want to find out how?**

The association has arranged several training courses.

Planner's course - Covers planning colour coded courses

Organisers Course - Enables you to organise a colour coded event.

Mapping course - How to start surveying and using OCAD

Controller Grade 3 – Aimed at those with some experience planning and organising.

Controller Grade 2 – for existing Grade 3 controllers with the relevant experience.

Venue –
Trent University
Clifton Lane
Nottingham,
(5mins from Jtn 24
M1)

Time 9.30 – 4.30

Cost – No charge to
EMOA club members.
(Grant obtained from
British Orienteering)

Level 1 Certificate in Coaching Orienteering Course (3day course)

Day1: 20th Nov 2010

Day 2: 27th Nov

Day 3: 11th Dec

Trent University Clifton Lane Nottingham

Cost £200.00 Bursary available for those willing to offer time to coaching in their club or the region.

Time 10.00 – 6.00

If you would like discuss the details of any course or would like further information please contact either the Regional Development Officer: Pauline Olivant Tel 0115 9872083 or email p.olivant@btinternet.com

or your Local Club contact: Paul Murgatroyd (email: pmurgatroyd@lincoln.ac.uk)

Application forms are on EMOA web site. www.emoa.co.uk or from your club contact.

Closing date for applications is

Coaching course 6th October 2010.

All other courses 20th November 2010

All completed forms to be sent to Pauline Olivant email p.olivant@btinternet.com

MIDSUMMER MADNESS CHASING SPRINT / LCS



What carnage! The first ever chasing sprint witnessed untold numbers being foxed and confused by the combination of the devilish maze and the fast paced challenges of the university campus, with 9 disqualifications alone in the prologue and another 11 in the chase, where the pressure of head-to-head racing obviously took its toll! Never have we witnessed an event where a third of the field fail to get round in one piece...



The chase saw local boy, Liam Harrington, take top honours on the night, with Liz Phillips (OD) the fastest female, Craig Thomson (FVO) the quickest junior and Neil Harvatt (HALO) the winning veteran. LOG results, with scorers for the Lincolnshire Challenge Shield highlighted, shown below.

The new annual club competition between HALO and LOG saw the home side defeated by default, as LOG could only put together 9 of the necessary counters from the required classes. Much hand-wringing and gnashing of teeth followed the disqualification of all the junior and veteran LOG females and so the honours were taken by our northern rivals. The official dog-hanging by our illustrious chairman and team captain, Sean Harrington, calculated that if just one of these runners had managed to get round without miss-punching, then LOG would have won by around 40 minutes!! HALO will be hosting the event at the end of their Poacher series around the end of June, so keep your ears & eyes open around then for our opportunity for revenge.....

LOG CHASING SPRINT RESULTS

First	Last	Scoring Group	Prologue	DSQ	Chase	DSQ	Total	Overall Rank
Liam	Harrington	Senior (#1)	00:14:52		00:15:13		00:30:05	1
Charles	Nell	Junior (#1)	00:17:04		00:16:32		00:33:36	2
Dave	Denness	Veteran (#1)	00:18:37		00:17:52		00:36:29	3
Andy	Lucas	Senior (#2)	00:19:55		00:20:05		00:40:00	4
Steve	Bones	Senior (#3)	00:19:25		00:21:50		00:41:15	5
Hayley	Fox	Senior (#4)	00:20:30		00:22:48		00:43:18	6
Joanne	Nell		00:21:31		00:22:04		00:43:35	7
Ally	Wright		00:20:45		00:22:50		00:43:35	7
Amanda	Roberts		00:21:37		00:22:31		00:44:08	9
Sean	Harrington	Veteran (#2)	00:22:58		00:22:06		00:45:04	10
Craig	Lucas	Junior (#2)	00:23:37		00:22:42		00:46:19	11
Michael	Nell	Veteran (#3)	00:24:01		00:22:36		00:46:37	12
Martin	Wheeler		00:23:24		00:23:32		00:46:56	13
Andy	Furnell		00:23:36		00:23:23		00:46:59	14
Clare	Hanna		00:24:36		00:23:50		00:48:26	15
Kaele	Pilcher		00:28:30		00:28:46		00:57:16	16
Kevin	Kirk		00:18:53	v	00:20:50	v	00:39:43	
Lewis	Goddard		00:23:48		00:19:02	v	00:42:50	
Hannah	McNabb		00:23:44	v	00:27:38	v	00:51:22	
Amanda	Mylett		00:25:21		00:28:40	v	00:54:01	
Lauren	Bates		00:33:32		00:33:52	v	01:07:24	
Jonathon	May		00:18:05		01:00:00	v	01:18:05	
Luke	Fortune		01:00:00	v	00:21:22	v	01:21:22	
Matthew	Welton		01:00:00	v	00:27:55	v	01:27:55	
Sarah	Pike		00:38:33	v	01:00:00	v	01:38:33	

LONDON CITY RACE 2010



A glorious autumn day greeted the intrepid LO-Gers who ventured to London for the third

City of London Race. My first, and a great introduction.

Notwithstanding a body on the line in the Wakefield area, Paul M, Ally W and myself got to the smoke in time to make it to the assembly area for a quick change, pick up a race bib, a map to get to the start and jog the 1.5km from London Bridge station, over Tower Bridge to the start. Paul and Ally chose a different start time from me to set off from assembly to the start, and managed to deviate from the route, incurring a several minute error...

The start was in a sunny spot within shouting distance of the Tower of London. Apparently there had been an earlier delay

in the starts due to two start boxes failing, but by the time we got there the start was flowing smoothly and early/late arrivers were being slotted in gaps.



I ran the men's open at a straight line distance of 8.2km. I thoroughly enjoyed the contrasts that the course had to offer – one minute fighting through hoards of tourists, the next running with no-one else in sight at all. Hard

to believe in the middle of the day in central London. The course also made good use of tourist sites, taking in the Lloyds Building, St Paul's Cathedral and the Millennium Bridge to name but a few. The course also had its fair share of planning tricks and route-choice conundrums to give a thoroughly enjoyable and challenging race. The run-in to the finish had Tower Bridge as its backdrop, making a very fitting finale to the event.

The men's open was given as 8.2km, Liam ran the same course and his GPS clocked up over 13km – straight-line running being nigh-on impossible. All the others said that their courses felt long and surprisingly physically challenging.

The day was rounded off with a picnic overlooking the Thames, a well-earned pint and a leisurely train ride home.

John Mather

CITY RACE—SELECTED RESULTS

Course	Competitor	Club	Position	Time
Men's Open 8.2k	Graham Gristwood	SYO	1 (132 finishers)	47:00
	Liam Harrington	LOG	21	59:58
	John Mather	LOG	80	72:55
Women's Open 6.8k	Kirti Rebane	SK Saue Tammed	1 (74 finishers)	46:29
	Andrea Page	LOG	33	70:32
	Ally Wright	LOG	48	76:12
Men's Vets 6.8k	Martin Ward	SYO	1 (139 finishers)	45:59
	Paul Murgatroyd	LOG	26	55:07
	Sean Harrington	LOG	134	93:40

FITNESS FOR ORIENTEERING

This series of articles appearing in CompassSport magazine over the next year is aimed at helping the orienteer, irrespective of their age, ability or ambition, to develop their understanding of the fitness aspects of the sport and to help increase their enjoyment of orienteering through a logical approach to fitness development.

The previous article in the series addressed the weekly training 'microcycle' for the orienteer and examined how this would change throughout the periodised year. The essence of the overarching plan is now in place and we now need to focus on specific suggestions for what each individual training session should comprise, with an eye on how this would fit within the various phases of the yearly programme. This article will focus on the development of stamina for orienteering.

Endurance Training

As outlined in the first article of the series, a strong aerobic foundation is required for the sport of orienteering, with the majority of events requiring competitors to continuously perform at a specific power output or velocity for a long time, ie. typically between thirty minutes to two hours. The development of a solid endurance base is thus the foundation stone for all other aspects of fitness development and should be the number one priority for orienteers, regardless of their level of performance.

Effects of a low aerobic capacity or a poor foundation of endurance training can easily be highlighted by analysis of a typical event's splitsbrowser trace (Figure 1 below).

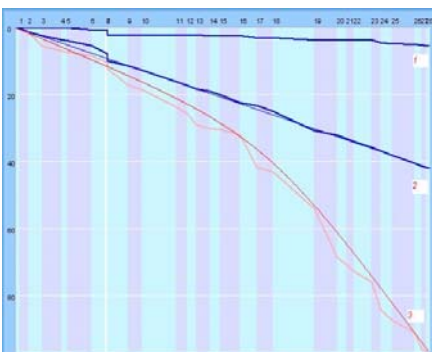


Figure 1. Splitsbrowser sample trace from the JK festival, 2010.

Competitor 1 has managed to maintain an even pace throughout the race, with only a minor reduction in split times, resulting in a strong overall performance on their course. Competitor 2 has seen a gradual linear decline, indicating that the endurance component is reasonably sound, but there may be elements of their top end, anaerobic fitness that require work in order to narrow the gap between themselves and the top orienteers. Finally, competitor 3 sees a curvilinear decline, which indicates that their second half performance on the

course is witnessing a significant reduction in pace. Here the stamina side of their fitness is clearly deficient, as they are unable to maintain their early speed, and the focus of their programme would need to be an establishment of an endurance base capable of coping with the demands of such an event. Development of this orienteer's aerobic capacity would greatly improve their performance (and probably their enjoyment of the event!).

Factors Related to Aerobic Endurance Performance

As the duration of the orienteering event increases, from sprint to middle to 'classic', the proportion of energy demand met via aerobic mechanisms increases, as formerly outlined in the first article of this series. Therefore, high maximal aerobic power ($VO_2\max$) is a prerequisite for successful performance in the sport and, as stated previously, international level female orienteers have $VO_2\max$ values in the region of 60-70ml/kg/min, with international males reported to be in the 70-80ml/kg/min range (Gjerset et al., 1997; Jensen et al., 1999). Also, most races orienteers are running at around 80-86% of their maximum oxygen uptake levels throughout the event (Smekal et al., 2003).

Whilst up to 50% of the orienteer's $VO_2\max$ potential is predetermined by genetics (Bouchard, 1992), much can be done to maximise use of this capability, particularly within orienteers that are not previously well trained. The ability to achieve a high aerobic capacity is essentially down to maximising the functioning of the pulmonary, cardiovascular and muscular systems. Good quality training programmes will be designed in such a way as to improve all of these components, in order to exploit fully the orienteer's $VO_2\max$ potential, but although a high aerobic capacity underpins successful performance, other factors may be equally or even more important, particularly once this component's ceiling has been reached. With elite orienteers, for instance, the differential between $VO_2\max$ values is often very small and, in these cases, it then becomes a matter of who can work at a higher percentage of their maximal capacity without accumulating large amounts of lactic acid in the muscle and blood (Baechle & Earle, 2008). Thus factors such as anaerobic threshold (the point at which the body cannot meet its energy demand through aerobic metabolism alone), running economy (the oxygen uptake required to perform exercise at a given intensity), effective fuel utilisation and muscular endurance also have a major role to play here.

Methods for Developing Endurance

There are a number of types of training methods that can enhance aerobic endurance capability, from traditional continuous training, performed at low intensity, through to high-intensity interval work, all of which have their place in the develop-

ment of the orienteer's fitness levels. Table 1 (overleaf) summarises the key methods, with the main design variables shown for each type of training session. Whilst the frequency and duration of the various sessions are easy to monitor, the intensity is much harder to gauge and is the key to making sure the programme is successful and that the benefits of each type of training are maximised. The calculation of the correct intensity for each training type is thus the focus of the next section.

Calculation of Training Intensity

A variety of methods exist to calculate the appropriate exercise intensity for aerobic training sessions, varying from simple, imprecise techniques, such as gauging exertion through breathing rate, to complex, expensive methods, such as calculating exact individual levels via laboratory testing. One of the best methods that is relatively inexpensive, yet still fundamentally sound, is via heart rate measurement and the calculation of heart rate zones. The use of heart rate monitors by athletes in a wide range of sports has increased enormously in the past fifteen years and cheap models can be acquired for relatively low cost.

Heart rate training zones are calculated by taking into consideration an individual's maximum and [resting heart rates](#) (MHR and RHR, respectively). To determine RHR take three measurements on separate days, ideally not following a demanding day's racing/training. On waking, and before getting out of bed in the morning, take a fifteen second count (and multiply by 4) to determine resting pulse rate (beats/min). Use the lowest value recorded over the three separate days as the RHR.

To determine maximal heart rate use one of the three methods below:

- 1) Wear a heart rate monitor (HRM) during a maximal test (such as a bleep test) and record the highest value achieved in the last two minutes.
- 2) Following a good warm-up, which gradually increases in pace, conduct a repeated (2-3 times) maximal three minute all-out effort. Ideally wear a HRM during this test and record the highest heart rate seen during the repeated bouts of exercise.
- 3) Finally, sprint and short hill races, where it is likely that the running will be at or around maximal intensity, can be used. Also a 3km time trial often results in the athlete reaching maximal HR levels during the final stages. Take the highest recorded HR value during the race.

The calculation of an appropriate zone value shown in table 1 is performed in the following way:

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- Take MHR using one of the methods above and record RHR

- Subtract your RHR from your MHR giving you your working heart rate (WHR), also known as heart rate reserve (HRR)

- Calculate 10% of the WHR giving us "x" (rounding up or down to a whole number)

- Deduct "x" from your MHR to give 90%

Continue deducting "x" to give the 80, 70 and 60% values

Example: The orienteer's MHR is 200 and their RHR is 60. They wish to calculate their pace or tempo training zone (80-90%). Thus:

- $MHR - RHR = 200 - 60 = WHR$ of 140bpm

- $10\% \text{ of } 140 = 14\text{bpm}$

- $MHR - 10\% = 200 - 14 = 186 \text{ bpm}$ (90% zone)

$MHR - 20\% = 200 - 28 = 172 \text{ bpm}$ (80% zone)

Therefore our orienteer now has a zone calculated of between 172-186bpm for their tempo sessions and using this should give them a workout that will be both effective and scientific. They can easily calculate the other zones for their various training sessions using this method. Let us now examine the individual types of endurance workouts and place these into context for the weekly plan.

Recovery/Active Rest

These sessions are useful in helping the orienteer overcome the demands of heavy training sessions or races and must be performed at a low intensity to gain maximum benefits. The aim of these workouts is to encourage the removal of waste products and debris from the muscles, reduce inflammation and enhance the rebuilding and strengthening of the damaged soft tissue. Often running sports can utilise non-weight bearing workouts or cross-training, particularly cycling and swimming based exercise, to help the musculo-skeletal system recover quickly from the demands of high-intensity work, but without imposing on the body the impact forces normally associated with running. Within the micro-cycle, these sessions are usually placed the day after a race or a high-intensity session. They can also be used in the transition or recovery phase of the training year to help the athlete recuperate after a demanding season of races.

The important factor here is that the intensity of recovery sessions should be low (<60% HRR/VO₂max) and the problem is that often the recreational orienteer will run these sessions at too high an intensity. For instance, Foster et al. (2001) found that athletes tend to run too hard on easy days

	Recommended frequency (times per week)	Duration of training portion	Intensity (%HRR/VO ₂ max)
Training method			
Recovery/active rest	1-2	30-45 min	~60%
Long, slow distance	1-2	>30min (race distance or longer)	60-80%
Pace or tempo training	1-2	20-30 min	80-90%
Aerobic Interval training	1-2	30-40 min total time	85-95%
Anaerobic Interval / Repetition training	1	30-40 min total time	Supermaximal
Fartlek	1	20-60 min	Varies between 60-90%

Table 1. Types of Aerobic Endurance Training. (HRR = Heart rate reserve)

Day	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Workout	Rest day						
Endurance training		LSD	Recovery	Aerobic Intervals	Recovery	LSD	Tempo
Resistance training			Weights / Circuits		Weights / Circuits		
Total Duration		60	45	45	40	90	40
Interval Duration		60	45	5	40	90	25
Recovery (min)		0	0	1	0	0	0
Work/rest ratio		1:0	1:0	5:1	1:0	1:0	1:0
Intensity (%HRR / VO₂max)		65-75%	50-60%	85-95%	50-60%	60-70%	80-90%

Table 2. General preparation microcycle emphasising long slow distance (Adapted from Bompa, 2009)

and when this fault was corrected in a later study (Esteve-Lanao, 2007), through heart rate monitoring, the subject group improved their 10-km performance significantly.

Long, slow distance

These running sessions are the fulcrum around which everything else is built and are most important during the preparatory/base period of the yearly programme. Physiologically, these sessions are important in order to enhance thermoregulatory and cardiovascular function, improve mitochondrial energy production and oxidative capacity of the skeletal muscle and increase the utilization of fat as a fuel (Baechle &

Earle, 2008). The other important benefit is the increased resistance of the orienteer's muscles to the usual micro-trauma that ensues from the repeated impact forces associated with running, particularly of a downhill nature.

A typical microcycle during this period, where the orienteer is attempting to increase their aerobic foundation, will contain a mix of long, slow distance, active recovery, passive rest and aerobic interval/tempo sessions. Diagrammatically, a typical week during this phase is shown in table 2 (above).

As well as setting the intensity of these sessions at around 70% HRR/VO₂max,

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these workouts should be viewed as conversational exercise, where the orienteer can talk without undue respiratory distress. Typically, the orienteer will run for around 30-90 minutes and it is important to hold some of these workouts in terrain, particularly towards the end of the preparatory phase. This will have the sport specific, concomitant benefits for the orienteer of improved muscular endurance, core strength, balance and co-ordination.

Pace/tempo training and aerobic intervals

Often these sessions mirror the pace and demands of an orienteering race, where the runner is working at or slightly above their lactate threshold. The workouts can be conducted either continuously (tempo training, usually at a constant pace for around 20-30 minutes) or intermittently (aerobic intervals, for instance as 3x10minutes with 5 minutes recovery jogging between each interval). Examples of aerobic intervals sessions are: 3 x 1M or 6 mins at 80-85% HRR/VO₂max, with 800m or 3-4 min recoveries (down to ~60% HRR/VO₂max); 6 x 600m or 2mins at 85-90% HRR/VO₂max, with 400m or 2-min recoveries; 8 x 400m or 75 secs at 90-95% HRR/VO₂max, with 2-300m or 90 secs recoveries. Pyramid interval sessions, such as 1K, 2K, 3K reps at around 80% HRR/VO₂max, with half-length recoveries in between each repetition, are also popular workouts for quality aerobic development.

These sessions, usually performed in the later stages of the preparatory phase, are demanding, with the repetition work intensity around 80-90% HRR/VO₂max, but they are crucial for developing the endurance required to sustain 'race pace' in an orienteering event. Research has shown that performing aerobic intervals and tempo training twice a week for up to 4 weeks can stimulate significant performance gains (Laursen & Jenkins, 2002; Laursen et al., 2002). Improvements will be based physiologically around an increased lactate threshold, enhancement of running economy and the development of both aerobic and anaerobic metabolism. Care must be taken by the orienteer that there is sufficient rest during the microcycle to allow for adequate recovery from these sessions to take place, as too much of this type of training can easily lead to overtraining, resulting in staleness, injury and illness.

Anaerobic Intervals/Repetition Training

Similar in concept to aerobic intervals, but here the work intervals are very short (<2min) and the intensity is supramaximal (>100%VO₂max). As the repetitions are so brief, the use of heart rate monitoring to gauge intensity becomes impractical, and intensity must be calculated via other means, such as related to time trial performance, and a number of online calculators exist to help devise the appropriate

paces for the repetitions.

As the dependence is on anaerobic metabolism, the rest intervals are usually long, with the ratio of work:rest being around 1:3 to 1:5, so that a 30sec repetition would normally be followed by a 90-150sec recovery. Physiologically, this work results in improvements to VO₂max, running economy and speed and increased ability to tolerate and remove lactic acid from the working muscles (Laursen & Jenkins, 2002). For orienteers, the benefits will include increases in top end speed and power through terrain, up hills and towards the end of a race.

Fartlek

A more informal type of training, these sessions typically comprise a mixture of running speeds, varying in intensity between easy running at around 60-70% HRR/VO₂max and short, fast bursts of speed or hill work (~85-90% HRR/VO₂max), and are conducted in a random, ad hoc fashion, often in terrain. This type of training helps to provide variety in a training programme and breaks up the monotony often associated with endurance training. Physiologically, the benefits include

increases in VO₂max, lactate threshold, muscular endurance and improvements in fuel utilisation and running economy (Baechle & Earle, 2008).

A typical microcycle towards the end of the preparatory period, just prior to the competitive phase, where top end, anaerobic endurance is the focus, is shown in table 3 (below).

Conclusion

Using this information above, the orienteer can now begin to build their aerobic endurance base, with a varied programme of training activities that is focussed around a periodised year. It is important to consider your goals for the season and ensure that you devise your programme with these in mind and that any training programme set is progressive and gradual. The frequency and duration of your training sessions will need to be based upon your current fitness status – don't try to do too much, too soon and listen to your body! Always ensure that you get a good balance between work and rest. The next article will focus on strength development and look at ways in which conditioning work in this area fits in with the periodised plan.

Day	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Workout	Rest day						
Endurance training		Aerobic Intervals	Recovery	LSD	Anaerobic Intervals	LSD	Fartlek
Resistance training			Weights / Circuits				
Total Duration		40	45	45	30-40	90	45-60
Interval Duration		3	45	45	45s	90	-
Recovery (min)		1	0	0	130s	0	-
Work/rest ratio		3:1	1:0	1:0	1:3	1:0	-
Intensity (%HRR/VO₂max)		90-100%	50-60%	65-75%	100%+	60-70%	60-90%

Table 3. Specific preparation microcycle emphasising anaerobic endurance development (Adapted from Bompa, 2009)

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EAST MIDLANDS LEAGUE — 2010

east midlands orienteering association



EMOA League— Remaining Fixtures 2010

31st October Stanton Moor 7th November Bestwood Country Pk
 28th November Burbage Common 5th December Shining Cliff
 19th December Walesby 28th December The Outwoods

Only one further event in the series since the last edition, with potentially the final ever event on Carsington Pastures before the building of the wind farm. Unfortunately, at time of going to press, the table had not been updated on the EMOA website, but as only 4 LOG runners were at the event, there will have been little in the way of changes to overall standings. The next race in the series is DVO's event at Stanton Moor on the 31st October and then it's rapid fire all the way into the end of the year!

East Midlands League 2010 (LOG & RAFO members' current standings)

Colour	Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Best Eight Scores	Overall Position
Yellow	Matthew Welton	342	624	1000	1000													2966	2nd
Yellow	Russell Kirk	318		435	371	503	586		312									2525	3rd
Yellow	Andrew Oxby					876	433		1000									2309	4th
Yellow	Rachel Kirk					415	465		365									1245	6th
Orange	Luke Fortune			862		865			861									2588	4th
Orange	Georgia Davey	752		1000		854	514		1000									3120	3rd
Orange	Hannah McNab	1000	1000			962	1000											3962	4th
Lt Green	Craig Youngs	710	553		661	301	579											2804	4th
Lt Green	Geoff Gibbs								501	426								927	23rd
Lt Green	Sarah Fletcher	724	606			655												1985	5th
Green	Kevin Kirk		761		500	742	824		1000									3827	14th
Green	Martin Wheeler			985	893				920									2798	18th
Green	Andy Furnell	597		586														1183	44th
Green	Tanya Taylor						635		638									1273	25th
Blue	Michael Nell	769	878	908	700	765	806		773									5599	4th
Blue	Dave Denness	837		886	771	849				864								4207	8th
Blue	Sean Harrington	614	704	651	524				664									3157	18th
Blue	Tom George	552		705		737	696											2960	24th
Blue	Joanne Nell	1000	946	951	944	1000	937		935									6713	1st
Brown	Paul Murgatroyd	909	992			845		818	799	860								5223	6th
Brown	Dave Gourlay		1000	834			860		1000	740								4434	8th
Brown	Paul Barnes			725	599				670									1994	19th
Brown	Liam Harrington	868			914													1782	23rd
Brown	Charles Nell		803	724														1527	29th
Brown	Jonathan May		772	690														1462	30th
Brown	John Mather			713					654									1367	31st

Key to Events: 1 Bagworth Woods, 2 Allestree Park, 3 Thieves Wood, 4 Stapleford Woods, 5 Crich Chase, 6 Charnwood Forest South, 7 Cromford Moor, 8 Clumber Park, 9 Bradgate Park, 10 Carsington Pastures, 11 Stanton Moor, 12 Bestwood Country Park, 13 Burbage Common, 14 Shining Cliff, 15 Walesby, 16 The Outwoods

LOG Executive Committee Meeting – August 19th 2010

		Action
	Present: Sean, Paul, Michael, Andy, John, Liam, Anne, Geoff	
1	Apologies for Absence – Amanda	
2	Approval of Minutes of Meeting on 8.07.10 – Agreed Blue Ribband trophy needs taking back, as a name is spelt incorrectly on it.	SH to get the trophy sorted. SH has told NH to get it done
3	Lincoln City Race 2010 – All going ok, over 100 entries so far. Final details need writing up and putting on the net. Helpers are needed on the day, we need someone to man a road crossing and a gate at Bishops Place, also someone to go out on a bike to keep an eye on a few controls, this is on top of normal helpers we need for events.	SH/LH to sort out final details.
4	Grants and Mapping – We have got the £1500 grant we put in for, so Mapping of the three areas is going to happen in mid September. Paul is running a mapping day, planned for the 11 September at Riseholme for club members to learn how to map new areas.	
5	Winter Series 10/11 – Dates and venues have been sorted, Planners are needed though, Justin is going to do Bourne woods, no other planners as yet. Members should contact Sean if they would like to plan one of the events or are able to help someone else.	
6	Committee Appointments – At the AGM we need to fill the following posts, Secretary, Fixture Secretary and Publicity Officer. Also next year we will need a Treasurer. Members are asked to put themselves forwards for these post as the club can not run with out them. Ian has asked to stand down from President.	SH to talk to members about posts. SH to talk to Ian
7	Summer Series – 7.4.11 – 28.7.11 – 9 events every other Thursday. Venues to be finalised but looking at a north/south split. 11.08.11 Chasing Sprints.	
8	EMOA Meeting – Nothing to report.	
9	AGM – 20th October, Look at holding it in the Golden Eagle.	LH to book venue.
10	A.O.B – a. We are going to get two A Boards for putting details on at events, cost is about £100 b. Look into cost of other storage closer to town	a. PM to sort b. AL to look into this.
11	Next Meeting – After AGM	

LAKES 5 DAYS FESTIVAL



In the end, this festival will probably be remembered more for the

orienteering that didn't happen, that that that did. The cancellation of day three, at Harrop Tarn, was highly controversial and caused a great deal of discussion, both in the lakes and on Nopesport in the days that followed. The withdrawal of the parking area by United Utilities, on the basis that the cars would cause pollution of Thirlmere from churning up the wet field, and the subsequent vetoing by the police of the fallback plan of parking on the minor access road, meant that the Lakes organisers had no option but to cancel the event at late notice. Debate raged over the stance of UU and the likelihood that they were using this to reinforce their belief that the area shouldn't be holding events of this size and the

intransigence of the police over possible alternatives to the parking issue overshadowed what was otherwise a cracking week's orienteering.

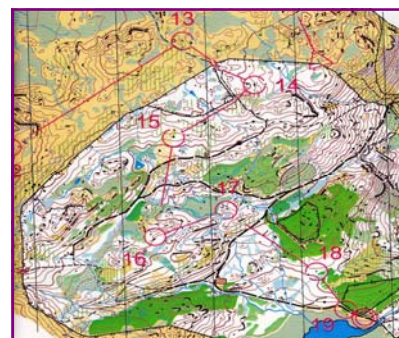


The LOG contingent of eleven runners, many of whom only competed in one or two of the races, ended up making the most of what the lakes had to offer, with the usual blend of fast open fell and rugged, testing woodland challenging all-comers.

The urban event in Coniston on the Wednesday night ended up being a real treat, with many of the festival's orienteers taking to

the streets of this pretty rural location to run off their frustration at the cancellation of Harrop Tarn. The organisers had obviously heard of the wonders of maze navigation, conjuring up a challenging micr-O section at the end of the sprint through the urban terrain.

It was good to see the promising rise of the William's family juniors, with some notable performances coming in the final day on Helsington Barrows. Toby came in 5th on the yellow, 2.5 minutes ahead of his older sister, and Bella turned in her best result of the week on the W12A course.



LOG FINAL RESULTS

COURSE	Name	1	2	Coniston Urban	4	5	Cumulative Score	Overall Placing
Yellow	Toby Williams	---	---	---	---	27:45(5)	---	---
Yellow	Hazel Williams	---	---	---	---	30:15(9)	---	---
W12A	Bella Williams	24:53(7)	38:40(11)	---	---	29:17(5)	3405	9th/18
M40L	Paul Murgatroyd	80:15(20)	87:40(19)	42:56(10)	76:04(14)	64:42(18)	3581	17th/46
M40L	Justin Williams	69:37(10)	---	---	---	63:15(14)	2469	36th/46
W40L	Karen Williams	78:00(13)	---	---	---	74:17(16)	2212	21st/28
W45S	Di Read	92:43(28)	109:16(27)	---	mp	164:50(28)	1685	30th/35
M45S	Robin Stevens	85:47(20)	mp	---	96:46(14)	75:56(16)	2342	16th/26
M50L	Dave Denness	81:28(46)	91:02(72)	---	78:14(34)	mp	3276	37th/77
Lt Green	Jeff Baker/Tanya Taylor	---	---	mp	73:42(29)	---	---	---



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The Thinking Man's Sport

It's good to talk
groups.yahoo.com/group/lincolnshireorienteeringgroup

FUTURE ISSUES

The next LOG-NEWS is scheduled for the end of November and will be bringing you up to date with the first reports from our 2010/11 winter series, focussing on the south of our region. We'll be reporting on the AGM too, with some new faces appearing in key posts, such as fixture secretary and publicity officer.

The Nopesport Urban League have reached its climax by then, with the final event at Warwick having taken place, and our intrepid urban race reporter, Andy Furnell, will be rounding up the year's proceedings. We'll also have a report from our first ever CompassSport trophy final at Burbage Moor—exciting stuff! Finally, we'll be looking forward to another first, an inaugural European venture as a club to the renowned city race of Venice—multe bene, sen~ores!

See you out there somewhere!

SELECTED NATIONAL FIXTURES

Sun 03/10/10	West Midlands	OD	Regional	Warwick Urban Race	Warwick	EOD	SP287648
Sat 09/10/10	East Midlands	DVO	Local	DVO Local Event	Calke Abbey	EOD	SK368227
Sun 17/10/10	East Anglia	NOR	Local	NOR Colour Code Event	Pretty Corner	EOD	TG317311
Sun 24/10/10	East Midlands	LEI	Regional	LEI Midlands Middle Distance Championships	Irchester Country Park	EOD	SP914660
Sun 31/10/10	East Midlands	DVO	Regional	EM League	Stanton Moor	EOD	SK247635
Sun 31/10/10	East Anglia	WAOC	Local	WAOC Colour Coded Event	Mildenhall	EOD	TL728750
Sat 06/11/10	East Midlands	NOC	Local	NOC Local Night Event	Bestwood Country Park	EOD	SK565475
Sun 14/11/10	East Anglia	NOR	Local	NOR Colour Code Event	Hockham	EOD	TG152413
Sat 20/11/10	East Anglia	WAOC	Local	WAOC Colour Coded Event	Rowney Warren	EOD	TL123403
Mon 22/11/10	East Midlands	DVO	Local	DVO Local Event	Shipleigh Park	EOD	SK432454