



National Defence
Defense Nationale

REGIONAL CADET INSTRUCTOR SCHOOL CENTRAL



ORIENTEERING INSTRUCTOR COURSE

STUDENT REFERENCE MANUAL

OPI: Training Officer 2
RCIS Central

Canada 

2013-07-03

REGIONAL CADET INSTRUCTOR SCHOOL (CENTRAL)

ORIENTEERING COURSE

FOREWORD

July 2013

1. The Orienteering Instructor Course Student Reference Manual is produced to provide reference material for course candidates, which may be retained at the end of the course.
2. This Precis was prepared from extracts of publications both military and civilian.
3. Recommendations for amendments to this training document should be directed to the Training Officer 2, Regional Cadet Instructor School (Central), CFB Borden, L0M 1C0.

K.A. O'Leary
Major
Commandant
RCIS (C)

Regional Cadet Instructor School (Central)
ORIENTEERING INSTRUCTOR COURSE (OIC)

Course Outline

PO/EO	Name of Lesson
PO 101	APPLY ORIENTEERING TECHNIQUES DURING AN ORIENTEERING ACTIVITY
101.01	Describe an Orienteering Event
101.02	Interpret Map Details on an Orienteering Map
101.03	Apply Compass Skills
101.04	Employ Route Choice
PO 102	CONDUCT AN ORIENTEERING ACTIVITY
102.01	Describe Safety Considerations For Orienteering Activities
102.02	Plan an Orienteering Course
102.03	Organize an Orienteering Activity



PO 101

***APPLY ORIENTEERING TECHNIQUES
DURING AN ORIENTEERING ACTIVITY***

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CADET INSTRUCTORS CADRE ORIENTEERING INSTRUCTOR COURSE



EO 101.01 – DESCRIBE AN ORIENTEERING EVENT

THE HISTORY OF THE SPORT OF ORIENTEERING

Orienteering was originally developed in Sweden near the end of the 19th century (1886) as a military test of skill in crossing unknown terrain with the aid of a map and compass. Orienteering rapidly evolved from a military training exercise into a competition for military officers and then eventually for civilians. The first known public orienteering competition was held in Norway in 1897. It is generally accepted that this event is considered to be the birth of orienteering. As a sport in its own right, orienteering started to develop in the Nordic countries at the beginning of the 20th century (1919). Regional and national events were held on a regular basis and the first international competition, between teams from Norway and Sweden, was held in Norway in 1932. During the 1930s, the sport grew in popularity and spread across Scandinavia and Europe. In 1959, an international orienteering conference was held in Sweden. Delegates from 12 countries participated. In 1975 the first orienteering championship took place.

Orienteering in Canada

The first organized competitive orienteering events in Canada were held in 1948 in High Park in Toronto, Ontario and near Montreal, Quebec but it wasn't until the 1960s that the sport became popular. In 1961 the Canadian Legion started organizing annual track and field coaching clinics at the University of Guelph. Internationally acclaimed coaches were brought over to instruct and in 1965 orienteering was introduced as an optional activity. By 1969, orienteering was so popular that it became one of the areas of concentration. It is interesting to note that Bjorn Kjellstrom, one of several co-inventors of the Silva compass, arranged orienteering events as part of his promotional work for the North American division of Silva. Sass Peepre in Ontario and Harald Wibye, a Norwegian visitor to Quebec were both instrumental in promoting the sport of orienteering in Canada by preparing maps and organizing events. The first Canadian Championships were held on 10 August 1968 in Gatineau Park. Orienteering is now a popular competitive sport across the country. The North American Championships were introduced in 1970 and Canada has been participating in the World Orienteering Championships since the early 1970s.

The Role of the International Orienteering Federation (IOF)

The International Orienteering Federation (IOF) was founded on 21 May 1961 at a Congress held in Copenhagen, Denmark. The 10 founding members were Bulgaria, Czechoslovakia, Denmark, DDR, Finland, Hungary, Norway, Sweden, Switzerland, and West Germany. The IOF based in Finland, is the international body governing the sport of orienteering. The IOF governs four orienteering disciplines: foot orienteering, mountain bike orienteering, ski orienteering, and trail orienteering. The IOF aims to spread the sport of orienteering, promote its development and create / maintain an attractive world event programme. Their vision is that orienteering be recognized as a truly global sport, attractive to all, having presence and credibility on the world sporting stage. In 1977, the IOF

was recognized by the International Olympic Committee (IOC) but orienteering is yet to be included as an event in either the Summer or Winter Olympic Games.

The IOF is currently comprised of 72 national orienteering federations, including the Canadian Orienteering Federation (COF). Interest and development of the sport has seen recent rapid growth particularly in Asia, South and Central America, and Africa.

The Role of the Canadian Orienteering Federation (COF)

The Canadian Orienteering Federation (COF) was founded and incorporated on 1 December 1967. The Ontario, Nova Scotia and Quebec orienteering associations were founding members. The remaining provinces / territories joined from 1971 onwards. The COF is the national governing body for the sport of orienteering and is recognized by the International Orienteering Federation, which it joined in 1968. The COF is responsible for the development of orienteering in Canada, including Canada's participation at the World and Junior World Orienteering Championships.

ORIENTEERING EQUIPMENT

Individual Equipment

The basic equipment required for orienteering is a map, a compass and appropriate outdoor clothing. The International Orienteering Federation (IOF) specification for clothing is delegated to the national organizing body and some governing bodies require full body cover requiring the torso and legs to be covered. Depending on the terrain to be covered, shorts may be worn. Purpose-made lightweight nylon full-body suits are commercially available and are generally multi-coloured for visibility reasons. Some competitors prefer Lycra tights or leggings. Gaiters are also often worn to protect the legs from branches / insects. IOF rules forbid the use of artificial aids such as Global Positioning Systems (GPS) and other electronic navigational devices.

Basic orienteering equipment may include:

- thumb compass, or base plate compass on a short wrist cord.
- clear map case to protect the map.
- IOF Symbols.
- description Sheets of the course.
- a whistle to attract attention in case of injury.
- light, strong shoes with non-slip soles are required to allow a good grip on all types of ground.
- a map which shows the course with all the control points that must be visited.
- sunscreen, hat, water bottle, bug spray.
- watch / timer.

Group Equipment

Orienteering activities require very little in the way of group equipment. Orienteering equipment may be available through your local support unit but if this is not the case, an orienteering activity can be still organized using everyday items such as milk cartons as substitutes for markers, different colored crayons instead of punches, and pieces of paper with boxes drawn on them instead of control cards. Group equipment includes:

Control Cards - Control cards are given out to each participant at the start of an event along with the orienteering map. The control card is marked by some means at each control point to show that the

participant has completed the course correctly and visited all the control points in the right order. At each control point, there will be either an electronic device or a manual hole punch device to mark the control card.

Orienteering Card punches- Orienteering card punches are located at each control point and are used by the participant to mark the control card and indicate that they have located the control. Punches come in various forms and can include:

- crayons,
- rubber stamps,
- manual ticket punches in various shapes,
- needle punches, and
- electronic punching systems.

Orienteering Control Markers - Orienteering control markers are three sided orange and white markers that identify the course control point locations. Control points are indicated on orienteering maps by a circle and number.

Sportident System - Sportident is an electronic card punching system designed in 1997 specifically for the sport of orienteering. The Sportident system consists of two main parts: the SI-card (the transponder) and the SI-station (the reader). The system is used in more than 35 countries around the world. It can be used for smaller events without a computer as well as on the world's largest orienteering competition with over 15,000 starts and a huge computer network.

TYPES OF ORIENTEERING ACTIVITIES

There are many different types of orienteering activities that cadets can participate in. Some of the most common types are:

Classic Orienteering

Classic orienteering involves a race between controls in a preset order. The winner is the person who completes the course in the shortest time. Courses are normally designed so that the fastest route is not straightforward to find on the map, or to follow on the ground.

Score Orienteering

Participants try to find as many controls as possible in a given amount of time. Controls usually have different point values depending upon distance from the start and the difficulty of navigation required to find them. The area chosen for this type of competition is dotted with a large number of control points, care being taken to ensure that there are more controls sites than can possibly be visited by any one person or team in the allotted time. The near controls carry a low point value, points at a greater distance and more difficult to find carry correspondingly higher point values. There are a number of ways in which this competition can be run. Pair work is a method by which teams can work in groups and decide which members of the team should be sent to find which controls. Another method is to work together as a team to find each control. The competitor(s) must decide on a strategy in order to gather as many points as possible in the allotted time. One method is to work one's way out to the high point controls as rapidly as possible, perhaps picking up a few low value controls in the process and picking a route in which a few more lower point controls can be picked up on the return. A penalty system must be devised to take into account those team members or individuals that exceed the allotted time (eg, deduct one point for every ten seconds late.)

Relay Orienteering

This is the most popular team competition. Relays usually employ a mass start instead of a staggered start. The number of legs in the relay depends on the number of persons on a team. All the rules and regulations concerning classic orienteering apply to relay orienteering except that a competitor may run only one loop. The first member of the team will run with a map with only one loop on it. Upon finishing this loop, the next competitor on the team will start, and so on until the last person finishes. The result is based on the team's total time. The simplest way for the organizer is to arrange the course in a clover leaf pattern, with each loop begun from a common start area. To reduce competitors following each other, parallel courses are provided.

Memory Orienteering

This type of orienteering is comprised of short legs in which the participant sees a portion of the map at each marker. The participant must simplify and memorize the route and details of each portion of the map in order to navigate to the next marker.

Street Orienteering

Street orienteering is an urban version of orienteering. As with other forms of orienteering, participants are given a map and a score card. The competitors must find a given number of locations and mark their card before returning to the start / finish point. The competitor to return to the start with the most marks is the winner.

ROGAINE Orienteering (Rugged Outdoor Group Activity Involving Navigation and Endurance)

Rogaine is a long distance orienteering sport that originated in Australia. The first Rogaine event to be held outside Australia was held in Canada in 1986. Teams of 2 – 5 people travel by foot (walking / running) navigating by map and compass from one control point to another. Each team determines their route and which controls to locate within the set period of time with the intent of maximizing their score. The event can be as short as 2 hours or last up to 24 hours. Teamwork, endurance, strategy and map reading are key features of the sport. Teams travel at their own pace which makes this type of orienteering accessible to wide variety of participants. In 24-hour events, participants choose when to rest, eat or sleep; many run throughout the night. The event centre (hash house) usually provides hot meals throughout the night and teams may return at any time to eat, rest or enjoy the social camaraderie at this central base. The International Rogaining Federation was established in 1989 and is responsible for Standards and Rules.

RULES OF ORIENTEERING

From its inception, orienteering has been activity that has revolved around the principles of fair play and good sportsmanship. To that end, the rules that govern the sport of orienteering are intended to ensure the fair and safe participation by all orienteers. These rules and the ethics of orienteering also work as a tool to help mitigate risk at an orienteering activity, and as such, should be taught to both participants and officials prior any orienteering activity.

Safety Rules

The safety rules that are to be followed by all orienteers are:

- Full body clothing shall be worn,
- A whistle must be carried during an activity,
- Participants should be familiar with the International Distress Signal (3 blasts on a whistle),

- Reporting to the finish official and hand in their map and control card whether they complete the course or not,
- Injured persons they encounter during the activity must be assisted,
- When crossing roads or railway lines traffic rules must be observed, and
- Organizers shall provide a safety bearing (see TP 5 for safety bearing) information.

Competition Rules

The competition rules that must be followed by all participants include:

- Controls shall not be damaged, removed or hidden during the event,
- Only the map provided by the organizer and a compass shall be used during an activity,
- Controls shall be visited in the specified order in a cross-country (line course) activity, and
- Not entering / crossing areas marked on the map as uncrossable or out of bounds.

Orienteering Ethics

The ethical guidelines to be followed by orienteers include;

- Participants shall not follow other participants,
- Not discussing the course with other participants while on the course,
- Participants who ask for assistance shall be shown their location on the map and then be reported to an official at the finish,
- After completion of their course, participants shall not divulge information about the course, map or terrain to other participants,
- Safety issues encountered while on course shall be identified as soon as possible to an official, and
- Environmental stewardship shall be applied at all times.

By following the rules and ethics above, the orienteers and officials will be active participants in the risk management of an activity.

COMPARE ORIENTEERING MAPS TO OTHER TYPES OF COMMONLY FOUND MAPS

There are many different types of maps available which have been specifically designed to suit a variety of purposes.

Road Maps

Road maps are designed to cover large areas and identify roads and highways to assist commuters and tourists in to planning a route from one location to another. They identify key sites such as police stations, fire halls, hospitals, schools, parks and more. Typically, road maps do not provide topographical information as drivers do not need this information to be able to navigate from one location to another.

Topographical Maps

Topographical maps are commonly used by the military. The purpose of a topographical map is to present an accurate picture of the ground and show as much detail as the scale will allow. Topographical maps display both natural and man-made physical features of the ground. Natural features include rivers, woods and hills with the heights and shape. Man-made features include roads, railways, bridges, town, villages, buildings etc. The names of specific features such as towns, villages, rivers and descriptive names of general features such as railways and post offices are also indicated on topographical maps.

Orienteering Maps

Orienteering maps are much more detailed than regular topographical maps both in reference to natural and man-made features. They show enough detail and topographical information for the orienteer to successfully navigate a course. Maps used for orienteering became standardized for competition so that they would be easily read and understood by the competitors even if they were from out of country. The IOF has developed specific rules and standards for the production of orienteering maps, including the colours, symbols and scales. The standardization of orienteering maps greatly contributed to the international popularity of the sport of orienteering. Orienteering maps have also been referred to as recreational maps due to their use in other recreational activities such as hunting, hiking and backpacking.

Map Scale

Maps are drawn to reflect a specific scale. The scale of a map can be defined as the ratio of the distance between points on the map in relation to the actual distance between the corresponding points on the ground. Maps scales were developed so that it was easy to measure distances on the map using ordinary rulers. The most common scale for topographical maps in Canada is 1:250,000

Orienteering maps have been standardized internationally by the IOF to a scale of 1:15,000. Maps covering small areas or that are used for instructional purposes use a larger map scale of 1:5,000 or 1:10,000. 1:5,000 scale maps are most commonly used for orienteering as these show much more detail and are easily understood by beginners.

The scale of a map (eg, 1:15,000) is shown prominently at the top of the map, and also in the bottom margin, usually above the graphics scales. The graphic scales are placed in the centre of the bottom margin.

SCALE 1 : 15000

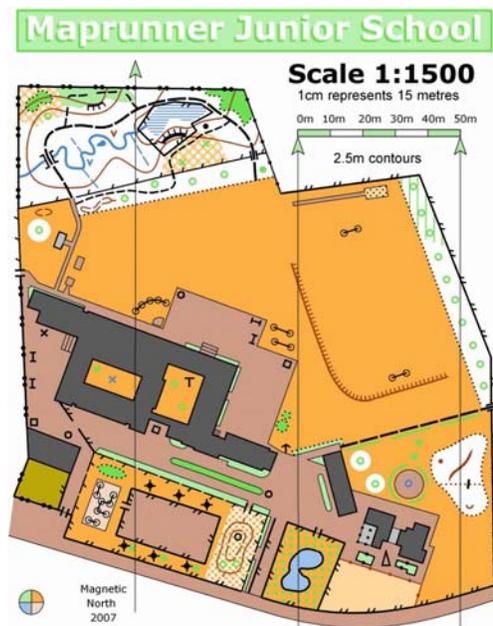
Note. www.clubs.cecs.ucf.edu

Calculating Distance

Depending on the type of map being used, the related map scale will likely be printed. Map scales are prominently located in the bottom margin of each topographical map. Scale information on orienteering maps is usually located at the edge / border. Scale bars are located under the map scale and are used to help measure distances on the map.



SEE THE SAMPLE OF A MAP SCALE ON THE ORIENTEERING MAP BELOW:



Note. www.maprunner.co.uk

To calculate distance using the bar scale from the map:

1. Find and note the scale information on your map.
2. Locate two points on the map between which you want to calculate the distance.
3. Take a piece of paper and mark along the edge (the distance between two points that you want to measure the actual distance).

4. Compare the markings on the piece of paper to the bar scale in order to calculate the distance.
5. Alternatively, the bar scale can be copied along the edge of a piece of paper to create a ruler and then used to measure distances on the map.

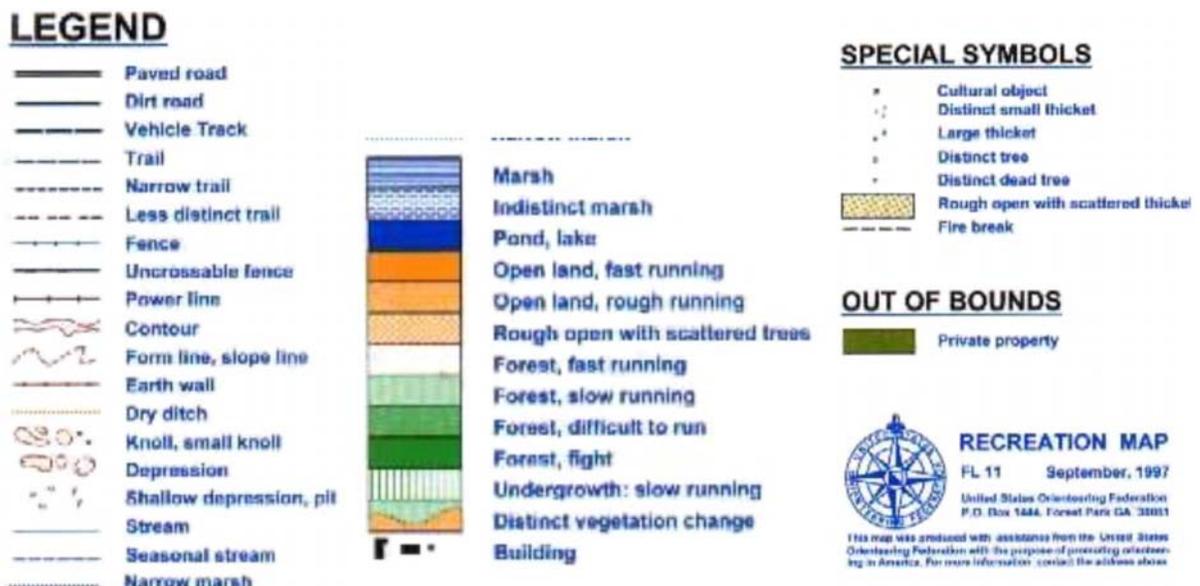
A piece of string can also be used to measure distances on a map:

1. Place one end of the string at the start point and lay out the string along the intended route.
2. Mark the string at the point where the route ends.
3. Straighten out the string, and use a ruler or scale bars to convert the string length to measure the distance on the map.

HOW TO INTERPRET THE COLOURS ON AN ORIENTEERING MAP

Map Legend

The quality of a map's design affects the user's ability to extract information and to learn from the map. Most orienteering maps provide a detailed map legend to help the user understand the standardized symbols which describe the terrain.



Note: www.engr.ucf.edu

IOF Standardized Colours

The IOF has standardized the colours that are used on orienteering maps as follows:

- **Brown:** Land forms / elevation features (contour lines, contour elevation, sand, cliffs),
- **Black:** Man-made features (churches, schools, buildings, bridges, railway tracks, trails),
- **Blue:** Water and marsh (rivers, lakes, swamps, streams),
- **Yellow:** Open and semi-open areas with good visibility (fields, meadows),
- **White:** Open runnable forest (orienteering maps),

- **Green:** Vegetation (woods, scrub, bushes, orchards, vineyards), and
- **Violet:** Course overprinting and out-of-bounds areas.

MAP SYMBOLS

To show landscape details on a map, various symbols are used to identify roads, buildings, man-made and natural features. These symbols are simplified representations of map features. The IOF standardized the symbols so that they are recognizable and universal to orienteering competitions around the world.

The symbols are divided into four groups as follows:

- Landforms (elevation features, hills, valleys, rock features)

	Contour		
	Index contour		
	Form line		
	Slope line		
	Contour value		
	Earth bank		
	Earth wall		
	Small earth wall		
	Erosion gully		Impassable cliff
	Small erosion gully		Rock pillars/cliffs
	Knoll		Passable rock face
	Small knoll		Rocky pit
	Elongated knoll		Cave
	Depression		Boulder
	Small depression		Large boulder
	Pit		Boulder field
	Broken ground		Boulder cluster
	Special land form feature		Stony ground
			Open sandy ground
			Bare rock

- Man-made features (roads, trails, houses, building, railways, power lines, dams, bridges)

	Motorway		Stone wall
	Major road		Ruined stone wall
	Minor road		High stone wall
	Road		Fence
	Vehicle track		Ruined fence
	Footpath		High fence
	Small path		Crossing point
	Less distinct small path		Building
	Narrow ride		Settlement
	Visible path junction		Permanently out of bounds
	Indistinct junction		Paved area
	Footbridge		Ruin
	Crossing point with bridge		Firing range
	Crossing point without bridge		Grave
	Railway		Crossable pipeline
	Power line		Uncrossable pipeline
	Major power line		High tower
	Tunnel		Small tower
			Cairn
			Fodder rack
			Special man-made feature

Note. www.maprunner.co.uk

- Water features (rivers, canals lakes, oceans, swamps, marshes, bodies of water)

	Lake
	Pond
	Waterhole
	Uncrossable river
	Crossable watercourse
	Crossable small watercourse
	Minor water channel
	Narrow marsh
	Uncrossable marsh
	Marsh
	Indistinct marsh
	Well
	Spring
	Special water feature

Note. www.maprunner.co.uk

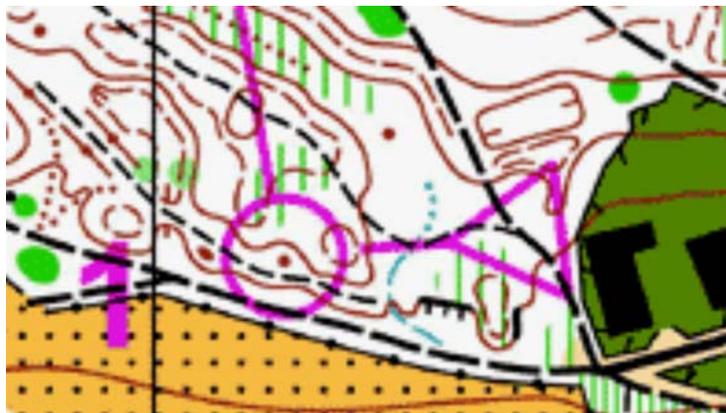
- Vegetation (wooded areas, orchards, vineyards, scrub)

	Open land
	Open land with scattered trees
	Rough open land
	Rough open land with scattered trees
	Forest: easy running
	Forest: slow running
	Undergrowth: slow running
	Forest: difficult to run
	Undergrowth: difficult to run
	Vegetation: very difficult to run, impassable
	Forest runnable in one direction
	Orchard
	Vineyard
	Distinct cultivation boundary
	Cultivated land
	Distinct vegetation boundary
	Indistinct vegetation boundary
	Special vegetation feature

IOF Control Symbols

The IOF has standardized the colour and control symbols for orienteering maps as follows:

- Dispatch (start) areas are represented by a red triangle and point towards the first control point.

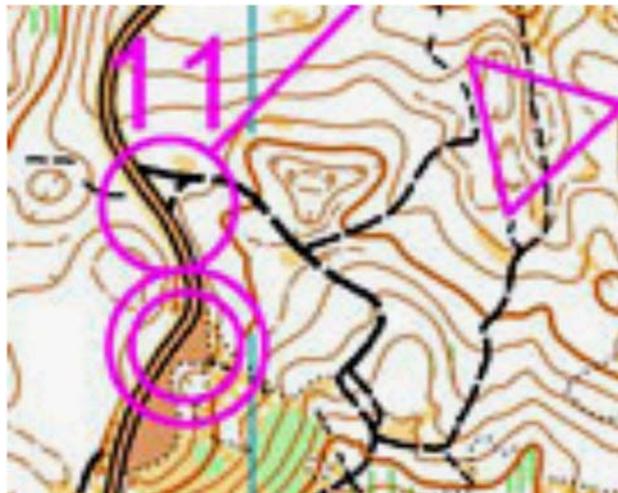


www.yukonorienteering.ca

- Control points are represented by a red circle and are numbered. The numbers are printed oriented towards magnetic north.



- Finish areas are represented by a double red circle and are usually located near the dispatch (start) area.



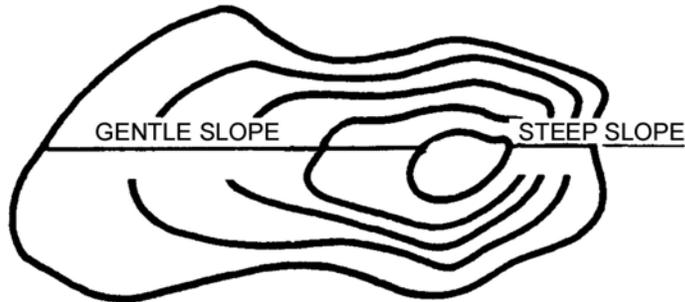
CONTOUR LINES

Contour lines are imaginary lines on the ground along which all points are at the same height above sea level. Contour lines help to illustrate shapes and forms on the ground, indicate changes in elevation and give a picture of the terrain to the map user. Contour lines that are close together indicate a steep slope in the terrain and conversely, contour lines that are far apart indicate a gentle slope in the terrain. Contours are normally drawn as continuous brown lines. Every fourth or fifth contour is called an "Index Contour" and is shown by a thicker brown line; this helps in reading and counting the contours to determine a height. Index contour lines are interrupted by a number that indicates the elevation above sea level. On orienteering maps, the contour line interval information will be indicated with the map scale and scale bar information.

Slopes

The distance between contour lines on the map will indicate the type of slope on the ground.

Steep slope - When the contour lines are spaced closely together there is less distance to travel to gain or lose elevation.



Basic Map Using A-CR-CCP-108/PT-001

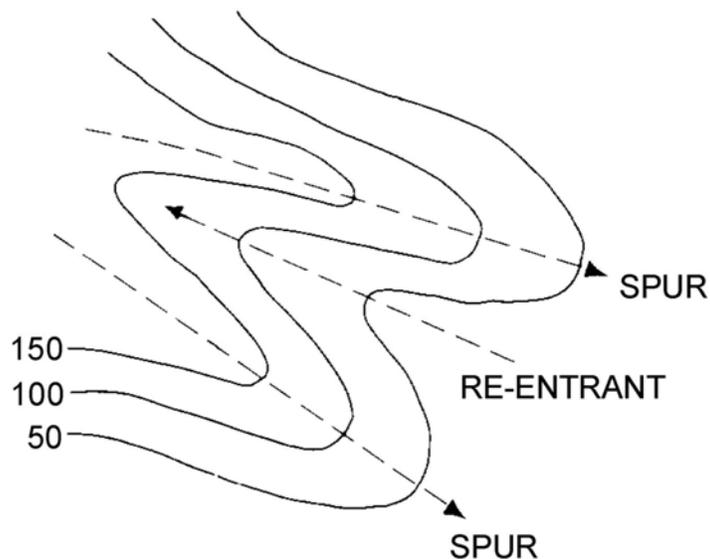
Gentle slope - When the contour lines are further apart there is a greater distance to travel to gain or lose elevation.

Uniform slope - When the contours are an equal distance apart. The slope remains constant in its decline, whether steep or gentle.

Spurs - A contour feature that extends out from a slope.

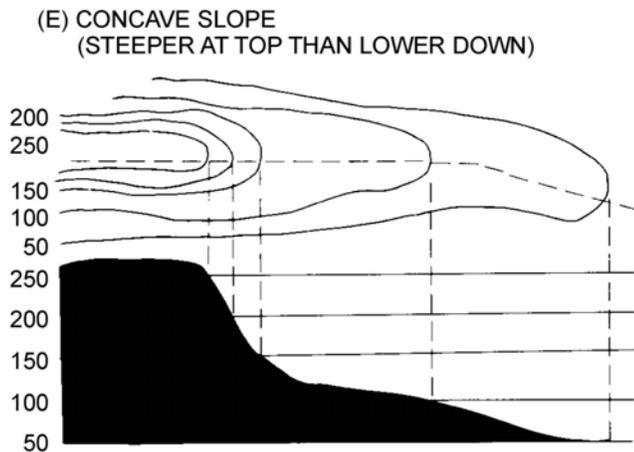
Re-entrants - A contour feature that cuts back into a slope.

(C) SPURS WITH RE-ENTRANT

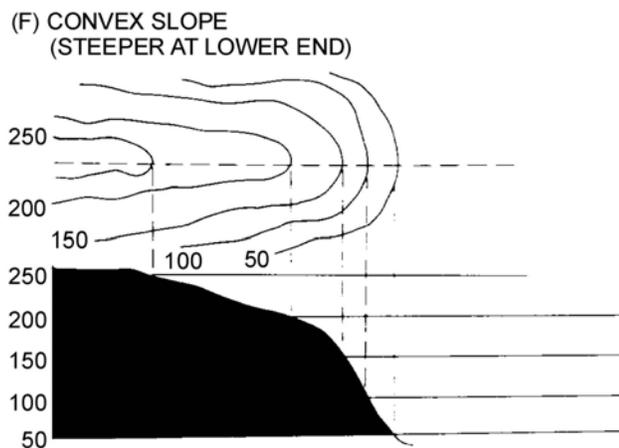


Basic Map Using A-CR-CCP-108/PT-001

Concave slope - When the spacing of the contours gets further apart at the bottom. The middle of the slope seems to depress inward – appearing concave.

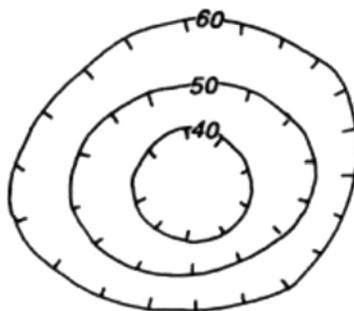


Convex slope - When the spacing of contours down a slope gets close together at the bottom. The middle of the slope seems to bulge outward – appearing convex.



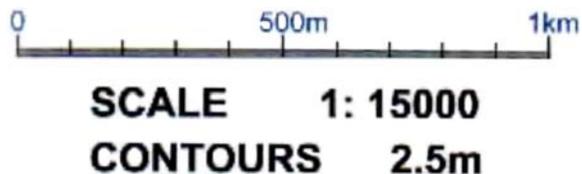
Depression Contours

Depression contours indicate a depression in the ground and appear on a map as lines with small ticks spaced evenly towards the center.



CONTOUR INTERVALS

The difference in height between contours lines is known as contour intervals. Contour intervals are shown at regular intervals and indicate the vertical distance in the terrain between points situated on two adjacent contour lines. Contour intervals are normally measured in feet on a topographical map and in meters on an orienteering map. Contour intervals can vary in distance from map to map; therefore it is important to confirm their measure as noted in the marginal information displayed on the map. The contour interval is always stated in the margin of the map, normally shown at the bottom near the graphic scales and noted as “Contour Interval Feet / Metres.”



Note. www.clubs.cecs.ucf.edu

ORIENTING A MAP

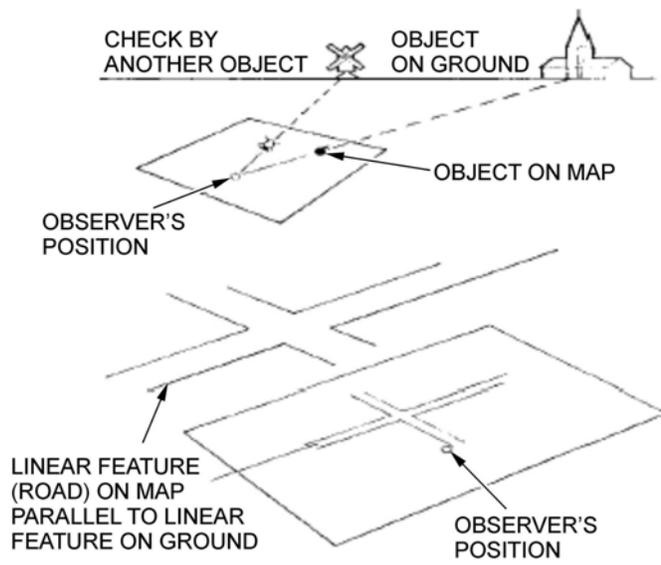
Orienting a map by terrain means to turn the map so that, visually, the map directions and map detail correspond with that which is on the ground. This is the simplest and quickest way of orienting a map, provided you have a general idea of your own position. Orienting the map does a number of things:

- it makes it easy to relate the map to the ground when direction and distance on the map corresponds to the ground;
- it helps you find your location or direction if you are in doubt; and
- when moving over a complex route, or when traveling over long distances, orienting the map will keep you on the right track.

ORIENT A MAP

In order to orient your map by terrain the following steps should be followed:

1. identify your approximate location on the map;
2. identify two or three prominent objects or landmarks on the ground and locate them on the map. Try to select landmarks in different directions;
3. rotate your map until all identified objects on the map correspond with the direction in which objects are located on the ground; and
4. check visually to ensure that all features to your front are in front of your position on the map.



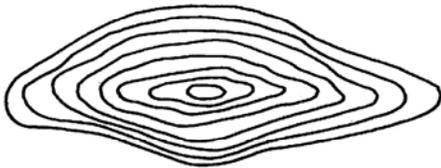
Land Environmental Training Course

ORIENTEERING INSTRUCTORS COURSE
Q1 – END OF LESSON CONFIRMATION

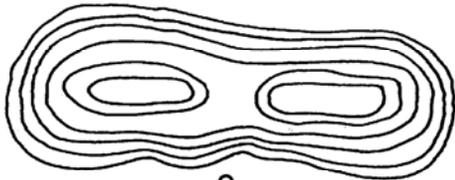
MATCH THE CONTOUR DIAGRAM ON THE LEFT TO THE APPLICABLE DEPICTION OF A LANDFORM ON THE RIGHT.



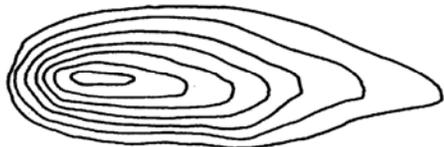
1



2



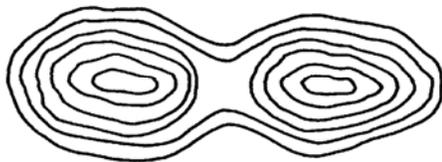
3



4



5



6



A



B



C



D



E



F

1. _____
2. _____
3. _____

4. _____
5. _____
6. _____

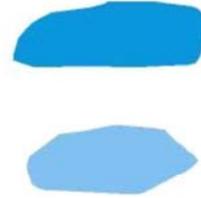
ORIENTEERING INSTRUCTORS COURSE

Q2 – END OF LESSON CONFIRMATION

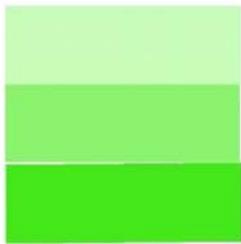
“Matching Map Symbols”



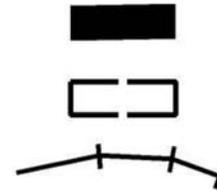
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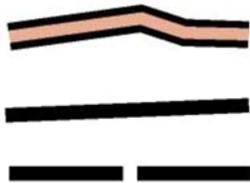
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3 = _____



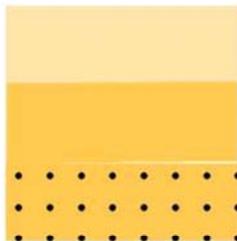
4 = _____



5 = _____



6 = _____



7 = _____



8 = _____

IOF ORIENTEERING MAP SYMBOLS

IOF Orienteering Map Symbols

Land forms

	Contour
	Index contour
	Form line
	Slope line
	Contour value
	Earth bank
	Earth wall
	Small earth wall
	Erosion gully
	Small erosion gully
	Knoll
	Small knoll
	Elongated knoll
	Depression
	Small depression
	Pit
	Broken ground
	Special land form feature

Water and marsh

	Lake
	Pond
	Waterhole
	Uncrossable river
	Crossable watercourse
	Crossable small watercourse
	Minor water channel
	Narrow marsh
	Uncrossable marsh
	Marsh
	Indistinct marsh
	Well
	Spring
	Special water feature

Rock and boulders

	Impassable cliff
	Rock pillars/cliffs
	Passable rock face
	Rocky pit
	Cave
	Boulder
	Large boulder
	Boulder field
	Boulder cluster
	Stony ground
	Open sandy ground
	Bare rock

Man-made features

	Motorway
	Major road
	Minor road
	Road
	Vehicle track
	Footpath
	Small path
	Less distinct small path
	Narrow ride
	Visible path junction
	Indistinct junction
	Footbridge
	Crossing point with bridge
	Crossing point without bridge
	Railway
	Power line
	Major power line
	Tunnel
	Stone wall
	Ruined stone wall
	High stone wall
	Fence
	Ruined fence
	High fence
	Crossing point
	Building
	Settlement
	Permanently out of bounds
	Paved area
	Ruin
	Firing range
	Grave
	Crossable pipeline
	Uncrossable pipeline
	High tower
	Small tower
	Cairn
	Fodder rack
	Special man-made feature

Technical symbols

	Magnetic north line
	Registration marks
	Spot height

Vegetation

	Open land
	Open land with scattered trees
	Rough open land
	Rough open land with scattered trees
	Forest: easy running
	Forest: slow running
	Undergrowth: slow running
	Forest: difficult to run
	Undergrowth: difficult to run
	Vegetation: very difficult to run, impassable
	Forest runnable in one direction
	Orchard
	Vineyard
	Distinct cultivation boundary
	Cultivated land
	Distinct vegetation boundary
	Indistinct vegetation boundary
	Special vegetation feature

Overprinting symbols

	Start
	Control point
	Control number
	Line
	Marked route
	Finish
	Uncrossable boundary
	Crossing point
	Out-of-bounds area
	Dangerous area
	Forbidden route
	First aid point
	Refreshment point

© Simon Errington 2007.
Copies of these map symbols and of the IOF pictorial control descriptions can be downloaded from www.maprunner.co.uk
The full ISOM 2000 specification is available from www.orienteering.org

METHODS OF JUDGING DISTANCE

Direction and distance must be known to ensure accurate navigation. The map and compass provide the orienteer with an accurate idea of direction. The combination of the map's detail and its scale, plus the orienteer's ability to check-off features will provide a good indication of distance. Occasionally situations will arise where there are few or no usable features for an orienteer to check-off as an indication of distance travelled. In these cases some sort of distance judging technique must be used. There are three main types of distance judging that an orienteer can use:

- Pace counting.
- Comparison method.
- Distance estimation.

Pace Counting.

The easiest, most practical method is to count single or double paces. An orienteer should test their counted paces over a variety of different terrains and conditions. The typical test distance is 100 meters which is the length of a football field.



Factors affecting pacing can include:

- walking uphill – you take shorter paces;
- walking downhill – you take larger paces;
- type of terrain – mud and thick brush will shorten paces;
- weather – heavy rain or snow will cause shorter paces; and
- fatigue – a tired orienteer will take shorter paces.

When presented with a navigation problem or leg that requires pace counting, the orienteer will use the map's scale, measure the distance on the map and then calculate the number of paces required to cover the distance.

Comparison Method.

In certain situations it is unnecessary to calculate the number of paces ahead of time. An alternative is to break the leg into two or more equal sections and count the paces for 1 section then repeat that count for the additional sections. This method works well when the orienteer can identify a feature such as a road or vegetation change that looks to be very close to halfway between two points.

Distance Estimation.

There are several methods to assist in judging a distance. It is important to select the method that is most applicable to the situation.

- The Unit of Measure Method relies on observing and remembering a measured distance and then estimating other distances using this "unit of measure". This "unit of measure" will be used as an imaginary measuring stick placed as many times as necessary between the

person and the object in order to determine the distance between both. By saying “That object is three football fields away” – the distance was judged to be 300 m. This method can only be used when there is nothing obstructing the field of vision.

- The Bracketing Method is a very rough estimating tool. To begin, decide that the object is at least X metres away, but that it is definitely not Y metres away. To complete the estimation, take the average of the two estimates, for example if “X” is 600 m and “Y” is 1000 m, the distance is 800 m. This is definitely the fastest method to use.

Orienteering is an activity that focuses on the use of a map and compass to travel from point to point on a chosen route. Whether the orienteer elects to participate in an activity for the purpose of competition or just to be outdoors enjoying the scenery it is important that they do so at a pace that allows them to complete the activity safely.

The pace set by the orienteer will be based on a number of factors, which could include:

- the orienteer’s personal level of cardiovascular ability,
- the level of the activity,
- weather conditions,
- terrain, and
- the orienteer’s personal goal at the activity.

Orient an Orienteering Map by Compass

To orient an orienteering map by compass, the orienteer will need to follow the following steps:

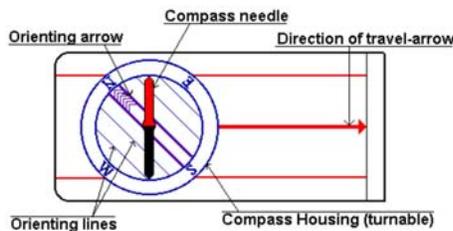
1. Place the compass on the map, with the plate arrow pointing north,
2. Hold the compass in place and rotate compass housing until the orienting lines match the magnetic north lines on the map, ensuring the north indication on the orienting lines are in fact directed north, and
3. Rotate the map until the red arrow is inside the magnetic north lines, pointing north.

The map is now being held so that it is oriented with the ground around the orienteer.

Take a Bearing using an Orienteering Compass on an Orienteering Map

The ability to take a bearing with an orienteering compass on an orienteering map is the next step in orienteering along a chosen route.

There are two types of compass that are most commonly used in orienteering, the base plate compass and the thumb compass.



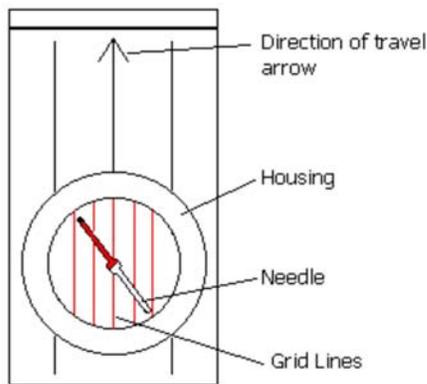
Base Plate Compass



Thumb Compass

To take a bearing:

1. Place the compass on the map.
2. Point the compass in the direction you want to travel.
3. Holding the compass in place, rotate the housing until the gridlines on the base of the housing line up with the magnetic north grid on the map.
4. Remove the compass from the map and hold it flat such that the compass needle lines up with the gridlines in the housing.
5. The direction of travel arrow will now point in the direction you should go.



Note. www.union.ic.ac.uk

Calculating Distance

Depending on the type of map being used, the related map scale will likely be printed. Map scales are prominently located in the bottom margin of each topographical map. Scale information on orienteering maps is usually located at the edge / border. Scale bars are located under the map scale and are used to help measure distances on the map.



Note. www.clubs.cecs.ucf.edu

CART System of Selecting a Route

At first glance, the details on an orienteering map can seem daunting. The use of the acronym CART will assist the orienteer in their ability to see the picture that is important to them on each leg on their route.

When picking up the map the orienteer should first look at the C in CART, this is the Control. The Control is the first (or next) point that they are required to find. Is it a rock, a hill, a re-entrant?

The next letter in CART is the A. The orienteer needs to find an Attack point. This will be something in the area which should be easily defined or noticeable. The next letter is R, this is the Route to the to the attack point. The last letter is T, this stands for technique.

CART is a systematic approach to map reading, represented by an acronym meaning:

- Control. This is the first (or next) point that the orienteer is required to find.
- Attack point. This will be something in the area which should be easily defined or noticeable such as a land form. It should be close to and before the marker, should be distinct, prominent and easy to reach.
- Route. The route is the path that will be followed to the to the attack point. What is the best route to the attack point? This will depend on the nature of the terrain, the distance to be covered, and the skills and abilities of the orienteer.
- Technique. What is the best technique to use on each leg of the competition? This will once again depend on the terrain, distance, and the individual orienteer, but must be decided before starting the leg.

Simplifying the Map

The next thing the orienteer should do is simplify the map. Many types of maps, and orienteering maps in particular, have a great deal of information that can complicate the map reading and route finding task. Map simplification allows the orienteer to focus on the larger more significant features, such as large land formations or stands of trees that will affect the route choice. Features that are not a part of the selected route can be ignored for the most part, but in some cases features that are adjacent to the selected route may be used to assist the orienteer in staying on course.

Techniques for Route Selection and Evaluation

Route selection can involve deciding between going on a path or straight through a wooded area, going over a hill straight or a longer way around on the flat, or even a choice of whether to go to the right or left of a bush.

The best choice for one orienteer may not be the best for someone else. It all depends on their level of fitness and navigational ability. Different routes may provide different attack points, one more reliable than another. In each case you will need to evaluate length, climb, runnability and ease of navigation of the route. Will the route be short and difficult or will it be long and easy? Will the risk of a more difficult attack route have the benefit of a quicker time? Tools that will assist the orienteer can include:

- Handrails. A prominent linear feature that runs more or less parallel to the direction you are planning to travel to get to the control. Examples can include paths, roads, tree lines or contours.
- Catching Features. A feature such as a road, fence or hillside that is usually just beyond the control and perpendicular to the orienteering route. It usually catches the attention of the orienteer to let them know that they have gone beyond the control.
- Checking-off Features. Refer to the process by which an orienteer notes certain features along their route, to mentally “check-off” their location on the route.
- Collecting Feature. A feature that crosses the path between the orienteer and the control that can be used to funnel the orienteer into the control.

There are three D’s that will be a constant factor in an orienteer’s route selection:

- Distance. Throughout an orienteering activity, the orienteer needs to know the distance that they need to travel; how far they have gone and how much further they have to go.
- Direction. Their direction of travel must continually be confirmed to prevent travelling too far.
- Details. They must be mindful of their and the details of the terrain and their surroundings in order to stay true to their route.

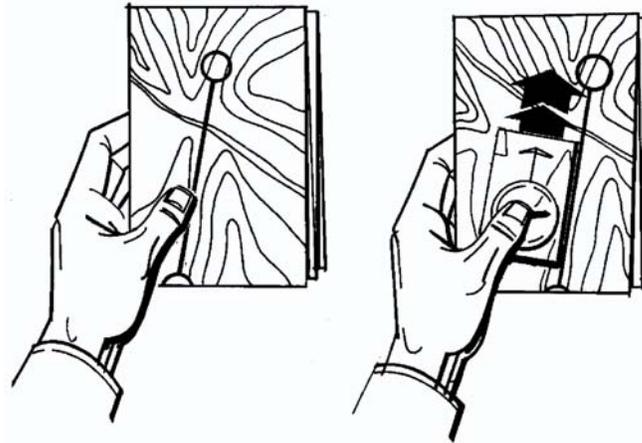
As the orienteer becomes more adept at selecting the route that best suits them, they will begin to look at their route selection in greater detail.

Folding the Map

Folding the map involves the orienteer gently folding the map once so that the route is showing, running along the direction of travel, with everything else folded out of the way. It helps the orienteer see only the information pertaining to them at the time. Holding the map depends on what kind of compass the orienteer is using and the hand the compass will be carried in.

Holding the Map

The orienteer should be holding the map properly and then place their thumb on the map to mark their position at all times. It saves time, helping to quickly determine where the orienteer is, no matter how many times they have to stop and look at their map. Two main steps involved in this process are ensuring the map is held so it is oriented to the north. The image below indicates the correct method of holding the map.



Be Expert With Map & Compass: The Complete Orienteering Handbook

Thumbing Position on the Map

This technique is very simple, but the map has to be folded small to use it. Once the map has been oriented by compass, the orienteer should place their thumb on the map to mark their position. It saves time, helping to quickly determine where the orienteer is, no matter how many times they have to stop and look at their map. Two main steps involved in this process are ensuring the map is held so it is oriented to the north. As the orienteer travels along their route, the map shall be rotated to ensure that the north arrow on the map is constantly pointed to the north.

Check-off Features

The route that is selected by an orienteer may contain a number of specific land features or map features that are used to help the orienteer identify where they are on the ground in comparison with their position on the map. A mental note can be made as these features are passed, and if the need for error recovery presents itself, these features can be used to help correct the orienteer's route. The aim of the activity is to allow the students to practice the use of:

- different types of check-off features,
- specific land features found on the map,
- aiming-off techniques,
- rough and precision map reading techniques, and
- navigation error recovery techniques.

Aiming-off

Aiming-off is one technique which orienteering draws directly from general land navigation and common map & compass skills. "Aiming off" is the technique of intentionally going to one side of the direct line in order to hit a collecting feature on the intended side, then proceeding along that feature in order to find the control or an attack point before moving on. This is used in situations where the likelihood of finding the objective by direct bearing is low and not worth the risk of missing it.

In aiming-off, the orienteer heads towards a linear feature (such as a trail, stream or stonewall), when there is a particular point (such as a boulder, cairn, or rootstock) along that feature that they want to reach. If the orienteer tries to go directly towards the boulder, and ends up at the stream, but still doesn't see the boulder, they might not know which way to turn to be able to follow the stream to

reach the boulder. But if they initially "aim-off" to the right of the boulder, then when they reach the stream they will know to turn left to follow it to the boulder. This technique is most useful when there is low visibility, the bearing is not accurate or when the orienteer feels that they will be faster, as well as safer, by being less precise but running more all out.

Rough Map Reading

Rough map reading involves moving quickly across the ground, simplifying the navigation and avoiding having to read all of the detail on the map. In this manner an orienteer navigates through the course by reading the large, easily recognizable features while excluding small details. It allows for faster running while reading the large features and noting only approximate positions from the map. This technique is used to navigate from one control, or the start point, to the attack point for the next control in terrain with distinct features. An important rule to remember is to never run further than where you know you approximately are on the map.

Precision Map Reading

Precision map reading involves moving slowly, paying more attention to the map details, and scanning the terrain for the control. A more experienced orienteer will shift from rough map reading to precision map reading as they move towards a control marker. In this manner an orienteer reads the small accurate details in the terrain, allowing them to know their exact position at all times. This technique is used primarily when navigating from the attack point to the control, in an area which is full of map detail. When precision map reading, it is important to run at a speed that permits you to know exactly where you are on the map.

Navigation Error Recovery Techniques

Recovery by Location

If an orienteer becomes lost during an activity, they can recover through a process called relocation. The steps of this process are as follows:

1. When contact is lost with the map STOP. Do not go any further without knowing the correct position on the map.
2. Orient the map with the compass.
3. RELOCATE / attempt to establish the location by looking at the oriented map and the features in the surrounding terrain.
4. If RELOCATION is not achieved, try to reconstruct where the last known location was. What route was taken after the last known location? Was it uphill, north, through a creek, how far, etc? All of this information will help to determine the current position.
5. If the current location is still not known, RETURN TO THE LAST PLACE OF KNOWN POSITION. Although this may be a difficult thing to convince an orienteering team to do, it is often the quickest solution.
6. Once the orienteer has relocated, they should read the map and continue on to the next control point. Caution should be taken when trying to make up lost time by racing hard without reading the map. In orienteering, errors often occur one after the other when people try to make up for lost time.



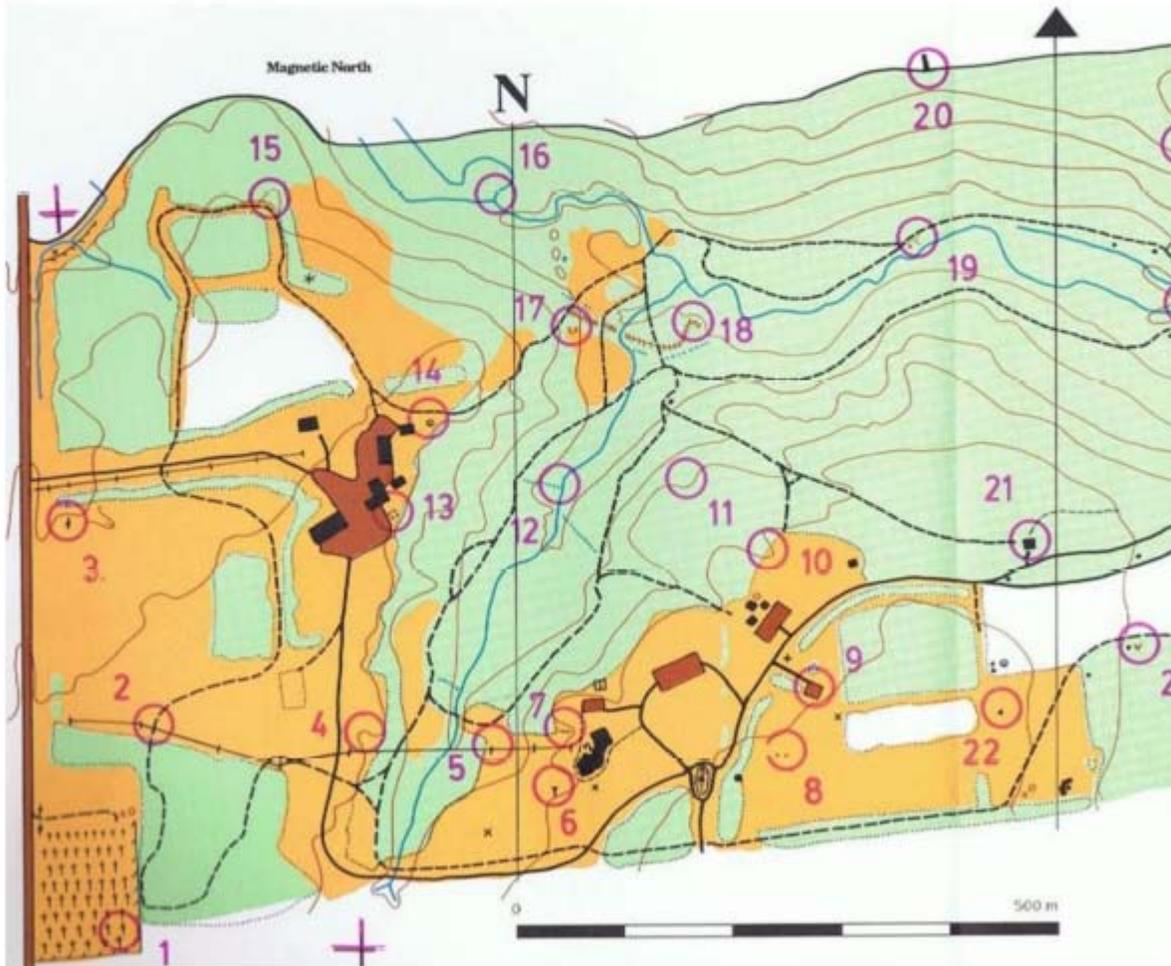
CADET INSTRUCTORS CADRE
ORIENTEERING INSTRUCTOR COURSE
INSTRUCTIONAL GUIDE

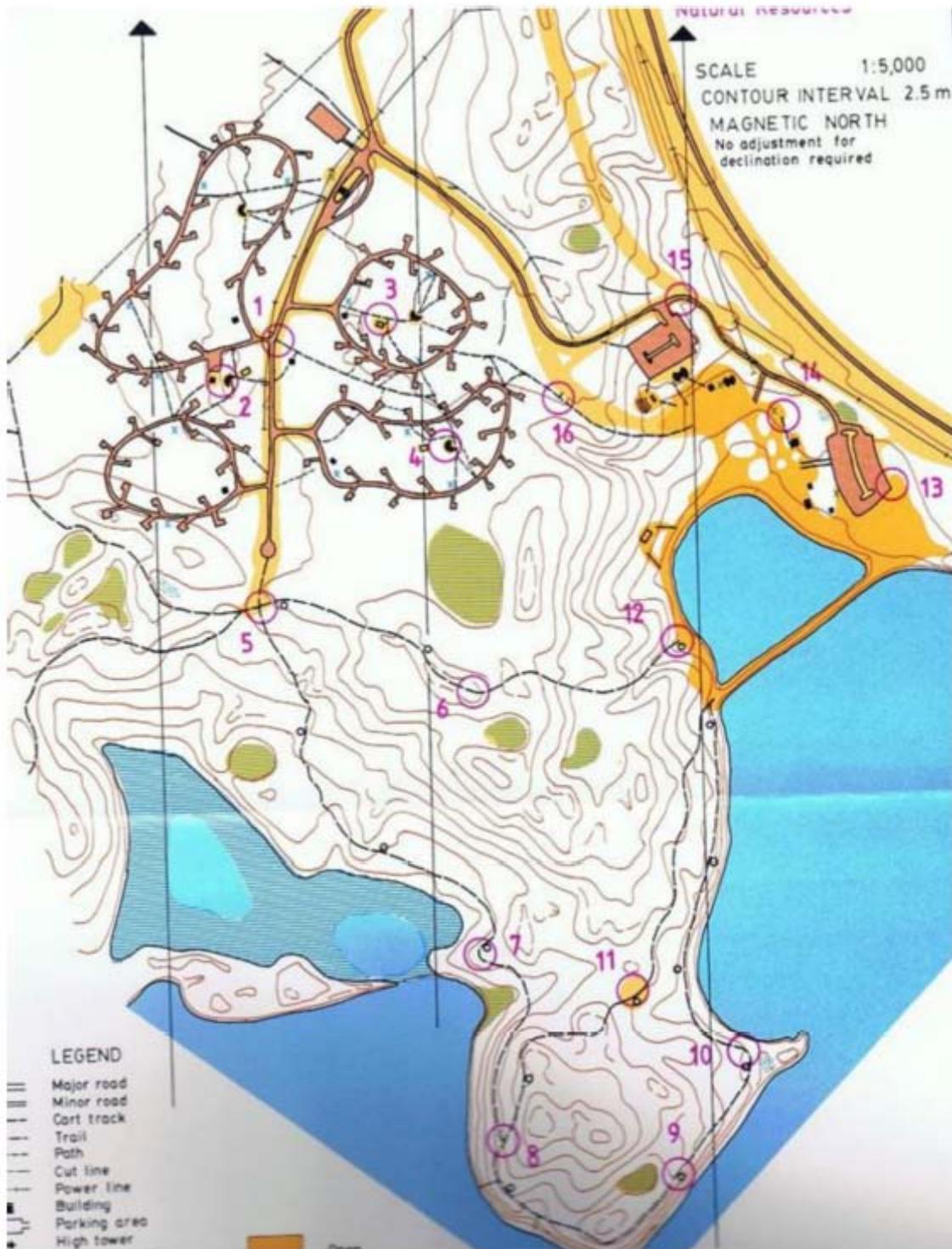


EO 101.04

USE AN ORIENTEERING MAP TO SELECT A ROUTE

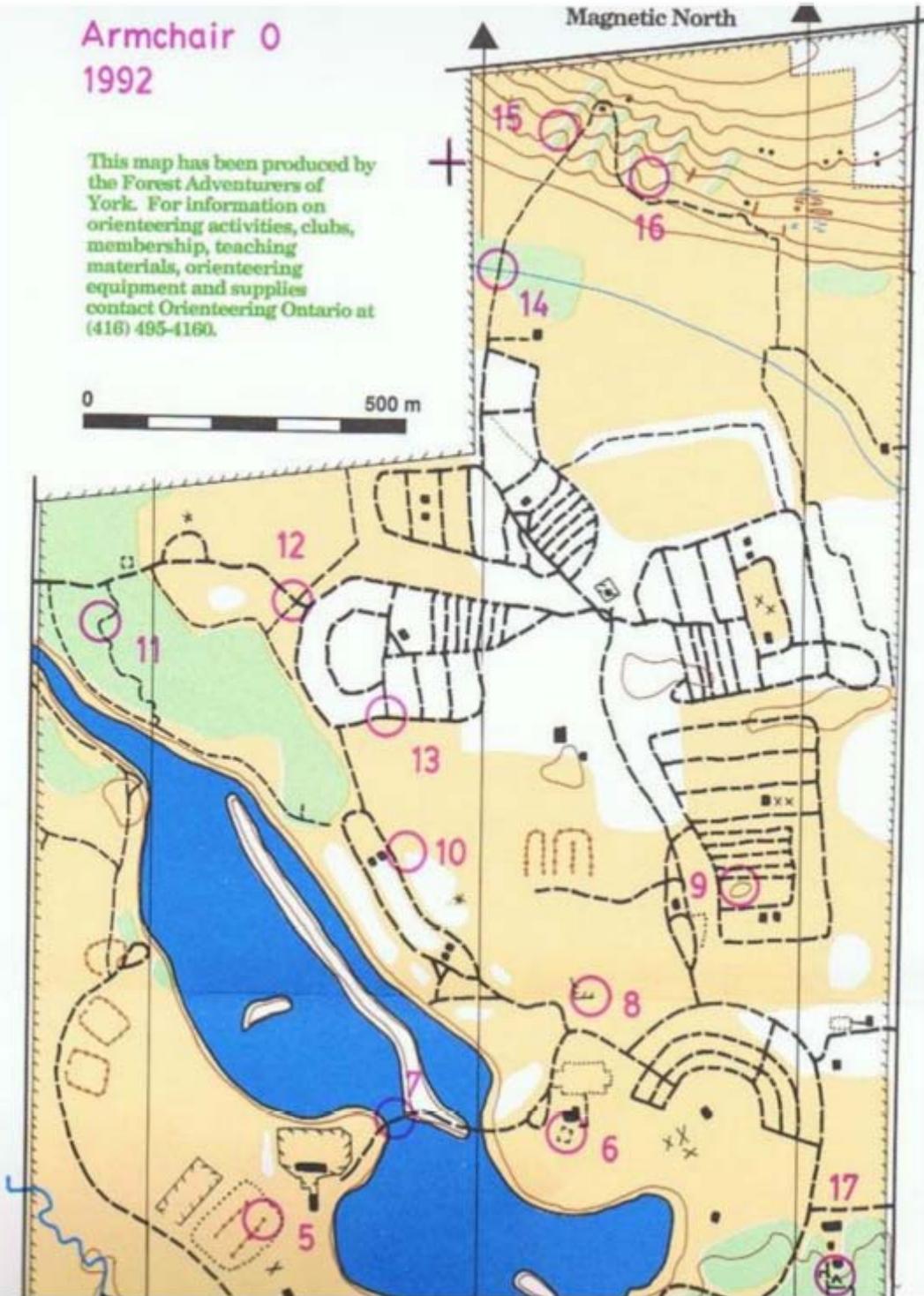
Activity Handout





Armchair 0 1992

This map has been produced by the Forest Adventurers of York. For information on orienteering activities, clubs, membership, teaching materials, orienteering equipment and supplies contact Orienteering Ontario at (416) 495-4160.





PO 102

***CONDUCT AN ORIENTEERING
ACTIVITY***

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CADET INSTRUCTORS CADRE ORIENTEERING INSTRUCTOR COURSE



EO 102.01 – DESCRIBE SAFETY CONSIDERATIONS FOR ORIENTEERING ACTIVITIES

DEFINING RISK AND HAZARD

Risk

Risk is the potential to lose or gain something. Most commonly, the term *risk* (when used in the phrase risk management) is primarily associated with loss - that a chosen action or activity, including the choice of inaction, will lead to injury, illness, death, equipment loss or another undesirable outcome (e.g. mission failure). Most simply, risk is the thing that can kill you.

“Risk management” is the identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events.

Real risk is the actual potential for a loss to happen during an activity. Risk cannot be determined with absolute certainty, but it can be estimated and successfully mitigated using risk management.

Perceived risk is the subjective estimation of the potential for an accident to happen. An individual’s perception of risk is based on: past experiences, how the media projects activities, vicarious experiences, and an individual’s predisposition to anxiety. Fearful people may over-perceive the risk, and fearless people tend to under-perceive risk. Knowledge and experience will enable individuals to be able to correctly perceive risk.

It is the risk in an activity that constitutes the excitement or “adventure.” The balancing act for leaders is to increase the amount of perceived risk, while managing the real risk at an acceptable level. Think of a roller coaster – plenty of excitement and “scare” but technically very safe. It’s not without risk; it’s just that the perceived risk far exceeds the real – a model for expedition activities.

When you are alone, you only need to consider the risk for yourself; which may be easy as you are aware of your personal knowledge, skill, and limitations. When you are in a group situation the risk factor is much more important and crucial because you need to account for the severity of the activity and the probability of risk to any and all of the group members. The choice to carry on with the activity can be influenced more so by these risks than when you are alone.

Hazard

If we understand risk as the possibility of loss – then a hazard is the instrument that causes the loss. The term “Hazard” includes different types of hazards (human and environmental), and has common synonyms like dangers and perils. For example, if hypothermia is the thing that can kill you (risk), the hazards that contribute to it may be cold water, cold air temperature, etc. Human hazards are those derived from human errors, omissions and decisions. Environmental hazards are naturally occurring

obstacles, environments, and features. Hazards are most often single, identifiable, tangible objects of factors – however they can act in combination with each other.

Examples of hazards and the harm they cause are: a knife can cut you, a branch can poke you in the eye, a muddy hill can cause you to slip and fall, etc.

STANDARD OF CARE

The standard of care is what the leader ought to do in a given situation. It is an obligation to exercise the same level of care that a reasonable person with similar abilities, skills and experience would in a similar circumstance. The standard to which a person is expected to perform changes over time; in line with qualifications, education and experience. As adults, we are all credited with the same general intelligence and sensibility, and thus the law expects each of us to behave in a reasonable fashion when confronted with similar circumstances.

Reasonable Person and Careful Parent

As youth leaders in the CAF, all CIC Officers are obligated to act to the standard of a reasonable person and careful parent.

Prudent Professional

Expedition Leaders, Expedition Team Leaders and specialist instructors (e.g. Orienteering Instructors) are obligated to act to the standard of a prudent professional – in this case professionals from both the CAF (other officers of similar rank, qualification, and experience) as well as civilian service providers with similar qualifications, certifications and experience.

Expectations and obligations of CIC leaders:

- a. to act cautiously (in a safety-conscious manner) and to try to anticipate the consequences of their decisions and actions.
- b. to foresee potential risks inherent in a situation, and to take reasonable steps to manage those risks.
- c. to carry out all the duties and responsibilities of a CAF member – for example, members are expected to maintain and update their skills, qualifications and professional body of knowledge.



According to the Royal Canadian Army Cadets Adventure Training Safety Standards, the instructor to cadet ratio for an orienteering activity should be 1:10

RISKS ASSOCIATED WITH ORIENTEERING ACTIVITIES

Risks are primarily the things that can kill a person or cause serious damage. Being able to identify the risks will enable the orienteering instructor to devise a solution during the planning stages to help to mitigate the risk or prepare to deal with the risk.

Example orienteering risks – not intended to be an inclusive list

1. **Head, neck and spine injuries** – trips and falls are common during orienteering activities, and the risk of head, neck and spinal injuries is elevated. Due to the somewhat remote locations of many orienteering activities, evacuation or medical assistance is often problematic – e.g. emergency medical technicians may be delayed in finding or accessing an injured participant.
2. **Broken bones** - falls can cause many severe bone injuries – not all immediately apparent after an incident.
3. **Dehydration** – due to the increased physical nature of orienteering, dehydration can happen in all conditions. In addition, potable water may not be available en-route, and participants may not drink regularly when participating in an exciting and challenging activity.
4. **Hypothermia** - orienteering is an endurance sport and can be undertaken in numerous environments and weather conditions. Hypothermia is a condition where the core body temperature drops to dangerously low levels, and can result in death. Hypothermia can occur in many different environments, and can have a different rate on onset in different people.
5. **Getting lost** – lost participants could create health risks, and certainly interrupt the training schedule. Not all participants know the areas and trails that are going to be used for the course, and there is a chance of an individual or group being separated during the activity.

Other risks could include: animal attacks, or allergic reactions (e.g. insect, food, etc).

MITIGATING RISKS IN ORIENTEERING

By considering the hazards involved in orienteering, you can aim to reduce the frequency, impact and seriousness of any injuries or accidents that may occur.

For example:

- a. the risk of head, neck, spine injuries and broken bones can be reduced or avoided by:
 - (1) marking off “out-of-bounds areas where major environmental risks are situated – e.g. cliffs, steep rocky terrain, etc. and/or
 - (2) encouraging participants to slow down in rough terrain,
- b. the risks of dehydration or hypothermia can be reduced by:
 - (1) increasing supervision at checkpoints during hot/cold weather,
 - (2) providing water points along the route, and/or
 - (3) providing wet weather gear.
- c. the risk of getting lost can be reduced or avoided by:
 - (1) providing communication devices for participants,

- (2) using signs to mark off borders of training area,
- (3) providing a safety bearing, and/or
- (4) pairing up novice participants with an experienced “coach.”

LIAISE WITH EMERGENCY SERVICES REGARDING A PLANNED ACTIVITY

Depending on the location of the planned activity, and prior to conducting an activity, the orienteering instructor may choose to liaise with the emergency services / agencies local to the area of the planned activity to advise them of the details of the upcoming activity. Local agencies may be able to provide key information / advice essential to the planning and safe conduct of the activity. This information / advice can be particularly useful if the orienteering instructor is using a new / unfamiliar area.

When liaising with local emergency services / agencies, the orienteering instructors should:

- Identify who the areas first responders are,
- Gather local emergency contact numbers, and
- Deliver a detailed itinerary of the planned activity to each service / agency.

SAFETY STAFF ROLES AND RESPONSIBILITIES

An orienteering instructor must pre-determine the number of safety staff required for an orienteering activity based on the type of activity and the number of participants. The safety staff is then assigned specific roles and responsibilities to assist with the search for overdue participants. Senior cadets / volunteers may fill safety staff roles as required.

SEARCHES FOR OVERDUE ORIENTEERS

The most desirable situation is to avoid the need for conducting a search for an overdue Orienteer. Good planning beforehand will greatly improve the likelihood that a search will not be needed.

1. When planning an Orienteering map, use easily recognized features such as major roads, major streams or bodies of water, major vegetation changes or distinct changes in terrain as boundaries for the mapped area.
2. Avoid designing courses that will lead those with limited Orienteering experience into a bland area that lacks distinct catching features.
3. Use record keeping procedures at the START that will assure knowing who is in the woods, what course they are doing and when they actually started.
4. Impress on all participants the need for checking in at the FINISH, whether they actually completed the course or not. Also, make them aware of the time limit requirements.
5. When it is felt that an Orienteer is overdue and has not arrived, the supervisor responsible for that participant must be brought in to do a physical search to ensure that the Orienteer has actually not returned.

If, in spite of all these best efforts, an Orienteer fails to return within the allotted time, you must start PHASE I of the search procedure. PHASE I is the information gathering part of the procedure. If the Orienteer does not return within the next hour, or if some other factor indicates that a formal search should be started sooner, proceed immediately to PHASE II of the procedure.

PHASE I

Bring your 'Overdue Orienteer Team' together and identify / assign the following roles:

Staff Role	Responsibilities
LOG KEEPER	This person starts and keeps a log of all activities pertaining to a possible search and the time such activities started and were terminated. It is better to have too much information than too little. This person will need a log book and pencil.
COMMUNICATIONS PERSON	This person's responsibilities are to notify others regarding the possible search and to stay close to a telephone (and radio) to receive incoming calls. This person should work closely with the Log Keeper. This person also requires a log book and pencil.
INFORMATION GATHERERS	These people seek out Escort Officers, coaches, friends, team mates and others that may have information pertaining to the overdue Orienteer. They should write down as much information about the orienteer as possible, such as: <ol style="list-style-type: none"> a. hair colour, b. approximate height and weight, c. type of clothing, d. orienteering skill level, and e. any known medical conditions or allergies.
Staff Role	Responsibilities
PERSONAL EFFECTS PRESERVER	This person establishes a protective zone around the Overdue Orienteer's personal effects to preserve the Overdue Orienteer's scent from undo contamination. This unadulterated scent will be extremely useful if search dogs are used later.
SEARCH HELPERS	Experienced Orienteers and Event Staff can help as members of the Search Party, under the guidance of experienced searchers. Do not include the Escort Officer or Coach in the Search Party, or direct them to return to the Competition HQ if they are out on the course. They should remain in the area of the Competition HQ or Search Command Post at all times. Resist the pressures to begin a search prematurely. Amateur efforts, even though well intended, may jeopardize a successful search by contaminating scent trails. A trained dog is the best hope for a successful search. Few injuries that an Orienteer may suffer are life-threatening. Nearly all deaths of lost hikers are due to hypothermia.

PHASE II

NOTIFYING OUTSIDE AGENCIES

Agency	Action
LOCAL POLICE SERVICE	Once you have moved to PHASE II, the Local Police will be the first outside agency to be contacted. They have the ability to mobilize a large number of assets in a very short time frame, including local Search and Rescue organizations if available.
PARK AUTHORITY	Although the Park Authority (Provincial Park, Conservation Area, etc.) may want to be the first agency notified, this contact can be made immediately after the Local Police are contacted. It is very important that Park officials be notified quickly as they too can be an asset in your attempts to find a missing Orienteer, but must do so in coordination with the Local Police.
REGIONAL / DETACHMENT CONTACT	Notify your specified regional / detachment contact as soon as you have deemed it necessary to involve any outside agencies as part of your search.
FAMILY	Do not call the family of the lost cadet unless instructed to do so by the Region / Detachment. Reassure them that everyone is working very hard to find their son or daughter; that they are within boundaries and have a compass and a safety bearing. Do not promise them results or pass unconfirmed information eg, possible signs, sightings, etc. Keep them updated with the search efforts. If they have been contacted and the cadet is found, provide the means for that cadet to communicate with their family ASAP.

SEARCH FOR OVERDUE ORIENTEERS (WORKSHEET)

SEARCHES FOR OVERDUE ORIENTEERS

The most desirable situation is to avoid the need for conducting a search for an overdue Orienteer. Good planning beforehand will greatly improve the likelihood that a search will not be needed.

1. When planning an Orienteering map, use easily recognized features such as major roads, major streams or bodies of water, major vegetation changes or distinct changes in terrain as boundaries for the mapped area.
2. Avoid designing courses that will lead those with limited Orienteering experience into a bland area that lacks distinct catching features.
3. Use record keeping procedures at the START that will assure knowing who is in the woods, what course they are doing and when they actually started.
4. Impress on all participants the need for checking in at the FINISH, whether they actually completed the course or not. Also, make them aware of the time limit requirements.
5. When it is felt that an Orienteer is overdue and has not arrived, the supervisor responsible for that participant must be brought in to do a physical search to ensure that the Orienteer has actually not returned.

If, in spite of all these best efforts, an Orienteer fails to return within the allotted time, you must start PHASE I of the search procedure. PHASE I is the information gathering part of the procedure. If the Orienteer does not return within the next hour, or if some other factor indicates that a formal search should be started sooner, proceed immediately to PHASE II of the procedure.

PHASE I

Bring your 'Overdue Orienteer Team' together and identify / assign the following roles:

1. LOG KEEPER _____

This person starts and keeps a log of all activities pertaining to a possible search and the time such activities started and were terminated. It is better to have too much information than too little. This person will need a log book and pencil.

2. COMMUNICATIONS PERSON _____

This person's responsibilities are to notify others regarding the possible search and to stay close to a telephone (and radio) to receive incoming calls. This person should work closely with the Log Keeper. This person also requires a log book and pencil.

3. INFORMATION GATHERERS _____

These people seek out Escort Officers, coaches, friends, team mates and others that may have information pertaining to the overdue Orienteer. They should write down as much information about the orienteer as possible, such as:

- a. hair colour,
- b. approximate height and weight,
- c. type of clothing,
- d. orienteering skill level, and
- e. any known medical conditions or allergies.

4. PERSONAL EFFECTS PRESERVER _____

This person establishes a protective zone around the Overdue Orienteer's personal effects to preserve the Overdue Orienteer's scent from undo contamination. This unadulterated scent will be extremely useful if search dogs are used later.

5. SEARCH HELPERS

Experienced Orienteers and Event Staff can help as members of the Search Party, under the guidance of experienced searchers. Do not include the Escort Officer or Coach in the Search Party, or direct them to return to the Competition HQ if they are out on the course. They should remain in the area of the Competition HQ or Search Command Post at all times. Resist the pressures to begin a search prematurely. Amateur efforts, even though well intended, may jeopardize a successful search by contaminating scent trails. A trained dog is the best hope for a successful search. Few injuries that an Orienteer may suffer are life threatening. Nearly all deaths of lost hikers are due to hypothermia.

PHASE II

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4. FAMILY

Do not call the family of the lost cadet unless instructed to do so by the Detachment. Reassure them that everyone is working very hard to find their son or daughter; that they are within boundaries and have a compass and a safety bearing. Do not promise them results or pass unconfirmed information eg, possible signs, sightings, etc. Keep them updated with the search efforts. If they have been contacted and the cadet is found, provide the means for that cadet to communicate with their family ASAP

EO 102.02 – PLAN AN ORIENTEERING COURSE

Select a Location for an Orienteering Activity

Selecting an orienteering site involves a number of important factors. During the last TP various organizations were discussed as resources to assist in planning an orienteering activity. To assist you in selecting a location other factors involved include:

- suitability of the location,
 - terrain that matches the skill level of the participants,
 - map reading challenges appropriate for the skill level of the participants, and
 - distances that are appropriate for the participants,

- consulting the Range Safety Orders (RSOs) when planning an activity on a Canadian Forces Base. May include information such as;
 - training restrictions,
 - out of bounds areas,
 - march out requirements,
 - procedures to follow if calling for an ambulance,
 - additional safety information such as emergency contact number, and
 - other groups that you may come into contact with in adjacent areas.

- ensuring that the area includes map features that suit the level of the activity by;
 - verifying that the map information is correct and current,
 - confirming the skill level of the participants, and
 - checking that dominant map features will allow for routes that match the skill level of the participants,

- availability of facilities such as;
 - sufficient parking for those who require it,
 - washroom facilities,
 - an urgent care facility / hospital close to it,
 - shelter from rain or sun, and
 - cellular phone service or an emergency land line.

- accessibility for all participants to be able to attend the activity.

Canadian Orienteering Federation (COF), local clubs and associations

The COF is comprised of many affiliated community and provincial orienteering clubs and associations. Each of these individual groups, along with the COF will be your source of information for the geographic area of the students.

www.orienteering.ca

The COF or your local orienteering clubs can assist you with identifying locations for your activity. They can help by:

- identifying suitable civilian locations,
- providing maps for the intended activity,
- assisting in the creation of an orienteering map for a desirable area, and
- inviting you / your corps / squadron to local club activities at different civilian locations.

They may offer other best practices and tips that could include:

- how to plan courses based on your target group and their level of experience,
- who to contact for local support items like portable toilets,
- emergency services / planning
- municipal permit requirements, and
- seasonal considerations (e.g. risk of standing water, hunting seasons).

Acquire Maps that can be used for Orienteering Activities

It is commonly believed that one of the most difficult tasks in organizing an orienteering activity can be finding suitable maps for the area desired. In most cases the scale of the maps are either too large or they lack the level of detail that is needed for the orienteer to fully enjoy and complete the activity. Knowing where to look to acquire suitable maps is important for an instructor to organize an orienteering activity.

There are a number of places that maps can be acquired from, including:

- local orienteering clubs may have a number of different location maps to choose from,
- many school boards have areas that have been mapped for orienteering activities,
- provincial / national parks may have camp site and trail maps, and
- trekking clubs map have maps that they offer to their members available.

Trekking clubs have maps of areas of interest with very detailed information, such as:

- terrain details,
- contour details,
- vegetation details, and
- other land form information.

PRINCIPLES FOR SETTING THE COURSE FOR AN ORIENTEERING ACTIVITY

Setting The Course

Orienteering activities are intended to test the participants' ability to use a map and compass while providing a mental / physical challenge of navigating terrain. Participants should enjoy and be satisfied with the courses they are given, therefore, course planning needs to ensure that the courses are appropriate in terms of length, both physical and technical difficulty and control location. To achieve this aim, setting the course should occur well in advance of the activity and take into consideration the following:

Skill level of the Participants

Orienteering courses should be designed to suit the skill level of the participants in order to be successful and the results of the event will reflect if this was achieved. When setting the course, consideration must be given to the participants' expected skill level including their experience and ability to read and understand details of the map. Beginners should be given a course that is short in duration and has a few easy to find control points. Experienced participants can be given longer and more demanding courses with challenging control points.

Course Planning

Courses are described in terms their navigational difficulty, based on course ranking utilized by the Canadian Orienteering Federation (COF). The following table can be used as a suggested guideline to determine course length:

Skill Level	Distance	Number of Controls	Difficulty
C-1 Beginner (easy)	1-2 km	6-10	Control points - easy to locate Singular attack point and route Mainly on trails Flat terrain, obvious features
C-2 Easy Intermediate	2-3 km	8-12	Control points - average to locate, somewhat obscured, slightly off trail Obvious attack points and routes Varied terrain with some distinct features
C-3 Intermediate Advanced	3-4 km	8-12	Control points - difficult to locate, obscured, off trail Multiple attack points and routes Varied terrain, challenging features
C-4 Expert	4+ km	10-15+	Control points – difficult to locate Obscured Multiple cross-country routes Requires good compass skills

Suitability of the Area

When selecting an area for an orienteering activity, consider areas that provide a variety of terrains over which the participants must navigate. Areas where the participant must go through wooded areas, travel along roads and pathways, over or around hills and through fields will provide interest and challenge. The area selected should be appropriate to the skill and experience level of the intended participants.

Existing Maps of the Area

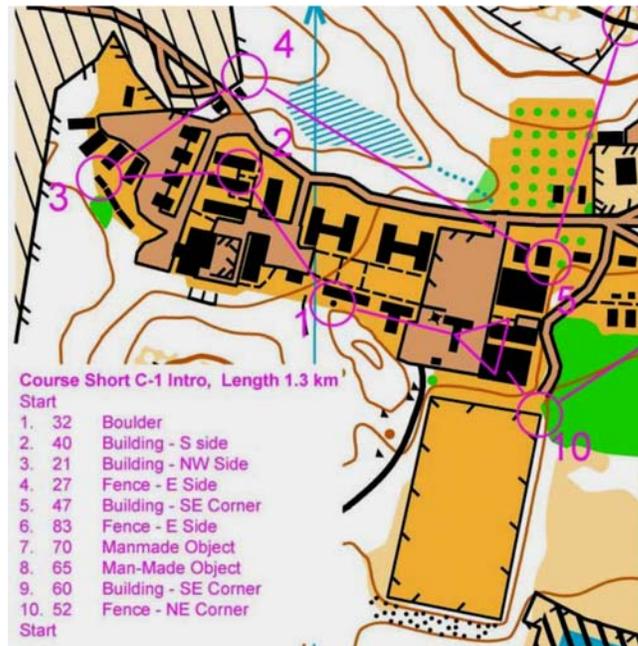
Emphasis for the participants should be on using the map of the area to navigate from one control point to another. The compass should be used as a secondary tool. It is important to have a legible map of the area which will provide the participants with enough clear information and detail that they will be able to successfully navigate the course. Specially produced orienteering maps should be used whenever possible and adds to the fun and interest of orienteering. If an orienteering map is not available of the area intended for use, a topographical map can be used keeping in mind that a smaller scale works best for orienteering. Some provincial parks have readily available maps that may be suitable.

Master Maps

Master maps should be created when setting the orienteering course and displayed near the start point so that participants can copy their courses onto their blank map.

Description Sheets

In orienteering competitions the locations of the control points are described on a control description sheet (or clue sheet). These descriptions indicate the exact features used and the code number used on the control. When setting an orienteering course, description sheets must be created and handed out with the orienteering maps for use by the participants. Control descriptions can also be printed directly on the map.



Control and Attack Points

Control and attack points should be located in such a way that they provide the participants with a skill appropriate test / challenge. The control flag should be placed at the feature in accordance with the control description and should be visible to the competitor when they can see the described position. Select clearly defined features as control sites. Avoid out of bounds areas. Control markers should not be hidden but can be placed at different elevation features or at man-made features requiring thought / ingenuity to reach them. Attack points can range from obvious to obscure depending on the skill level of the participants.

Choice of Routes

The choice of routes should allow the participants to select a route that provides both a challenge and an achievable opportunity to navigate from one control point to the next.

COF planning standards, rules and regulations can be found at:

http://www.orienteering.ca/pdfs/COF_rules.pdf

RECCE AN ORIENTEERING ACTIVITY SITE

When considering a site for an orienteering activity, a recce should be conducted to ensure that the prospective site is suitable for the type of orienteering that is planned. The recce should take place well enough in advance to allow time for the course / plans to be adapted or the selection of a secondary site as necessary. During the recce, consider the following factors:

Ensuring the course route is clear of obstacles

Walk the various routes that the participants may travel. Check to see that the route is clear of obstacles that could make navigation difficult or hazardous. Make note of any concerns, out of bounds areas or features that should be mentioned to the participants prior to the activity taking place.

Ensuring Map Features are Current

Ensure that the map intended for use during the activity is the most current version and accurately reflects the terrain in detail. Any changes to the terrain that have been made since the production of the map (new roads, new buildings, wooded areas are now clear, etc) should be updated on the master map as well as the maps that the participants will be using.

Identifying participant skill level appropriate attack points

When selecting attack points, ensure that they are appropriate to the skill level of the participant. Attack points for beginners should be obvious and easy whereas attack points for the more experienced participant can be obscured and provides a challenge.

SET AN ORIENTEERING COURSE

It is important to keep in mind the skill level of the participants when setting an orienteering course. The course should be fair, challenging, fun and achievable.

Placing Controls

Select a location where the control flag will be visible and appropriate for the skill level of the participants. Place controls and punches at the selected control points in such a way that the location is not given away by the participants. Controls should not hidden in bushes or trees and should only be placed behind a feature if the control marker is visible from the side indicated on the map.

Indicating Locations on a Map

Indicate the location of each control point with a streamer of trail tape on the terrain and in pen / pencil on the master map with a circle and number. If the location is behind a feature, indicate which side the control point is visible from.

Identifying Location Features

Write down the description of each control point that identifies its location and the surrounding features. This information can be used for both the map and as a way of confirming that the participants went to the correct point.

ORIENTEERING COURSE PLANNING GUIDELINES

Aims of the Course Planner

Primary aim: Courses are suitably planned for the age groups concerned.

Secondary aims:

- control stands and flags are correctly placed and the map gives a true picture of the control surrounds,
- control descriptions are accurate and correspond to the map,
- numbers on all the controls are correct and match the control descriptions for all courses, and
- courses are printed correctly on all the maps (either master maps or pre-marked maps where these are used)

Basic Principles

The standard of any course, and in particular, the map reading and route choice problems, should be appropriate to the age, experience and ability of the competitors expected to take part and should follow the IOF publication Guidelines to Course Planning. The location of controls and the selection of legs should be such that the element of luck is minimised, and the courses offer a fair test of orienteering skill.

- Courses should be designed for the expected abilities of participants and the results should reflect this. The deciding factor in the results should be orienteering skill. Attention needs to be paid to the competitors' expected skill, experience, and ability to read and comprehend the fine detail of the map.
- Orienteering on foot may be characterised by running navigation. Hence the terrain should be suitable for running and testing the orienteering skills of competitors.
- Fairness – The orienteering instructor must ensure that the contest is fair and that all competitors face essentially the same conditions on every part of their course ie eliminate the element of luck (often reflected in bingo controls).
- Competitor enjoyment - orienteers should be satisfied with the courses they are given, therefore, course planning needs to ensure that the courses are appropriate in terms of length, both physical and technical difficulty, control siting etc.
- The course planner needs to be familiar with the terrain before planning to use any control or leg.
- Courses should be set so that normally fit competitors can run over most of the course set for their level of ability.

Course Planning

Courses are described in terms of their navigational difficulty, based on the usual course ranking utilized the Canadian Orienteering Federation:

- **C-1 Beginner** - mainly on trails/ obvious features 1-2 km (6-10 controls)
- **C-2 Easy Intermediate** - obvious routes, controls slightly off trail 2-3 km (8-12 controls)
- **C-3 Advanced Intermediate** - route choices, compass, off trail controls 3-4 km (8-12 controls)
- **C-4 Expert** - many cross-country route choices, difficult controls, good compass skills required 4 km + (10 – 15 controls +)

Beginner (Easy)

- Courses must follow major mapped linear features.
- Controls are on trails, junctions or easily identifiable features close to the trail.
- Control sites are needed at every turning point and placed so as to lead the competitor in the correct direction.
- Control markers should be visible on the approach side.
- Large obvious features, visible from / close (<25m) to the linear feature should be used.
- Courses should be designed so that all competitors are likely to complete them, if there are "Did Not Finish" (DNF) on these courses or time taken to complete the course becomes excessive, the above guidelines have not been followed.
- Course should be able to be completed without compass bearings.
- When checking the course, remember to view it from a juniors perspective (gentle terrain, no hazards).
- Avoid physically difficult control sites.
- Don't be afraid to have lots of controls, generally 10 or so is ok.

Easy Intermediate

- Control sites must be on or near linear features but preferably not at turning points. Off-trail controls should be within 100 m of a handrail.
- Controls are on easily identifiable features. Subtle contour features should be avoided.
- Most of the course should be designed to allow the use of handrails, with some opportunity to cut corners and go cross country.
- Control markers should be visible from the approach side by any reasonable route.

Advanced Intermediate

- Courses should have several route choices.
- There should be attack points near controls.
- Catching features should be present <100 m behind controls.
- Control sites can be fairly small point features but not in areas of complex detail
- Control flags not necessarily visible from the attack point.
- Control flags not necessarily visible from direction of approach.
- Preferably avoid areas of complex contour detail.
- Aim is to provide a technical challenge without allowing serious errors to occur.

Expert

- Navigation should be as difficult as possible (but this should not override basic principles of running navigation above).
- Controls can be on small contour and point features.
- No large obvious attack points or handrails nearby.
- Route choice should be an element of most legs.
- Have variety in the types of navigational and route choice problems set.

The Orienteering Course

Orienteering courses are made up of a start, legs, controls and finish. Orienteering instructors should not overfocus on only finding interesting control sites, but instead take time to find good quality orienteering legs as the most important elements of the course. Course planning should consider the legs before the control sites, keeping in mind the following:

- good legs offer competitors interesting map reading problems, allow for alternative individual routes, and tend to separate competitors,
- try to plan the main legs where the map is rich in details, changeable in character and demanding in map reading ability,
- different types of legs should be offered on a course, eg range from intense map reading to sections in which rough orienteering is possible,
- variations with respect to length and difficulty in order to force competitors to use a range of techniques
- courses should offer changes in directions for consecutive legs to force competitors to frequently reorient themselves,
- it is preferable for a course to have a few very good legs joined by short links to enhance the better legs rather than a larger number of even but lesser quality legs,
- good legs with several route choice possibilities tend to split up the field thus reducing “following”, and
- use short linking legs to eliminate dog legs eg as in diagram below

Courses should be designed to have a common last control so that competitors finish from a common direction.

The other components of the course are the start and finish. Access and suitability of different parts of the map for the easier courses often control the location of these. When choosing the start-finish area, ensure that the EASY and VERY EASY courses can be set from this location. In colder weather, locating registration, start and finish within close proximity, is generally appreciated by competitors.

Control Descriptions

Control descriptions must be prepared for each control site. These descriptions should be written in plain text for the Beginner Courses. For more advanced courses (C-2 and above) use the IOF symbols.

The aim of the individual control descriptions is to specify the control feature and the site of the marker in relation to this feature. Controls can only be located on mapped features and the control description must match the mapped feature according to the map legend. The description of the control feature should be complete and must include the type of feature, along with information on where the control flag may be in relation to the control (i.e. NW side etc).

If a control feature cannot be clearly described then it should not be used, eg middle boulder when there are many boulders within the control circle.

The control descriptions for the particular course should be fixed to pre-marked maps, and when master maps are used for map marking by competitors, attach a control description to the master map.

Additional information, which can be included on control descriptions, includes safety bearing and course closure time.

Course Planning Process and Control Checking

- Establish guidelines and requirements before course setting begins (eg courses required, level of participants, desired course format).
- Plan courses on paper, ensure distance climb etc are as required. Time spent planning will minimise field checking and subsequent alterations. Plan control numbers at this time; ensure there are no problems with similar numbers on nearby similar controls.
- Field check courses and control sites, mark with survey tape or similar preferably labelled with control number and description,.
- During the field check:
 - description of control is correct and complete,
 - map accurately portrays the ground in the vicinity of the control and that direction and distances from all possible angles of approach are correct
 - there are no major hazards likely to be encountered by competitors on any leg (eg dangerous cliffs, areas of mine shafts etc), if so arrange for this to be flagged and or taped off.
 - if you are having trouble finding control feature / have doubts about its mapped accuracy, then it is better not to use the feature.
 - note any relevant map corrections while field checking controls.
 - mark any hazardous areas.
 - ensure any changes resulting from field check do not compromise courses.
 - finalise courses, check master maps for courses, master maps for all controls, control description lists.

Sitting Of and Visibility of Control Flags

The control flag should be placed at the feature IAW the control description. It should be visible to the competitor when they can see the described position (orienteering is not a treasure hunt). If this is not the case, then the map is of no further use to the competitor and the only solution is to hunt around until the flag is found with the result that success becomes a matter of luck and not orienteering skill. The value of good legs may be lost if the control site at the end of it results in a significant delay due to a flag being hidden, location or ambiguous description or from being misplaced.

If the control is on a linear feature eg watercourse, the control flag should be visible in *either* direction, from a distance which is between 5-10% of the distance from the nearest attack point, with a minimum of 5m. Don't hide the control behind a bush, especially if this results in the control being more visible from one side than the other.

For broader features eg spur, gully, the control flag should be visible in any direction from a distance that is between 5-10 % from the nearest attack point, with a minimum of 10 m.

Controls on point features must be visible when the competitor is standing at the feature as described on the control description.

Siting of controls on the same type of feature in close proximity is not recommended eg adjacent gullies both with controls. Although there are no rules specifying the separation required in OFA Technical Regulations, 100m is generally used and is specified in IOF "Principles of Course Planning". When siting nearby controls on the same / similar features (eg boulder and boulder cluster) use control flags with significantly different number codes. Controls placed too close on different courses can mislead runners who have correctly navigated to the control site, so ensure that close spaced controls are significantly different in both their terrain location and type of feature, otherwise the element of luck returns.

Placing controls in a maze of illegible detail, in dark green, or on isolated point features in otherwise featureless terrain should be avoided, these generally become the "bingo controls". Controls are not technically difficult because they are hidden. Controls, which are in greener areas, should have good attack points or other features that assist in defining the location of the control due to the reduced visibility.

Common Problems with Course Setting

- Control site too difficult for inexperienced orienteer eg subtle features, lack of detail.
- Control site too easy for more experienced eg little navigation required, on a major features.
- Control site is confusing because of map errors / unmapped detail.
- Control location is vague.
- Marker is hidden eg in a pit, or description is incomplete.
- Dog legs are present (competitors lead others to control and go back over same terrain).
- Course lacks variety.
- Lack of route choice on more difficult courses.
- Lost distance - no navigation needed over most of the legs eg a long run to a major catching feature.
- Course is unnecessarily physical for age group.
- Course has not been checked for running feasibility / hazards (eg mine shafts, dangerous cliffs on downhill routes).
- Temptation for competitors to find controls out of order (although at non-championship events, it is sufficient to rely on competitors' honesty).
- Obvious routes too close to out of bounds / unmapped areas.
- Control / obvious route very close to edge of map (unless map bounded by distinct large linear feature).
- Temptation to equate technical difficulty with physical difficulty.

Master Maps and Map Marking

Courses should be drawn as follows:

- Start - by a 7 mm equilateral triangle with one vertex pointing to the first control,
- Controls - by circles 5-6 mm in diameter with the control feature in the centre,
- Finish - by two concentric circles 5 and 7 mm in diameter,
- Marked routes by dashed lines,

- The controls should be numbered in sequence, top of numbers to top of map. Control circles and connecting lines should be interrupted if they obscure important details,
- A control description should be fixed to the front of master maps that competitors are to copy from. Hazardous and forbidden areas should be clearly indicated on master maps. Relevant map corrections should also be marked on master maps, and also displayed on maps at registration.

EO 102.03 – ORGANIZE AN ORIENTEERING ACTIVITY

Each time an orienteering instructor organizes an orienteering activity, they provide the participants with an opportunity to be active in a sport that supports map and compass skill development while promoting physical activity. Orienteering can be a fun and interactive aspect of corps / squadron training and is found as a complimentary activity in the Qualification Standard and Plans (QSP) and Instructional Guides (IG) for all elements.

REGISTERING ORIENTEERS

Once the participants arrive on site for an orienteering activity, they will be required to check in at the registration desk to give / receive some basic information. The participants' personal information such as name, age, category, corps / squadron and contact information will be recorded. Compasses, control cards and areas maps may be distributed at this point. If required, the registrar can assist the participant in determining which category they fall into. A bulletin board should be established to display information for the activity regarding safety rules; first-aid arrangements, emergency numbers, participant names and activity start / finish times.

Participant Category Selection

The participant categories should be decided on in advance by the orienteering instructor and will depend on the aim, type and scope of the orienteering activity planned. An orienteering instructor can choose to conduct an informal Corps / Squadron orienteering activity, using a wide variety of categories based on age, gender, random draw, cadet program level, rank or a combination team comprised of any number of variables. Local / nationally organized civilian orienteering meets use the COF classifications which are determined by sex and age, ability or a combination of ability within age categories.

Control Documents

Control cards and orienteering maps of the area should be prepared in advance and ready to be handed out to the participants prior to the start of the activity. Officials should ensure that the control cards are filled out by the participants with individual / team information. The control description sheet contains all the information on the competitor and their race, as well as IOF symbols or written descriptions of the control points.

Orienteering® Control Point Card		CLASS M1 COURSE W No. 16		FINISH 1:46:45	
NAME JOHN DOE		CLUB NONESUCH compass		START :18:00	
COLOUR		day	time ck	punch ck	place
ALL COMPETITORS MUST REPORT TO THE FINISH					
TIME 1:28:45		DETACH 			
FOLD		FOLD			
PLACE	DAY	CLASS	COURSE	NAME	CLUB
		M1	W	JOHN DOE	NONESUCH
TIME 1:28:45					
COLOUR					

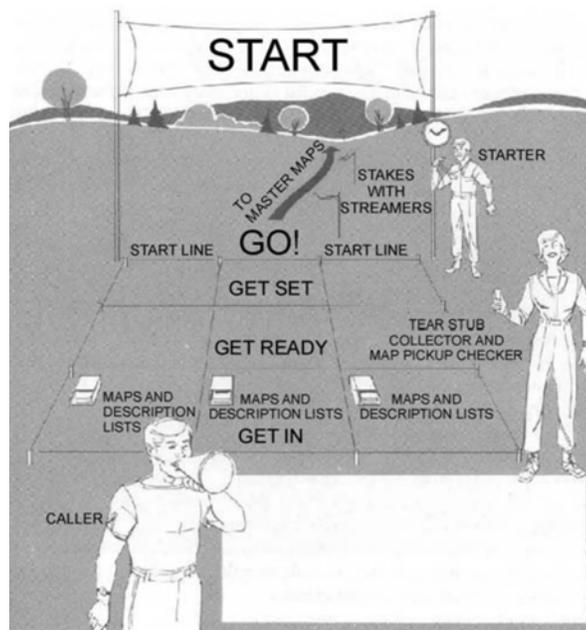
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

Support Information

Organizers should ensure that participants are in possession of a valid health card and provide their personal emergency contact information including corps / squadron contact information.

DISPATCH (START) AREA

The dispatch (start) area is usually located in the same vicinity as the finish area. It normally has a clear area with enough space to accommodate officials and participants for individual / group starts. The dispatch (start) area is divided into three rows. The first row is called “Get In”, where the participants are handed their maps and description lists by the map pickup checker. The second row is called “Get Ready” and is where the participants hand in their control card tear-stub to the tear-stub collector. The stubs are handed in as a safety measure to record which orienteers are running the course. The third row is called “Get Set”, and is located just behind the start line. If pre-marked maps are being used, this is the area where they would be handed out to the participants.



Be Expert With Map & Compass: The Complete Orienteering Handbook

Roles of the Starting Officials Team

- Registrar – records participant’s personal information,
- Caller – calls the participants to the dispatch area and start line,
- Tear stub collector / map pick up checker – collects the control card stubs and ensures that participants have a map,
- Starter (time caller) – calls out the individual / group start times, and
- Time recorder – writes down each participant’s start time as they are called out.

The Timings for Dispatching

Participants are called up to the dispatch (start) area 5 minutes prior to the start time. This is indicated with a whistle blast by the starter. At the three minute mark, participants are called to the “Get In” row of the starting grid. At the two minute mark, upon hearing a whistle, the participants move forward to the “Get Ready” row, where they review a copy of the description list and the map (if it is not a pre-marked map). At the one minute mark before the start, participants move to the “Get Set” row, where pre-marked maps are distributed, but cannot be looked at until the “Go” whistle is sounded.

At the zero-minute, there will be a “Go” whistle, signaling the participants to start the activity. At this point the departure time is recorded on the recorder’s sheet.

Once a participant leaves the starting grid, they must depend on their map and compass skills and use the various orienteering techniques to complete the activity. At each control point they must stamp or punch the control card in the proper square with the code symbol to prove that they have visited it.

FINISH AREA

The finish area may be located in the same area as the start line and normally has a clear area at the end of the trail so that participants can give a last effort to increase their time and to ensure that the timekeeper can see them as they approach / cross the finish line. Upon crossing the finish line, the timekeeper will call out the time which is written down by the time recorder on the recording sheet. The control card is passed to the as it is handed to a control card collector. The participant’s time is then transferred onto the master recording sheet so that final scores can be tabulated.



Statistics Area

Once the control cards have been received, the statistics recorder enters the time and notes the number of punches and verifies that they are in the correct order. The final scores are then tabulated by the time calculator based on finish times / control punches.

Results Information board

The final scores are then posted on the results information board by the result judge or the result judge's assistant so that participants, staff and spectators can view them.

Return Area for Activity Stores

An area should be established near the finish area where participants can return any stores / equipment that they have been issued for the activity such as compasses, maps etc. Once all participants have completed the course, the control markers will need to be collected and returned to this same area.

ORIENTEERING ACTIVITY BRIEFING

Prior to the commencement of the orienteering activity, the orienteering instructor should give a briefing to pass along any pertinent information, directions / instructions to all participants including the staff assisting with the activity. A question / answer section should be included to allow for clarification of points.

Staffing Roles

A number of officials are required to staff an orienteering activity but several roles can be filled by the same person. At large activities additional staff will be required to act as time callers and time recorders. The staff / officials should be introduced during the orienteering activity briefing.

The Safety Briefing

The safety briefing will be given following the activity briefing and will contain information relevant to safety on the course and current weather conditions.

Activity Details

Any details that are relevant to the activity and of interest to the participants should be mentioned in the activity briefing delivered prior to the first start time. Details for the briefing may include information regarding:

- Welcome / introductions,
- Registration,
- Information / results board,
- Start timings,
- Location and time of safety briefing,
- Washrooms,

- Water / refreshments,
- First-aid station,
- Awards ceremony,
- Equipment draw / return, and
- Question / answer period.

SAFETY BRIEFING

Safety during an orienteering activity is the responsibility of the orienteering instructor, activity staff and participants. Safety rules and guidelines must be followed at all times and participants must use good judgment in recognizing hazards and dangerous situations. A safety briefing must be held at every orienteering activity and every participant must attend. The briefing must contain such vital information as:

- Out of bounds areas,
- Safety bearing,
- Absolute finish time,
- Safety rules, and
- Special guidelines as they apply to the particular course.

Safety Bearing

A safety bearing for the activity must be determined and provided to the participants during the safety briefing. The safety bearing will take the participants to a easily recognizable marked boundary such as a road or fence. It is important to confirm with all participants that they understand how to find the safety bearing on their compass prior to starting the course.

First aid locations

First aid locations should be established at the dispatch (start) / finish area. Access to and from the training area must be permitted freely and a safety and evacuation vehicle must be present at the closest vehicle access point. There must be at least a first aid qualified staff person present at the orienteering activity. In competitions of long duration lasting more than four hours, mass numbers of competitors (75 participants or more) or endurance events, medical staff proportionate for the number and types of expected injury is advised.

S.T.O.P. (sit, think, observe, plan)

If a participant becomes lost at any time during the activity, their first action taken should be to S.T.O.P. – stop / sit, think, observe, plan. The participant should stop / sit down, think about their location and consider if they are really lost, observe their surroundings to see if something looks familiar and plan what to do next.

ORIENTEERING ACTIVITY BRIEFING MATRIX

Component:	Example statements:
1. Welcome / Introduction: <ul style="list-style-type: none"> - Welcome - Staff Introductions 	<p>Welcome to [name of area or activity].</p> <p>My name is [rank name] I will be the Orienteering Instructor for today's activity. My job is to [list duties of the Orienteering instructor applicable to the activity being conducted].</p> <p>The following staff will be assisting on the course today [ranks names, appointments, duties and responsibilities].</p>
2. Overview of course layout: <ul style="list-style-type: none"> - Components of the course - Locations of facilities - Dispatch / finish area 	<p>As you [can / will] see the course layout is as follows [describe the components of the course (eg, registration area, dispatch area, finish area.)].</p> <p>The following facilities are available [describe / identify the location of the various facilities].</p> <p>Concurrent activities will be taking place [describe / identify the training area(s) which will be used for concurrent activities].</p>
3. Safety Briefing:	<p>The Safety Briefing will be conducted by [rank name] and held at [time, location].</p>
4. Equipment: <ul style="list-style-type: none"> - Compasses - Maps - Personal equipment 	<p>The following equipment will be used on the course [list equipment which will be permitted on the course (eg, compass glasses)].</p> <p>No electronic Global Positioning System receivers (GPSr) may be used. [includes all electronic devices].</p>
5. First aid and emergencies: <ul style="list-style-type: none"> - Location of first aid point and safety vehicle - Identification of first aider 	<p>If any minor injuries occur, the first aid point is located [describe / identify the location of the first aid point] and the appointed first aider will be [identify the appointed first aider(s) and where they will be].</p> <p>If there are any injuries or emergencies that cannot be handled on site we will [describe emergency procedures (eg, actions to be taken in the event of emergencies, routes of access, emergency response plan)].</p>
6. Additional Items: <ul style="list-style-type: none"> - Breaks - Messing / meals / snacks - Set up / dismantling the course 	<p>The activity will begin at [time (eg, 0930)].</p> <p>Lunch [location of messing area] from [time (eg, 1200 – 1300)].</p> <p>Awards ceremony will take place at [time (eg, 1600 – 1630)].</p> <p>Transportation will depart at [time (eg, 1700)].</p>
7. Questions:	<p>Does anyone have any questions?</p>
<p>The above may be used as a guide when drafting an orienteering briefing. Pick which components apply to the activity being conducted and if desired use the sample statements to begin writing your briefing. Keep in mind that although the list of components provided should be extensive enough to cover most orienteering activities and conditions, additional items may be required.</p>	

ORIENTEERING SAFETY BRIEFING MATRIX

Component:	Example statements:
1. Welcome / Introduction:	<p>Welcome to <i>[name of area or activity]</i>.</p> <p>My name is <i>[rank name]</i> I will be conducting the safety briefing for today's orienteering activity.</p> <p>I ask for your undivided attention during this briefing because I'm going to pass along information which is very important for your personal safety and enjoyment of the course.</p>
2. Required equipment: - Whistle - Compass - Dispatch / finish area	<p>Before you will be permitted to participate in the activity, you will be required to show that you have a whistle and compass in your possession. Both of these items must be carried at all times.</p> <p>You will only be issued with your map, once you have shown your compass and whistle to an official.</p>
3. Safety bearing:	<p>The safety bearing for this area / activity is <i>[safety bearing]</i>. Be certain to practice finding this bearing before you start the activity. If you need assistance with this please come and see me following the briefing.</p>
4. Out of bounds areas:	<p>The out of bounds areas for this activity are <i>[list here]</i>. A map showing the out of bounds areas is posted on the information board.</p>
5. Whistle	<p>Only use your whistle in distress:</p> <p>(1) in case of serious injury or medical emergency;</p> <p>(2) if darkness is imminent; or</p> <p>(3) after being lost for one hour, having made all reasonable attempts to return to the finish.</p> <p>Misuse of the whistle will result in disqualification from the event.</p>
6. Action when lost: - S.T.O.P.	<p>If you become lost at any time during the activity, the first action to take is to S.T.O.P. – stop/sit, think, observe, plan. Stop / sit down, think about where you are and if you are really lost, look at your surroundings to see if something looks familiar and plan what you are going to do next.</p> <p>Blow 3 long whistle blasts; wait for 5 minutes before continuing on your safety bearing.</p>
7. Absolute finish time:	<p>The absolute finish time for this activity is: <i>[time]</i>. All participants must be back at the finish area before then. In the event that someone does not return by the specified time, a search will be conducted.</p>

Component:	Example statements:
8. General safety rules:	<p>Check that your footwear is securely tied. Watch your footing on rocks, logs, roots and inclines. When you go through wooded areas be careful of branches near your face.</p> <p>If you hear three whistle blasts, [stop competing and try to help, but do NOT venture into non-mapped areas alone. Try to determine the location of the whistle blasts and look for a staff member for help].</p> <p>Don't overdress for competition.</p>
9. First aid and emergencies:	<p>If you become injured while on course, look for a staff member and ask for help. If you cannot move, blow your whistle three times then pause and repeat twice each minute. Wait for help to arrive.</p> <p>If you come across an injured person, stop competing, determine the location on your map and look for a staff member for help. Any lost time will be credited back to you.</p>
10. Special Guidelines:	<p>Special guidelines applicable to this particular course are: <i>[wildlife, weather, etc.].</i></p> <p>If you lose your compass, whistle or control card, try to find and if unsuccessful, determine your location, when you last had the item and where you noticed it missing. Continue on the course then afterward, ask staff for help finding the item.</p>
11. Questions:	Does anyone have any questions?
<p>The above may be used as a guide when drafting a safety briefing. Pick which components apply to the activity being conducted and if desired use the sample statements to begin writing your briefing. Keep in mind that although the list of components provided should be extensive enough to cover most orienteering activities and conditions, additional items may be required.</p>	