



Technical News December 2011

Introduction

This Technical Newsletter contains the following

1. Items of Interest
 - a. Note on relationship between True North, Map Grid and Magnetic North
 - b. Upcoming Controller Workshops in QLD
 - c. Comments on the Oceania – Australian Championships carnival
 - d. Administrative guidance for organisers of IOF Events
 - e. OA Results System Update
2. Updated Technical Documents on the OA Web Site
 - a. Designing Relay courses in OCAD
 - b. Map printing
3. Technical Report to the December OA Conference
4. Recommendations on Changes rules pertaining to the Schools Championships in the OA Foot Orienteering Rules (document not included but is available if required and was included in the OA conference papers).
5. Mapping Report to the December OA Conference

Items of Interest

Relationship between True North, Map Grid and Magnetic North

With the increasing use of GPS in mapping, and maps being spatially referenced, this note is just a reminder to mappers and controllers of the relationship between True North, Map Grid (metric grid) and Magnetic North. Using a GPS in mapping usually has the GPS configured to record and display using the metric map grid and datum for Australia (GDA94). There is a small angle between the north lines of the grid and lines of longitude (True North) referred to as Grid Convergence (measured with respect to Grid North). This varies depending on the location. Likewise the magnetic declination which is measured as the angle between Magnetic North and True North, varies across Australia and also over time.

The angles for each can be determined at:

1. Grid Convergence - http://www.ga.gov.au/geodesy/datums/redfearn_grid_to_geo.jsp
2. Magnetic Declination - <http://www.ga.gov.au/oracle/geomag/agriform.jsp>

These values are required for maps that need to be rotated to Magnetic North after preparing a base map referenced to the Map Grid of Australia.

Amount of Rotation = Magnetic Declination + Grid Convergence

For example around Adelaide (in the western part of Zone 54) –

$$\text{Map Rotation} = 8.126^\circ + (-1.38^\circ) = 6.746^\circ$$

For maps close to zone boundaries, extra care is required in determining the grid convergence.

OCAD can only use spatially rectified maps based on a square metric grids (not a True North grid).

Also useful are pages to convert Grid coordinates to latitude and longitude (geographic)

- http://www.ga.gov.au/geodesy/datums/redfearn_grid_to_geo.jsp

and geographic to Grid at

- http://www.ga.gov.au/geodesy/datums/redfearn_geo_to_grid.jsp

For more reading on this topic see:

- <http://www.mapsport.com.au/2011/11/compass-bearing-inexplicably-off/>
- <http://www.homepages.ihug.com.au/~cartography/georeference.htm>

Controller Workshops in Qld

Eric Andrews is organising the following Controller Workshops in Qld in 2012

1. Level 2 Foot Controllers Workshop – Sat Nov 10th, Brisbane



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Website: orienteering.asn.au
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2. Level 1 Controller Workshop for MTBO – Sun Nov 11th, Brisbane.

Please contact Eric at batmaps.andrews6@gmail.com for more information.

Oceania Australian Championships Carnival Review

The use of GPS tracking, the big screen and in field cameras added to the level of technology at this carnival, however I will just make a couple of comments to remind controllers not to forget about some minor details

1. Cutting circles and lines – where control circles and course lines obscure important details, course planners should cut the circles and lines. Although some level of overprinting effect of the course purple can be achieved in digital printing, this is not generally adequate to obviate the need to cut circles and lines. As examples
 - a. Courses on the 1:10,000 map of the Oceania Long Championships (Northern Spurs) enables the details to be seen by cutting circles
 - b. Courses on the 1:7,500 map of the Oceania Middle Distance Championships where circles and lines were not cut and the purple, especially on the brown, obscured details around the control circle
2. Control descriptions – the symbol used in the control descriptions should match the map symbol e.g. use the boulder field symbol for boulder fields even where the course planner thinks they look more like a boulder cluster on the ground. Likewise if a boulder is low and looks more like a small knoll, the boulder symbol should still be used. If the course planner believes the map symbol needs to be modified, they should consult with the mapper. Remember the orienteer does not know what the feature looks like until they get, and will be navigating to a map symbol that matches the control description. If a knoll symbol is used for the control description instead of a boulder where the latter is the map symbol, and a knoll is also in the circle, the orienteer may be misled and go to the mapped knoll instead of the boulder.

OA Results System Update

The statistical reports on the OA results system have been improved by Tim McIntyre as in the example below (to access requires login by users who load results). A member file with the following format can be added to give more complete age subdivision in the report:

- text file in csv format
- columns of Surname, Given name, YOB (2 or 4 digit), Gender(M/F), Club (2 letter), City (1 letter)



Results Administration Search Printable view

[Summary](#)
[Insert Results](#)
[Edit/Overwrite Results](#)
[Insert Splits](#)
[Statistics](#)

Participation Statistics

From: Jan 1 2011
 To: Dec 31 2011
 State: South Australia

Date	Name	State	Type	M		M		F		F		T		T		Unknown	Total
				Jun	Sen	Vet											
2011-03-20	St Peters College Short Course Event	South Australia	State Park/Sprint	4	4	23	1	4	12	5	8	35	27			75	
2011-04-10	Mack Creek Badge Event	South Australia	Badge	5	4	40	1	5	14	6	9	54	30			99	
2011-04-17	Narinyeri Hills	South Australia	State League/OY	3	3	36	3	3	14	6	6	50	40			102	
2011-05-15	Kuitpo	South Australia	State Minor	7	4	30	4	1	13	11	5	43	33			92	
2011-05-29	SA Sprint Championships Keithcot Farm	South Australia	State Championships (Sprint)	7	5	23	2	4	8	9	9	31	20			69	
2011-06-05	Pewsey Vale	South Australia	State Minor	5	2	28	3	1	10	8	3	38	26			75	
2011-06-12	SA Long Championships Casarina Ridge	South Australia	State Championships (Long)	5	5	36	2	4	12	7	9	48	51			115	
2011-06-26	Kersbrook Glades	South Australia	State Minor	6	3	24	4	2	11	10	5	35	27			77	
2011-07-10	Vixen Gully	South Australia	State Minor	7	5	33	4	2	13	11	7	46	29			93	
2011-07-23	Tothill Range	South Australia	State Minor	1	6	18	0	4	13	1	10	31	12			54	
2011-07-24	Worlds End	South Australia	State League/OY	2	6	29	0	5	14	2	11	43	16			72	
2011-07-31	North Adelaide	South Australia	State Park/Sprint	0	1	15	1	1	8	1	2	23	57			83	

To improve event coverage (and hence statistics), results collated manually at events can also be posted to the OA results system. The file requirements for this are as follows:

Results from regular (non SportIdent) events are imported into the OA Results website as TAB delimited text files. TAB delimited files are best prepared using a spreadsheet program such as MS Excel and saving the file as plain text. The following rules should be followed:

- The first row in the file should have the class details (such as name, distance, climb, and number of controls - separate by commas) for the first class.
- In the following rows, put the competitor's details, one per row. The placing must be in the first column, name in the second column, and time in the last column.
- For the time column you will need to format the cells to be a number with two decimal places to ensure that the time appears correctly (use a . not a :).
- Other information such as the competitor's club can be put in columns between the name and the time. If information such as the competitor's club is put in, then an entry must be put in for every competitor (eg '-' for no club).
- For 'dnf' competitors, leave the placing column blank, and put 'dnf' (lower case) in the time column.
- Terminate a class by leaving a **single blank** row.
- Repeat for all remaining classes.

A word processing program such as MS Word may also be used (save the results as a text file). In this case use a *single* TAB to separate the columns and a carriage return (or enter) to separate rows. Do *not* use extra spaces or TABs to make the formatting look 'correct' in the word processor. Ensure there are no double or multiple spaces as these will be interpreted as TABs.

A sample TAB delimited file layout is



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Red 1	9.2 km	200 m	15 C			
1	Lorenzo Calabro	TF	54.50			
2	Nino Calabro	TF	62.50			
3	Geoff Peck	UG	67.38			
4	Anna Sheldon	UG	68.56			
5	Neil Simson	TF	70.59			
6	Ian Anderson	UG	75.04			
7	Matthew Bourke	UG	78.18			
8	Aaron Woods	TF	78.24			
9	Patrick Walsh	UG	84.55			
10	John Smith	-	89.16			
11	Dane Cavanagh	TF	95.25			
12	Ben Hiley RR	104.28				
	Mark Neumann	EN	dnf			

Red 2	7.1 km	140 m	13 C			
1	Kieran Sullivan	BU	51.43			
2	Tim McIntyre	UG	56.05			
3	Oliver Mitchell	UG	61.21			
4	Ainsley Cavanagh	TF	64.25			
5	David Neumann	EN	69.31			
6	Mark Roberts	UG	78.37			
7	Sam Wilson	TF	80.48			
8	Mathieu McGuire	UG	93.30			

Administrative Guidance for Organisers of WRE Events

In addition to the WRE Event Guidelines, the IOF has published a short WRE administrative guide. The equivalent document for IPF events is here <http://orienteering.org/foot-orienteering/event-organizing/organisers-guidelines/> however the document for WRE events does not appear to be on the IOF web site. However a copy can be obtained from oa_technical@netspeed.com.au and is also inserted here (can be opened in the Word version of this document only).



Instructions for
World Ranking Event

Updated Technical Documents on the OA Web Site

As part of the ASC Participation funding grant, some technical information has been updated and is now on the OA web site as follows

Preparing relay courses in OCAD - this document covers the following with an example relay course:

1. Course splitting
2. Assignment of team numbers
3. Printing maps for each team
4. Export course details to for import into Sports Software for Relays (OS)

It can be downloaded from <http://www.orienteering.asn.au/technical/> - see under "Resources for Course Planners"

Guidelines for Map Printing – refer to the following page on the OA Web Site - <http://www.orienteering.asn.au/technical/mapping/printingmaps/> and in particular the information on the "Print Tech Project" and the documents that can be downloaded from the section entitled "Digital Printing Made Simple".



OA Conference Technical Report

Much of this content has been communicated previously.

Summary

This report contains the following topics

1. Foot Orienteering Rule Changes Agreed in 2011 – presented at the previous conference and agreed by the Technical Committee in 2011
2. Proposed new changes to the Foot and IOF Rules based on guidelines and rule changes from the IOF
3. Future Rule (OA Rules, ANZ and Oceania Rules) and Guideline changes yet to be finalised for both Foot and MTBO)
4. Other Technical Information

Foot Orienteering Rule Changes Agreed in 2011

Changes to the Competition Rules for Orienteering Australia Foot Orienteering Events

Some changes were flagged at the 2010 conference and subsequently further discussed at the 2011 April Technical Meeting. The changes were then circulated with the Technical News in May. The changes relate to

1. Measurement of Course Distance – the Section on Sprint Format in Appendix 8 be updated to permit course distance for sprint to be measured and advertised as the straight line distance as long as competitors are notified that this method is used.
2. Controller and Event Reports – Section 32 will be simplified to 2 rules only
 - 32.1 No more than 6 weeks after the event, the Orienteering Australia Controller shall send a report to the Orienteering Australia Controller appointing body with copies to Technical Director, Technical Chair, and OA Executive Officer. Report may be on a proforma as made available from the Technical Chair and include at a minimum:
 - Details of complaints and protests
 - Details of issues that impacted on the event
 - Deviations from the rules
 The controller may include additional reporting material from the organiser and planner as necessary.
 - 32.2 If requested the Orienteering Australia Controller shall submit a progress report to the Orienteering Australia Controller appointing body with copies to Technical Director, Technical Chair, and OA Executive Officer
3. Winning times for elite courses – Rule 16.10 will be modified as in the table below – the new values are those highlighted in yellow. Note these changes have been notified to the organisers of the Australian 3 Days.

General event formats	M 21E	W21 E	M21 A	W21 A	M17-20E	W17-20E	M17-20A	W17-20A
Sprint	12-15	12-15	12-15	12-15	12-15	12-15	12-15	12-15
Middle distance	30-35	30-35	30-35	30-35	20-25 30-35	20-25 30-35	20-25 30-35	20-25 30-35
Long distance	75-90	60-70	75	60	70	55	60	50
Relays*	135	120	135	120	120	110	120	110

General event formats	M 21E	W21 E	M21 A	W21 A	M17-20E	W17-20E	M17-20A	W17-20A
Specific events								
Australian 3-Days Prologue	12	12	n/a	n/a	12	12	n/a	n/a
Australian 3-Days Day 1	30	30	55	45	25 30	25 30	45	40
Australian 3-Days Day 2	80 85-90	60 65-70	55	45	65 70	50 55	45	40
Australian 3-Days Day 3	45	40	55	45	40 45	35 40	45	40
Australian Long Distance Championships	90	70 80-85	75	60	70 75-80	55 65-70	60	50
Australian Relay* Championships	135	120	n/a	n/a	120	105	n/a	n/a

In addition, a provision will be included to allow NL winning times to be varied with the approval of the HP Manager – e.g. to make a WOC trial longer than 90/70 minutes. For example 75-80 mins for W21E and 100-105 for M21E. Junior courses may also be longer 65-70 for W17-20E and 80-85 for M17-20E at the same event in preparation for JWOC.

Modification to Controller Accreditation Requirements

These were flagged at the 2010 conference and agreed at the Technical Committee meeting in April. They have been included in the new L3 Curriculum approved by the ASC in November.

The following changes are proposed

1. Accreditation period be 4 years for all Levels, however the points can be accumulated over rolling periods of 5 years for Levels 1, and 8 years for Level 2 and 3 (previously 10). Process to implement the changes needs to be defined, and would be done with the Manager Coaching and Officiating once the current backload is resolved.
2. Group C Events –the current categorisation here is unnecessary and should be simplified to
 C1 – OY and/or Pre-entry events justifying a controller
 C2 – other minor events
3. Re-accreditation Points – changes to remove less relevant activities from higher levels, and require attendance at a mandatory update session over the period at which points can be accredited e.g. at least once in a 8 year period since initial accreditation and in each 8 years thereafter for a level 3 controller. Attendance at update courses provides opportunities to interact with other controllers. Considering the changes that can occur to event formats, technology, rules and event organisation requirements (e.g. Risk Management, Environmental Requirements) over the periods in which points can be accumulated, update courses would assist all controllers in keeping up to date.

Suggested Changes to align the points to be available from Controlling events are also made i.e. Level 3 must control a Group A event. Level 2 can be Group B or A2 (which only requires a level 2 controller)

The proposed changes (taking into account the changes proposed for C1 above and events to be controlled) are below. Removed point options are shown with strikethrough.

Task	Number of points towards re-accréditation at:		
	Level 1	Level 2	Level 3
Controlling – Group A event	NA	NA	40*
– Group A2 or B event	NA	30*(a)	30
– Group C event	20*	20	20
Course-planning – Group A event	25	25	25
– Group B event	20	20	20
– Group C1 event	15	15	15
– Group C2 event	10	10	10
Organising – Group A event	25	25	25
– Group B event	15	15	15
– Group C1 event	10	10	10
– Group C2 event	5	5	5
Attend controller update session	10-20*	10-20*	10-20*
Attend organiser/course planning course	10	10	
Conduct controller workshop	20	20	20
Train new controller	10	10	10
Other appropriate tasks	As determined by State Association Technical Director		As determined by OA Technical Director
Total points required	40-60	60-75	80-100
Re-accréditation period	4 years	4 years	4 years
Points can be accumulated over	5 years	8 years	10-8 years

* Mandatory task in each period in which points can be accumulation from the initial accreditation (i.e. each 5 or 8 year period). For Level 3, accreditation points may also be obtained from controlling Oceania Championship Events.

To clarify the accumulation of points for newly accredited controllers the following guidelines are proposed

- 1 If you do not attend update workshop in the first 4 years, then your initial workshop may count for points for the first re-accréditation after 4 years. But an update workshop is then required in the next 4 years – i.e. before your second reaccréditation (8 years).
- 2 If you aren't able to control the mandatory event after the one completed to get initial accreditation within the 4 years after accreditation, then you can use that first controlling activity to count for points towards your first reaccréditation. But you will then definitely have to control the required event in the next 4 years.



Proposed Rule and Guidelines Changes

Changes based on IOF Jury Guidelines and Associated Topics

The IOF have released 2 documents relevant to all orienteering disciplines

1. "Guidelines for juries at IOF Orienteering Events"
2. Cancelling a competition: clarification of rule 26.12

As part of the second document recommendations regarding splitting the previous rule IOF Foot 26.12 in the section on Fair Play into:

26.12 The organiser must stop, and postpone or cancel a race if at any point it becomes clear that circumstances have arisen which make the race dangerous for the competitor, officials or spectators.

26.13 The organiser must void a race if circumstances have arisen which make the race significantly unfair.

Note that neither the Australian Foot or MTBO rules have an equivalent of the above.

Recommendation: The IOF rules be included in the Foot rules where they would be the same numbers as above and the MTBO rules as 20.13 and 20.14.

Although the above may have been implicit in event organisation, the above make the requirements and responsibilities clear.

The remainder of the second document provides guidelines on when a course or event should be cancelled because the course(s) is no longer considered "Fair". Cancellation may be either because the organiser determined that this is required (e.g. M21E course on 2011 Day 2 of Australian 3 Days) or as a result of a complaint (and subsequent protest). Appendix 10 in the Foot Orienteering rules will be updated to reflect the IOF recommendations.

Future Rule and Guideline Changes

Review of OA Competition Rules related to Australian Schools Orienteering Championships, and ASOC Rules and Guidelines

The full document prepared by Blair Trewin follows this report. Note that most recommended changes will not be done until agreement is reached with ASSOC. However some minor changes that are independent of the ASSOC rules and the move of schools related rules to a Guideline, will be included in the January 2012 update to the Foot Orienteering rules.

Changes to ANZ Challenge Rules (Foot) include Sprint and Middle

The ANZ challenge for Foot Orienteering currently comprises only a Long Distance and a Relay event (MTBO includes Middle and Sprint also). As the event is held in conjunction with the Oceania Championships where Sprint and Middle Distance events are also held, OA will propose to New Zealand that these events are also included. This would require a changed process to calculate the trophy results.

Additionally other changes to be suggested are:

1. Change to the use of reserves so these can be used if a valid reason exists but the selected team member can return for a later events
2. Change to have the option for ANZ challenge runners to be last in the class

MTBO Rules Review

Two areas are currently under review

1. Oceania rules – currently no separate MTBO rules exist, however MTBO has different class requirements from the Foot Championships, Blake Gordon is currently preparing a specific MTBO rules to cover areas that are different to the Foot rules. New Zealand will be consulted when a draft is available.



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2. The RULES AND GUIDELINES FOR MOUNTAIN BIKE ORIENTEERING have been developed based on the IOF rules. As a result they do not cover some of the same areas as the Foot rules e.g. the specific requirements for controllers and event classification, Guidelines on general topics such as Environment, Health and Safety etc. Discussions are to be held with the MTBO committee considering the following:
 - a. Include more specific Australian focused rules where needed e.g. controllers
 - b. Include MTBO specific guidelines where needed e.g. Course Planning
 - c. Refer to the Foot Rule Guidelines where these cover general topics e.g.
 - Appendix 3: Approved control cards and marking devices
 - Appendix 4: Health and safety guidelines
 - Appendix 7: Environmental code of practice
 - Appendix 9: The Leibnitz Convention
 - Appendix 10: Guidelines regarding complaints and protests

Technical Topics for Information

Proposal to Modify Control Descriptions Submitted to IOF

Orienteering Australia submitted to the IOF a proposal to modify the International Control Descriptions (distributed to states for discussion in early 2011). Main points in the IOF response were:

- IOF desire to keep the IOF Control Descriptions as stable as possible
- The current version was published in 2004 and IOF has successfully resisted the (rather few) requests to change them since then
- IOF Control Descriptions are quite closely linked to ISOM and a new version of ISOM is currently being prepared by the IOF Map Commission (although delayed)
- expecting that it will be sensible to produce a new version of the IOF Control Descriptions soon after the new ISOM is ready
- some suggestions that extra descriptions for Sprint orienteering are also possible

Level 3 Controller Workshop

A successful workshop was held in Canberra in conjunction with the Oceania – Australian Championships. Due to the requirement for controllers to attend refresher workshops, participants included both existing and prospective L3 controllers as well as others just interested in improving their knowledge.

The next workshop in 2013 will also be in Canberra with the Australian Championships carnival. Note the new Level 3 curriculum has been approved by the ASC.

Technical Reference Documents

As part of the ASC grant, some funding is available for the preparation of Technical Reference documents. These are to cover

1. Relay Course Planning in OCAD – a draft is complete and was used for the Australian and Australian Schools Relays in 2011. This will be posted in the OA web site.
2. Map Printing Guidelines (see mapping report)
3. Event Management – Eric Andrews has provided a suite of documents based on his event organisation activities in Qld. A listing of the documents has been prepared and is available from Robin Uppill. Some review and addition to this set will be done in 2012.

Robin Uppill, Director Technical

With assistance from Jenny Casanova and Blair Trewin



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OA Conference Mapping Report

Mapping - Adrian Uppill, Chair Mapping Committee

Last year I reported on the increasing use, particularly in Europe, of air-borne laser scanning data for the making of orienteering maps. Australian mappers are also exploring its use and this year contour data derived from laser scanning was used for the SA Championship map 'Casuarina Ridge' at Whyalla. Laser scanned data is generally too expensive for orienteering mapping unless such data is donated free of charge (or at subsidized rates) through the generosity of others such as a large local company as was the case for 'Casuarina Ridge'.

The newer technologies of digital aerial photogrammetry and air-borne laser scanning and also orthophoto data are now seemingly overtaking the invaluable photogrammetry work that Chris Wilmott has done over the years on his stereo plotter / analogue machine. Chris advises that the last base map produced was in March 2010. It was in 1978 that Chris produced his first contour base map specifically for orienteering mappers and since then has produced 410 base maps. The photogrammetry provided by Chris over this time is duly recognised as an invaluable service in the production of highly accurate orienteering maps and in the development of orienteering itself in Australia.

Given the well-attended Mapping Technology Workshop held during the 2010 Australian Championships Carnival, another workshop was conducted this year. The topic was digital printing, in particular, how to prepare maps for digital printing. In preparing the presentation for the workshop I am particularly grateful to the expertise provided by Ken Dowling. Ken provided guidance and prepared several papers on digital printing all of which are now available for viewing / download at his webpage MapSport www.mapsport.com.au/mapping-resources/

The Mapping pages of the OA web site have also been updated in respect to digital printing. The key changes here are:

- Using the PrinTech 'test' sheet as a quality control tool
- Guidelines for printing non-offset printed maps for WRE's
- Digital printing made simple
- A link to MapSport
- Recommendations on paper including waterproof paper

Requests for map deviations

- Approval was given to use ISOM symbol 209 Boulder cluster on the 2011 Australian Sprint Prologue map as there is no equivalent symbol in ISSOM.
- Approval was not granted to use a scale of 1:7500 for the 2011 Oceania Middle Distance, 'Yackandandah'
- Approval granted to use digital printing for several events

Please note that requests for map deviations require at least 6 months' notice before the event. In fact it is preferable that any variation be approved before or at the early mapping stage thereby allowing sufficient time to complete the map according to the outcome of the request, and hence ensure course planning is done using a map on which a determination has been made for any request.

Map samples from the 2011 Frazzle Rock Carnival were sent to the IOF Map Commissioner for comment and feedback, which were then shared at the Mapping Workshop. Maps from the 2011 Oceania Carnival will also be forwarded to the MC. The MC's comments have been very informative and useful in assessing what we need to do in order to meet WRE digital printing standards.

A forum for Australian (but not exclusively) orienteering mappers to share news and knowledge was set up (thanks to Robbie Preston) using Google Groups, see: <http://groups.google.com/group/oamapping?lnk=srg&hl=en>



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A Power Point presentation 'The Orienteering Course Map' was delivered at the Level 3 Controllers Workshop held in Canberra, October 2011. The presentation focused on the requirements and duties of a controller to ensure the map is suitable for 'running navigation'.

