Pathfinder Honour:

Trainer's Notes

Orienteering 1

Instructions to Trainers / Instructors of this Honour

Thankyou for being involved with this Honour. These notes have been developed to assist in teaching / instructing this honour. We recognise that there is much more information available and we are grateful that you should share your expertise.

Please remember that Honours are designed to develop our Pathfinders in many ways; their interests, their knowledge and their relationship with their Saviour and Creator. Your enthusiasm and creativity will have a huge impact on those doing the honour.

To complete an Honour, the following (where applicable) must be completed satisfactorily:

- Physical and Practical Requirements.
- Honour Workbook.
- Honour Assessment Sheet. *(On SPD Honour Website but Leader's level access is required)*

Additional Reference Material

Please see final page for additional reference material

Acknowledgements

The contribution of materials and advice from Orienteering Queensland is gratefully acknowledged; in particular that from Liz Bourne & Eric Andrews. Also to Geoff Harvey (Invercargill NZ) for advice on Orienteering in New Zealand.

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BEFORE YOU START

The objective of this honour is to give participants an exposure to the sport of Orienteering. The intent is to only use basic resources (ie Manual Control Card Punch System) rather than sophisticated electronic equipment that is being applied to professional and national events.

These notes were compiled by Albert Piper of the South Queensland (Australia) Conference. Albert is a member of Orienteering Queensland (QOA) which is affiliated with Orienteering Australia, which in turn is affiliated with the world body - the International Orienteering Federation (IOF).

The contribution of materials and advice from Orienteering Queensland is gratefully acknowledged; in particular that from Liz Bourne & Eric Andrews.

While much of the information provided in these notes will apply to any part of the world, trainers need to note that the notes have a South Queensland 'flavour'. Local requirements need to be taken into account and applied.

A team of competent instructors / trainers is strongly recommended.

REQUIREMENT 1: What is 'Orienteering'?

Orienteering is a sport which combines outdoor recreation with map reading and navigational skills.

It involves navigating through the bush with the aid of a specially produced map and orienteering compass. The objective is to locate checkpoints (controls) on various natural and man-made features along the way; for instance boulders or track junctions.
Picture: *Approaching a Control Point.*
Source: http://upload.wikimedia.org/wikipedia/commons/8/80/Tajfuto.jpg

In competitive orienteering, the person successfully completing their course in the quickest time is the winner.

It is this stimulating mental challenge as well as the physical activity that makes orienteering so popular. Because a variety of courses are offered to suit all ages, levels of fitness and ability, it is a sport the whole family can participate in and enjoy - from beginners through to the elite competitor.

You can walk, jog or run, depending on your level of fitness and how competitive you wish to be. Orienteering has the nickname of "Cunning Running"

The History of Orienteering

Orienteering began in Scandinavia in the nineteenth century. It was primarily a military event and was part of military training.

It was not until 1919 that the modern version of orienteering was born in Sweden as a competitive sport. Ernst Killander, its creator, is often called the father of orienteering.

In the early 1930's, the sport received a technical boost with the invention of a new compass which was more precise and faster to use. The Kjellstrom brothers, Bjorn Alvan, and Brunnar Tillander, were responsible for this new compass. They were among the best Swedish orienteers of the 1930's with several individual championships among them.

Once Orienteering became popular as a family sport in Scandinavia, it spread throughout Europe. It reached Australia as an organised sport in 1969

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REQUIREMENT 2: Name three disciplines of Orienteering

Orienteering disciplines include Mountain Bike, Wheelchair, Snow Skiing, Parks and Street, Horseback, Scuba and Cross-Country.

Most orienteering events are standard cross-country ones where the controls must be visited in the specified order. These range from local club events where there may only be four courses offered to State Standard Events which have five to eight courses.

There will generally be a Blue (Very Easy), Green (Easy), Orange (Moderate) and Red (Hard) course offered. In these types of competition, orienteers may enter any standard of course they wish. Men and women compete on the same courses regardless of their age.

Other types of events include:

- Score - competitors are required to find as many controls as possible in a given time - usually 30 or 60 minutes - in no set order. Varying points are often allocated for each control. Those of the hardest technical standard have the highest points.
- Scatter - competitors have to find all of the controls but may get them in any order
- Night – all the above events can be done at night to give it a new dimension and extra difficulty. To ease the difficulty a little, torches are required and reflective tape is fixed to the control flag on all sides so that it will be seen at any direction whin torch light hits reflective tape.

REQUIREMENT 3: List the items required for Orienteering using the following headings:

a. Clothing

Clothing requirements should be based on climatic conditions at the time of the event. For beginners, wear comfortable outdoor clothes. Shorts are OK, but long pants will protect the legs when going through the bush or long grass.

Keen orienteers compete in colourful 'O suits' made of lightweight, breathable nylon or lycra. These provide protection against vegetation as well as being comfortable to wear in warmer conditions. Many orienteers also use gaiters to protect their legs against scratches and bruising.

b. Footwear

For beginners, sturdy footwear such as joggers is adequate. There is a wide variety of special orienteering shoes available but many people find that shoes with rubber studs, designed for grass sports such as hockey, are also quite suitable. Running shoes generally do not provide sufficient ankle protection in rough terrain.

c. Equipment

- An orienteering compass – these may be purchased from most outdoor stores or borrowed at the event
- A map (supplied by the organisers)
- A plastic bag to protect your map
- A hat and wear sunscreen especially if it is likely to be hot
- A whistle to attract attention if injured or lost
- A watch
- Water to drink, before and after the competition
- Basic First Aid kit

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REQUIREMENT 4: Describe the basic rules and safety considerations for Orienteering

The basic rules of orienteering:

Orienteering is an individual sport with the emphasis being on self reliance and making your own decisions. While you are learning about the sport, you may go with a family group or other people but as you gain in experience and wish to be competitive, you need to be able to complete a course on your own. Younger children should not be allowed out on a course without an adult until they have demonstrated an ability to successfully navigate on their own.

On most courses, you are required to visit the controls in the designated order. You should not follow, talk to or interfere with other competitors unless you are completely lost and unable to relocate yourself on your own. Movement of or removing controls will cause others to get lost and is frowned upon quite sternly.

Orienteers should return to the Assembly Area within 3 hours of starting their course, even if they have not completed it, otherwise a search will be mounted.

Safety:

It is recommended to carry a whistle with you when competing to attract attention if lost or injured. The emergency signal is six blasts at ten second intervals, repeated every two minutes. Anyone hearing this must come to your assistance.

A Safety Bearing is given at the start. It is the direction to go if lost.

Before starting, check to see if water is provided and at which controls on the courses. On hot days, carry some water so as to have plenty to drink both before and after competing.

It is recommended to carry a watch to know how much time has elapsed since starting.

As with all sports, injuries can occur. Ankle sprains, cuts and scratches are the most common problems. Many orienteers strap their ankles with strapping tape to help prevent injuries. A First Aid kit is available at the registration area but it is suggested that you also bring a simple first aid kit with you to the event.

In Australia, snakes are rarely encountered during orienteering events as they tend to be scared away by the noise of competitors moving through the bush. However, if bitten, stay still and try and immobilise the affected limb and apply a pressure bandage from some of your clothing. Blow your whistle to attract the attention of other orienteers.

REQUIREMENT 5: Explain the different levels of difficulty for Orienteering courses.

Most orienteering events offer a number of different levels of difficulty. Typically, these range from very easy (blue) to hard (red). Before starting, check for any local variations.

- **Blue (Very Easy)**: The beginner's courses are usually about 1-2km in length and follow easily identifiable, linear features such as tracks and fences.
- **Green (Easy)**: These courses encourages some simple, off-track route choices
- **Orange (Moderate)**: These courses require a moderate standard of navigation
- **Red (Hard)**: These courses are the most technically difficult. They vary in length to suit age, standards of fitness and type of terrain. In fast open forest, the longest Red Course may be up to 15km long while the shortest one may be 2 – 3km in length. Course distances are set to achieve a certain winning time so will vary depending on the type of terrain. Even for very fit young orienteers, it is rare for them to achieve a kilometre rate better than 5 mins per kilometre in most Australian terrain.

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REQUIREMENT 6: Explain what to do on a typical Orienteering Course

NB. The objective of this requirement is to give participants a basic understanding of what is expected on a typical orienteering course. It is a precursor to the real thing. It gives participants an insight into the relevance of map-reading skills etc. There are useful hints.

The Start:

The start of the event may be some distance from the registration area, so before you set off, check that you have:

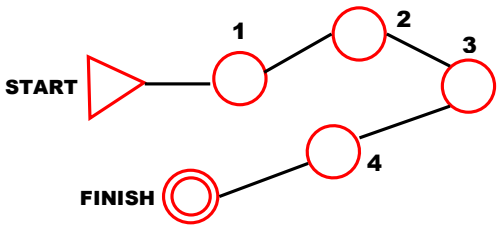
- Your map and a plastic bag to protect it.
- The control description list.
- Your control card.
- A compass.
- A whistle for safety.
- A watch to check the time.

The route to the start will be indicated by signs or streamers.

At the start, wait behind the sign indicating your course for the start official to allocate you a start time and write it on your control card. Competitors doing the same course are separated by at least two minutes at the start to minimise following. While you are learning about the sport, you may go around a course with a friend or family members if you wish.

Once the starter calls out the start time or the clock sounds its long "beep", move to the master maps and copy your course carefully onto your blank map. In major competitions such as a Badge Event or State Championships, a pre-marked and bagged map will be provided for each competitor.

On the master map, a red triangle marks the positions of the Start of the course. The position of each control is depicted by a red circle and the finish is marked by a double circle.



The numbers beside each control indicate the order in which they are to be taken and correspond to the control description list for that course.

On the course:

Once you have marked up the course onto your map, leave the Start area and decide how to navigate to your first control.

Control sites are marked by orange and white, triangular markers, called flags – see the picture in Requirement 1. These are often hung from trees and bushes, generally up to 1m off the ground. The control number may be found on the side of these flags. In major competitions, the flags may be hung from metal stands, in which case the control number will be found on the side of the stand.

Flags have plastic punches attached to them which are used to mark the relevant box on the control card. Each flag has a different patterned punch and this is used to indicate that you have visited the correct control site. When stands are used, the punch is found on the top of the stand. You must visit the controls in their listed order.

Orientate your map using linear features or your compass so that it is lined up with your direction of travel and the features on the ground. Try to match map features with what you see around you and vice versa.

Near controls, looks for ground features that match those on your map rather than just searching for the orienteering flag. Be aware of the distance you are travelling.

At a control:
Note: For more details on Controls, see the following Requirement.

When you get to the control, check that the feature and code number on the control flag (or stand) match your control description list. If you are sure it is the control on your course, use the punch to mark the corresponding numbered square on your control card.

Move a short distance away from the control site and plan your route to the next control.

If you are uncertain where you are:

- First, try to relocate yourself.
- Use obvious, linear features such as tracks, fences or creeks if available, or go back to your previous control.
- If you think you are completely lost and are unable to find where you are on the map, ask another orienteer for help or wait for assistance at any control you find. Someone will collect the controls after the course closure time and will be able to take you back to the assembly area.
- If you follow the safety bearing given at the start, you may be able to get back to the assembly area on your own.
- If all else fails, or if you are injured, stay still and blow your whistle.

The emergency signal is six blasts at ten second intervals, repeated every two minutes. Anyone hearing this must come to your assistance.

At the finish:
As you pass the Finish banner, your time will be recorded and written on your control card which is handed to the finish officials. The card will then be checked to see that all the controls on your course have been visited.

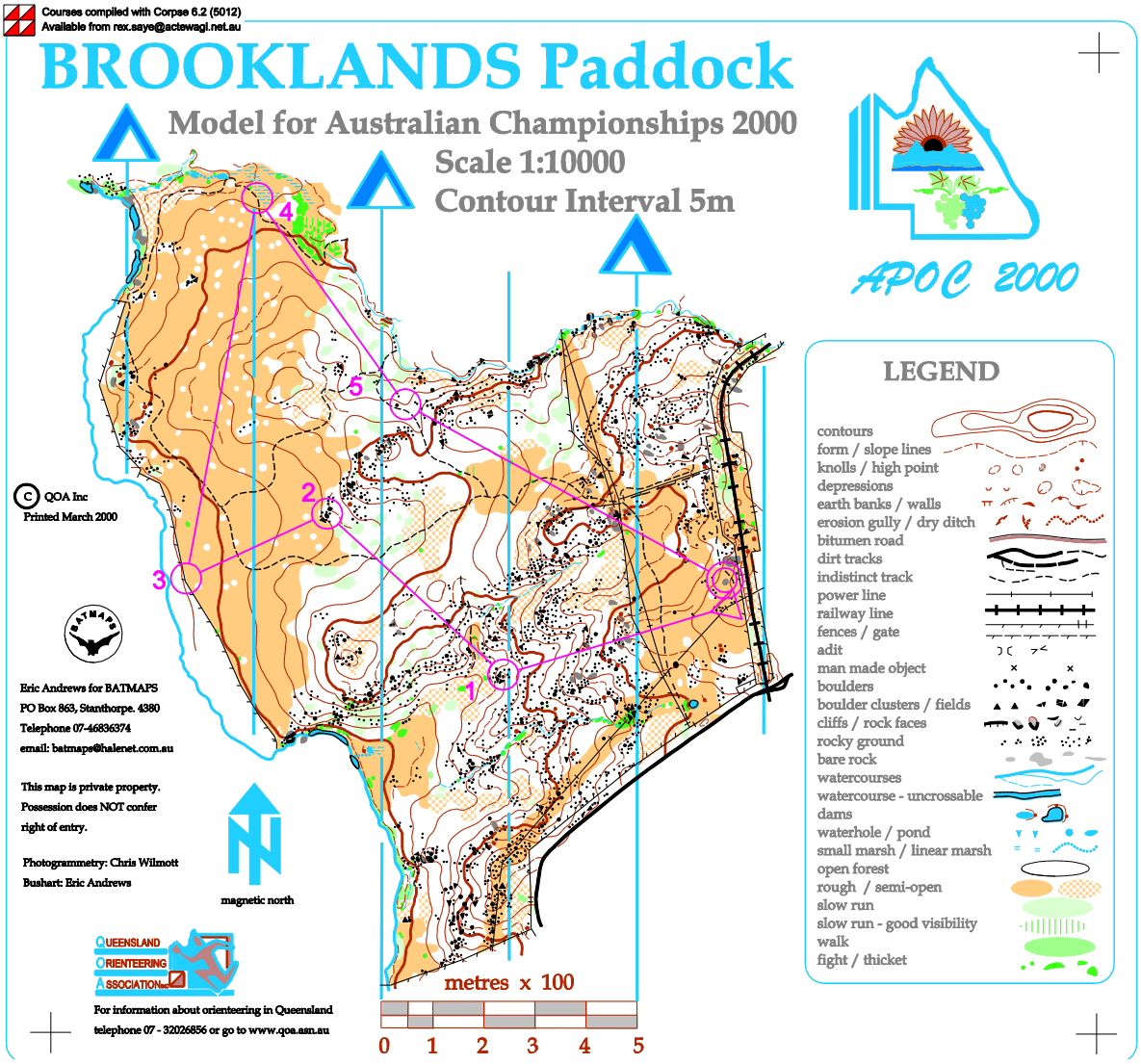
Even if you have not completed your course, you must report to the Finish area so that the event organiser knows that you have returned safely. You should ensure that you return no later than 3 hours after you started or a search will be mounted.

REQUIREMENT 7: Explain the symbols used on a typical Orienteering Map

The orienteering map
An orienteering map is a specially produced topographic map and, as it shows a lot of detail, allows for precise bush navigation. Such maps depict natural features such as contours, watercourses, rock detail and vegetation as well as constructed features such as roads, buildings and power lines.

Most orienteering maps are produced at a scale of 1:15,000 (i.e. 1cm on the map equals 150m on the ground) although in detailed areas the scale is often 1:10,000. For park and school maps of small areas, the scale may be even larger eg. 1:5,000 enabling a lot of detail to be shown.

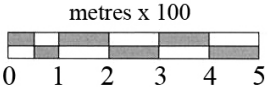
Most of the maps produced for orienteering are printed in colour, allowing a variety of features to be clearly shown. The map displayed overleaf is an example of a typical orienteering map. See *Orienteering 1 Honour Trainer's Map Brooklands Paddock* for a proper scale version.

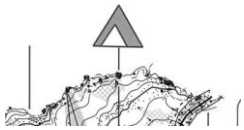


For the vegetation, the colours on the map indicate how 'runnable' the terrain is from an orienteering perspective.

- White sections depict generally open bushland;
- Green areas show vegetation with the darker shades indicating very thick areas;
- Yellow areas indicate more open ground where running is easier;
- Black is for tracks, fences, powerlines and buildings but is also used for rock features such as boulders and cliffs;
- Grey represents areas of open rock, typically found in granite country
- Blue is for water features such as creeks, dams and marshes (although these may be dry, depending on the season);
- Brown is used for contour lines which join points of equal height but is also used to depict earth features such as ditches, earth banks and knolls.

In the margin of the map is a scale bar from which you can measure distances on the map. The legend shows the symbols used for the various features on the map.





The lines with arrows on the top of the map show the magnetic north. Orienteering maps are always produced with the top of the map aligned to magnetic north.

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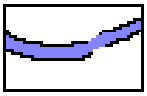
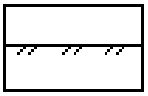
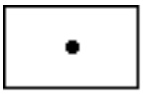
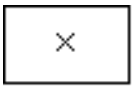
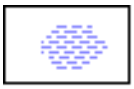
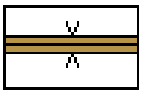
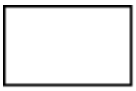
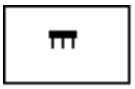
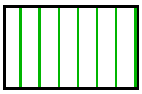
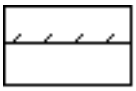
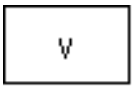
Examples of commonly used Orienteering Map symbols are as follows:

 Bare Rock	 Water Course (Uncrossable)	 *Fence (Uncrossable)	 Out of Bounds	 Rough Open
 Boulder	 Rocky Ground	 Man Made Feature	 Fight	 Seasonal Marsh
 Adit	 Open Forest	 Cliff	 Water Course	 Semi Open
 Run (Good Visibility)	 Fence	 Depression	 Slow Run	 Pit

Control descriptions

After deciding which course to do, select a control description for that course. This lists the information about the controls you have to visit (ie. a description of the feature you are looking for as well as the number on the control flag that marks that feature). For the Blue (Very Easy), Green (Easy) and Orange (Moderate) courses, these descriptions will be written in English but for the Red courses, international symbols are used.

Brooklands, 25 Feb 2007

Blue (Very Easy) Course - 2.5km, 40m climb

Grade of course — *How long the course is*

Where you start from — Start Gully

1. (51) Pond
2. (52) Fence junction
3. (53) Thicket
4. (54) Boulder
5. (55) Track bend

Number on the control flag — *Description of the feature you're looking for*

Navigate 150metres to Finish (*How far it is from the last control to the Finish)*

You also need to complete a control card. On the reverse side is a series of boxes corresponding to the controls you will visit. These boxes are used to record the control sites you have visited. The card also provides information for the event organiser, such as your start and finish time, so that your elapsed time may be calculated. It is important to complete both sections of this card as the tear off slip at the bottom enables the organiser to check that all competitors have returned safely. Fill in all the information that you can on the card, especially your name and phone number and the course you are doing.

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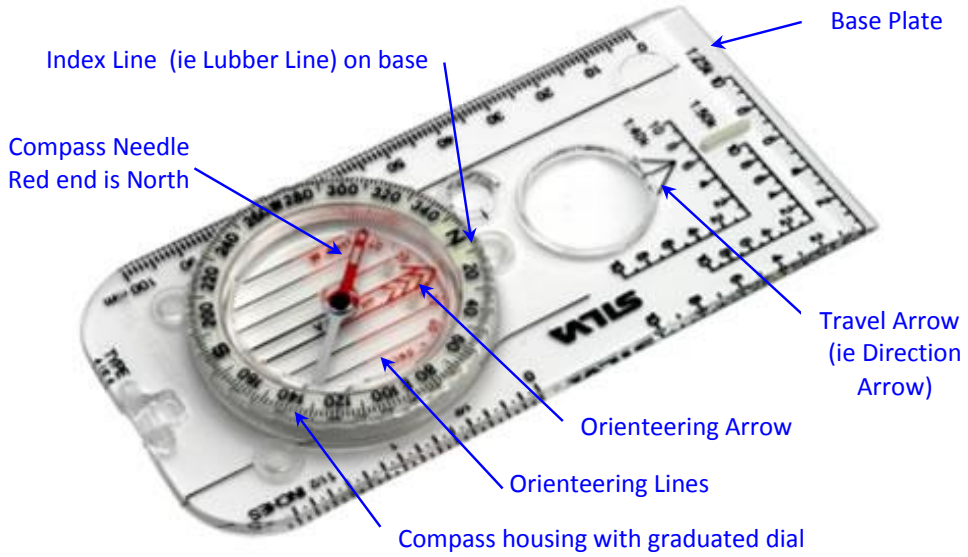
REQUIREMENT 8: Name the parts of a typical compass used for Orienteering

Parts of a typical orienteering compass are shown in the diagram below



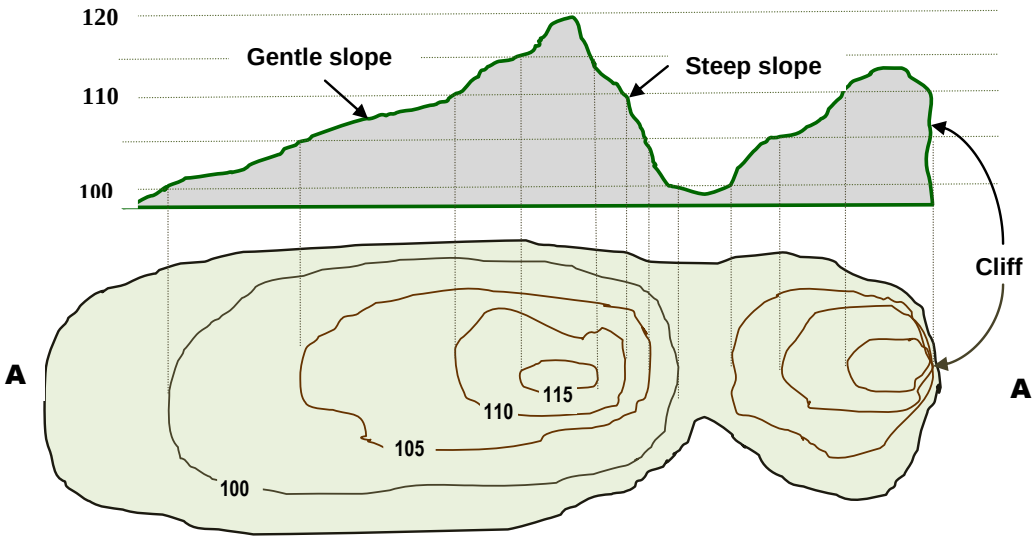
REQUIREMENT 9: Demonstrate how to orientate a map using land features and a compass.

To use your map successfully, it should match what you can see around you. To begin with, use your compass to find where north is and then turn the map so that the top of the map also points to the north. Your map is now orientated. You can place your map on the ground in front of you and step around it. If you know where you are on the map, its features will match those on the ground as you look around in all directions.

REQUIREMENT 10: Show your understanding of the following:

a. Land formations and contour lines

In the diagram below, the land formation is shown by contour lines which represent a change of 5m in elevation.



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b. The scale used on Orienteering maps

The most common scales used on orienteering maps are 1:10,000 and 1:15,000.

This means for a 1:10,000 scale, 1 mm on the map represents 10,000 mm (which equals 10m) on the ground.

c. Handrails. List four possible handrails you could follow.

Handrails in orienteering are obvious linear features on a map that are easy to follow and lead you along your desired direction of travel. Examples of a 'handrail' include:

- Creeks
- Watercourses
- Fences
- Roads / tracks
- Power lines

d. The use of Attack Points

Attack points are obvious features on the map that are easier to find in the vicinity of the control you are looking for. You can navigate to them, then use fine orienteering skills eg. compass bearing to find the control.

e. Aiming Off

When heading for a Control which is on or near a linear feature (viz. A watercourse or track), the best way to find it is to deliberately aim to one side of it. Then, when you reach the linear feature and cannot see the control, you know which way to turn to find it. This technique is called aiming off.

REQUIREMENT 11: Complete a theoretical orienteering exercise

Reference *Orienteering 1 Honour Trainer's Map Brooklands Paddock*

NB**. The following table contains the answers that are required to complete this requirement in the Workbook. **It is strongly recommended that students attempt their Workbook without referring to the answers. Use the answers to reinforce the concepts.

Before you start thinking about the course and before you start running, inform yourself about the map in general.

a.	What is the scale of the map?	*1:10,000*	b. What is the contour interval? *5m*

Now orientate the map and pretend you are standing at the start. You are facing west southwest in the general direction of number 1 Control.

c.	Are you standing on a hill or in a gully?	*Hill*
d.	What is the feature you are standing at for the start?	*Power Pole*
e.	What other features can you see to help you orientate your map?	*Behind – fence; railway line running north/south; right down hill 60m away- bare rock; Downhill - trees, road, overhead power lines*

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Start to Control 1 – Knoll

a. What is the most probable route?	*Direct route, follow gully down.*
b. What is the distance to the control?	*450m*
c. How many metres of climb are there for this route?	*0 m*
d. Name at least two things which will tell you if you have overshot the control:	*Area behind flattens out. Gully & track to the right*

Control 1 to Control 2 – Boulder

a. What is your route choice?	*Direct route or use track up through gully. Hit track. Follow track till track comes out into the open. Follow tree line up to the control*
b. Take a 30 second look at the map, then cover it & describe the features and terrain you will see if you go by the direct route	*Drop down 5m gully, track up to the north, climb of 15 to 20m, Knoll to the right at the top of saddle, down to track and on to control, all of route under tree cover.*

Control 2 to Control 3 – Fence Bend

a. What basic skill would you do on this next leg?	*Aim off*
b. What is the distance to the control?	*300m*
c. Name any surrounding features that would aid your navigation?	*Track to bend*
d. What would your pace count be on this leg?	*All pace count is different. Approx 160 paces on the right foot*

Control 3 to Control 4 – Track Bend

a. What would be your route choice from 3 to 4?	*Move out to track & follow track around to control*

Control 4 to Control 5 – Gully- shallow

You decide to navigate on a dead-straight bearing to control 5.

a. What would your bearing be?	
b. How many metres of climb are there on this route?	*25m*
c. List 2 attack points as you approach the control?	*Track junction, Track & water course junction*

Control 5 to Finish – Bare rock

a. How would you get to the finish?	*Follow track up & through gates & continue following track to second gully up to control on bare rock*
b. How long was the course you just did?	*3.2km*

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PRACTICAL PART

REQUIREMENT 12: Find your own pace count

The distance you have to travel between points can be estimated by the number of paces you have to take. This is best practiced by measuring a known distance eg. 100 metres and then pacing it out at both walking and running pace. Orienteers simplify this process by only counting every second step. Obviously, if you are running, you will take fewer steps than if you are walking. Rough ground, thick bush or uphill slopes will also increase the number of steps required to cover 100 metres so it is best to practice in a variety of terrain to determine your pace count in each situation.

REQUIREMENT 13: Show how to find the direction of travel (setting a compass bearing)

This is best done if the map is folded about 5cm parallel to the line of the direction of travel you wish to take between two controls.

1. Place the edge of the compass along the line of travel on the map.
2. Hold the map and compass in front of you at waist height, parallel to the ground.
3. Swivel the compass housing until the red lines are parallel with the magnetic north lines on the map.
4. Turn your body around until the magnetic north needle and lines are also parallel. You should now be facing your intended direction of travel.
5. Look ahead and sight an object along this direction of travel eg. Prominent tree, termite mound that will help keep you going in the right direction. Repeat this process, until reaching your destination.

REQUIREMENT 14: Complete each of the following courses at least once:

a. **Blue (Very Easy) Course.**
b. **Green (Easy) Course.**
c. **Orange (Moderate) Course**
d. **Scored Event.**
e. **Night Course.**
   Note: Those who like a challenge and who wish to improve their Orienteering skills are encouraged to do a Red (Hard) Course. This is not required for this level of Orienteering.

Please refer to Workbook

REQUIREMENT15: Prepare a 'Room Orienteering Map' and run an event based on this map.

Draw a 'map' of a room. The map is to show items of furniture, have a description list and a legend. Show a course containing several Controls. Participants are to follow the course you have developed.

Orienteering 1 Honour: Trainer's Notes

ADDITIONAL INFORMATION

Internet

International Specification for Control Descriptions (INTERNATIONAL ORIENTEERING FEDERATION 2004)
http://orienteering.org/wp-content/uploads/2010/12/Control-Descriptions-2004-symbols-only1.pdf

Overview of Orienteering: http://en.wikipedia.org/wiki/Orienteering

Orienteering Australia: http://www.orienteering.asn.au/home/

Introduction to Orienteering: http://www.orienteering.asn.au/newcomers/

Orienteering Equipment: http://www.topendsports.com/sport/orienteering/equipment.htm

Orienteering Equipment: http://www.osoa.com.au/shop/

YouTube

Orienteering for Beginners (Kids edition): http://www.youtube.com/watch?v=OZOl9kKuA4I
This is quite entertaining as a young boy describes the basics of Orienteering. His brother, who is even younger, demonstrates the concepts. They use electronic controls; however the basics are the same as taught in this honour. It's well worth viewing.

Basic instructions on Orienteering '*Your first Orienteering Event'*
http://www.youtube.com/watch?v=YkGT0VuhTIw