

The Canadian Adventure Racing Association

Safety Guidelines
January, 2006

Minimum Standards for the Conduct
of Safe Adventure Racing



Revised January 2006

Original Contributors:

Bob Miller, Chris Koch, James Elliot, Scott Ford, Jim Mandelli, Brian Gallant and Simon Donato

Table of Contents

Table of Contents	1
Part 1 – Event Planning	3
1 Introduction	3
1.1 About the Canadian Adventure Racing Association	3
1.2 Scope	3
1.3 Purpose	3
1.4 Definitions	3
2 Promoters	4
2.1 Risk Management	4
(a) Chain of Command	4
(b) Communication Systems and Technology	4
(c) Emergency Procedures	5
2.2 Race Outline and Event Information	5
(a) Race Description	5
(b) Proposed Race Course	6
(c) Contact Information	6
(d) Personnel Listing	6
(e) Estimated Event Timeline	6
(f) Emergency Protocol	6
(g) Event Audit	6
3 Course Design and Management	7
3.1 Introduction	7
3.2 Definitions	7
3.3 Permits, Notification and Documentation	7
3.4 Hazard Identification and Prevention	8
3.5 Access and Checkpoint Planning	8
3.6 Public Roadways	9
3.7 Communications	9
4 Emergency Response Prevention	9
4.1 Introduction	9
4.2 Informing the Public Before The Race of Risks and Proficiency Required	9
4.3 Special testing Requirements	10
4.4 Pre-Race Briefing	10
4.5 Signed Waiver	10
4.6 Communication / Signal Devices – During The Race	10
Part 2 – Athletic Disciplines	11
5 Coasteering	11
5.1 Introduction	11
5.2 Definition	11
5.3 Informing the Public Before The Race of Risks and Proficiency Required	12
5.4 Special Testing Requirements	12
5.5 Pre-Race Briefing	12
5.6 Signed Waiver	12
5.7 Communicating with Competitors During the Race	12
5.8 Dark Zones	13
5.9 Mandatory Coasteering Gear List (Sample)	13
6 Cycling	13
6.1 Introduction	13
6.2 Definition	13
6.3 Informing the Public Before The Race of Risks and Proficiency Required	13
6.4 Special Testing Requirements	14
6.5 Pre-Race Briefing	14
6.6 Signed Waiver	14

6.7 Communicating with Vehicular Traffic During the Race	15
6.8 Route Directions.....	15
6.9 Mandatory Cycling Gear List (Sample)	15
7 Horseback Riding	16
7.1 Introduction	16
7.2 Definition	16
7.3 Informing the Public Before The Race of Risks and Proficiency Required	16
7.4 Special Testing Requirement.....	16
7.5 Pre-Race Briefing	17
7.6 Signed Waiver	17
7.7 Veterinarian Stations	17
7.8 Mandatory Horseback Riding Gear List (Sample)	17
8 Mountaineering and Alpine Travel.....	17
8.1 Definition	17
8.2 Considerations for Race Directors.....	18
9 Ropes.....	19
9.1 Definition	19
9.2 Rigging Requirements.....	19
(a) General Requirements	19
(b) Specific Rigging Requirements	19
9.3 Operational Guidelines.....	21
9.4 Rescue Guidelines	21
9.5 Protective Equipment	22
9.6 Staffing	22
9.7 Weather	23
10 Scootering.....	23
10.1 Introduction	23
10.2 Definition	24
10.3 Informing the Public Before The Race of Risks and Proficiency Required	24
10.4 Potential Hazards.....	24
10.5 Communicating with Vehicular Traffic During the Race	24
10.6 Mandatory Gear.....	24
11 Trekking	25
11.1 Introduction	25
11.2 Definition	25
11.3 Informing the Public Before The Race of Risks and Proficiency Required	25
11.4 Potential Hazards.....	25
11.5 Navigation Testing	26
11.6 Mandatory Gear.....	26
12 Water Sports	27
12.1 Introduction	28
12.2 Definitions.....	28
12.3 Informing the Public Before The Race of Risks and Proficiency Required	28
12.4 Mandatory Gear.....	29
Appendixes.....	30
Appendix A: Course Design and Management Checklist	30
Appendix B: Emergency Response Prevention Checklist.....	30
Appendix C: Coaststeering Checklist	33
Appendix D: Cycling Checklist.....	34
Appendix E: Horseback Riding Checklist.....	35
Appendix F: Scootering Checklist.....	36
Appendix G: Trekking Checklist.....	37
Appendix H: Water Sports Checklist	38

Part 1 – Event Planning

1 Introduction

1.1 About the Canadian Adventure Racing Association

Incorporated in 2003, the goal of the Canadian Adventure Racing Association is to help ensure the sustainability of the sport in Canada through the establishment of national safety guidelines, an environmental charter, and continued advocacy for the sport at both the provincial and national level.

1.2 Scope

These guidelines provide the minimum requirements for the safe conduct of adventure races. These guidelines do not specify the requirements for every conceivable activity or environmental condition. The onus is on all race organizers to ensure that they undertake a thorough Risk Assessment prior to activities to ensure that additional requirements are considered and if required undertaken.

1.3 Purpose

- (a) Adventure racing involves risks and hazards, most of which can be eliminated with thorough planning, and detailed communication. Well run races will:
 - (i) Contribute to the safety of participants and the public,
 - (ii) Assist in the smooth running of the race and
 - (iii) Add to the enjoyment of the participants
- (b) The purpose of these guidelines is to promote safe, well-run and enjoyable adventure races. These guidelines play an important role in fulfilling the Canadian Adventure Racing Association's goal to pursue high standards of safety in the sport. These Guidelines:
 - (i) Provide details on managing participants before, during, and after a race
 - (ii) Establish minimum guidelines for different disciplines involved in adventure racing (e.g. orienteering, cycling, etc.)

1.4 Definitions

- (a) **Adventure Racing:** any “multi-sport” event requiring competitors (teams or individuals) to navigate a wilderness, or urban race course, marked by check points (CPs) from a designated starting point to a designated finishing point. The race route may or may not be provided to competitors in advance of the start. The duration of the event may range from several hours to multiple days.
- (b) **Association or CARA:** The Canadian Adventure Racing Association

- (c) **Check Point (CP):** A check point is a manned or unmanned location on a race course designated by UTM (Universal Transverse Mercator) grid coordinates which must be visited by a racer during the event
- (d) **Dark Zones:** An area prohibiting racer travel between dusk and dawn
- (e) **EMS:** Emergency Medical Services
- (f) **Race Organizer(s):** A person or persons responsible for running a given event. This person is the ultimate decision maker before, during, and after the event.
- (g) **Racer:** an individual who is competing in a given event and has completed all necessary waivers and documents required by CARA and the race director. A racer also has the necessary skills to participate in an event, and is able to demonstrate these skills to the appropriate standard prior to competing.
- (h) **Remote location:** A region where there is infrequent contact with high volume roadways, homes, or town centers for competitors
- (i) **Transition Area:** A manned checkpoint where competitors are required to switch sporting disciplines

2 Promoters

2.1 Risk Management

The risk management process is directly applied to the management of safety risks associated with planning an adventure race and must be undertaken prior to each race occurring.

CARA recommends that all race directors develop an emergency management plan that allows them to establish a programmed response to incidents that reduce the consequences should such incidents occur.

An Emergency Management Plan should consider:

(a) Chain of Command

The proper identification of the person a racer, race volunteer, or staff member should communicate with or report to in the event of an emergency response.

(b) Communication Systems and Technology

Numerous communication devices are available to assist in communicating an emergency response.

When a volunteer, or staff member is activating EMS, the following items should be covered:

- (i) Communication and contact details
- (ii) Escape route and location information
- (iii) Participant list
- (iv) Medical forms and patient details
- (v) Transport details

(c) Emergency Procedures

- (i) Emergency procedures must be documented prior to the start of an event and will be implemented in the event of:
 1. Serious injury or fatality
 2. Serious threats to personal safety from high risk environmental conditions (e.g. tornado)
 3. Lost racers
- (ii) Such procedures should include:
 4. Priority of tasks: immediate, second, third
 5. Roles and responsibilities
 6. Exit routes, emergency and evacuation procedures
 7. Injury
 8. Lost racers
 9. Contact details for base camp
 10. Contact details for police, search and rescue, and medical services in the area
 11. Communication modes and protocols
 12. Location management
 13. Vehicular access, boat access, and helicopter access
 14. Identification of nearest medical facilities
 15. Identification of natural hazards and appropriate response (lightning, flooding, high winds)
 16. Post incident management: contact of insurer, legal procedures, post incident trauma counseling

2.2 Race Outline and Event Information

(a) Race Description

A detailed description of the race should be created by the race organizer to be used internally for reference and planning purposes. It is recommended that this occur 6 weeks prior to the event start date. Details to be covered include type of race (non-stop, stage, other), a description of terrain to be covered (urban, wilderness with access, remote wilderness, other), and sporting disciplines to be included in the race (cycling, orienteering, swimming, paddling, rope work, horseback riding, other). All high-risk areas must be highlighted (e.g. river crossings, animal danger, other). A proposed risk management plan should also be included.

(b) Proposed Racecourse

The entire racecourse including any variations or optional sections should be planned at least 6 weeks in advance, in order to allow for the necessary time to get land use permission, etc. Maps should be provided to both race participants and race staff and volunteers. Independently verified UTM grid coordinates numbered in order of CP/TA on original topographic maps should indicate the course. CP/TA points should correspond to real features on the map (hill top, valley, road intersection, etc.). It is also recommended that the organization create a written document describing the proposed race route to provide additional detail to the map. Race organizers may occasionally need to use alternative maps for races (e.g. road maps for an urban race course). The accuracy of these types of maps should be verified by the race organization.

(c) Contact Information

Race organizers should prepare and have available a document for other interested parties (host location, EMS, etc.) accurate contact information. This contact information should indicate the name of the organization, the primary contact, and their affiliation with said organization. The document should also include where the race organizers can be reached pre-event (i.e. head office), immediate pre-event (on site accommodations), and during the event (to the best of their abilities). Pre-event contact information should include mailing address(es), email, fax, and telephone.

(d) Personnel Listing

An accurate list of employees and event volunteers should be made available for EMS prior to the start of the event. This list must indicate the location on course of personnel, whether or not they are in contact via radio, and the level of first-aid knowledge possessed by each individual.

(e) Estimated Event Timeline

A detailed event timeline should be created prior to the event date and verified by independent “running” of the course. This document should cover the estimated winning time, stage lengths, as well as the maximum duration of the race (i.e. 8 hours, 36 hours, 8 days).

(f) Emergency Protocol

A safety plan must be in place involving search and rescue individuals, volunteers, employees, and local EMS. This plan must identify potential access/evacuation points in the event of an emergency.

(g) Event Audit

A trained CARA representative may be on hand to:

- (a) Preview sections of the race course
- (b) Test communication systems

- (c) Review emergency response plan
- (d) Evaluate skill testing
- (e) Monitor the race to ensure compliance with these Guidelines

3 Course Design and Management

3.1 Introduction

The purpose of this section is to provide general guidelines that should be considered by all race directors. Not all of the following items are necessarily required for each race and the Race Director should review the guidelines to determine what measures are appropriate for their type and level of event. Please refer to the attached worksheet in Appendix A. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel. This is guideline for minimum safety requirements and the Race Director is encouraged to use any resources available to increase the level of safety at the event.

3.2 Definitions

1. Course design and management is defined as the manner in which a racecourse is set up, documented, permitted, and staffed. It includes several considerations based on varying levels of event.
2. Race Administration is defined as any staff or volunteers who are overseeing the race.

3.3 Permits, Notification and Documentation

A permit must be obtained, if necessary, from the appropriate government jurisdictions and/or private landowners in the area of the course. Government agencies may include, but are not limited to, any of the following:

- Sustainable Resources Development/Forestry Service
- Parks Canada/Parks and Protected Areas
- Coast Guard/Navigable Waterways Protection
- Municipal Districts and Counties.

This allows local officials to be prepared for the event and potential emergencies. These agencies should also be allowed to express any concerns regarding the race. In certain instances, it should be common courtesy to ask the creator(s) of a trail to be used.

Local Police/RCMP and EMS must be notified of the race and be fully apprised of race details several weeks in advance of the course. Again, this allows local authorities to prepare to help the race director in the event of emergency. They may choose to have additional staff during the time of the race.

Along with detailed maps and a course outline, a document showing distances and expected times between all staffed points on the course should be available at every

checkpoint and transition area. This is to assist in tracking racers and alerting Race Administration as to potential problems with racers. It will also aid race directors in planning resources accordingly.

3.4 Hazard Identification and Prevention

The racecourse must be thoroughly scouted prior to the event to ensure that the race administration is aware of potential hazards. It is also important to seek out local knowledge, maps and guidebooks to help understand any hazards that might not be readily apparent. Areas where there is a likelihood of encounters between racers and other area users must be identified (i.e.: popular dirt bike/quad trails, forestry equipment). The race director must understand what the likely nature of this encounter will be. The course must not go through areas that put the racers in high-risk situations such as cliffs, waterfalls, rockslides, or water that is difficult to navigate or contains numerous obstacles. If necessary, written instructions, signage and/or flagging will be used to steer racers away from hazards. If it is deemed that the race must travel through such an area, sufficient warning must be given to racers so that they can make informed route choices. Any area where there may be catastrophic injuries, such as a rope section or scramble, must be staffed with safety personnel at all times.

Ropes sites must be selected based on several criteria:

- Free from loose rock and debris
- Accessibility for safety crews and staging
- Suitable anchor points for rope rigging

A qualified ropes technician must inspect the site and be aware of potential hazards. See **Section 8 - Ropes** for complete details on rope safety. If a rope crosses a body of water, it must be high enough to not endanger boaters.

All water crossing are the purview of the Navigable Waterways Protection branch of the Canadian Coast Guard and a permit must be obtained to establish such a crossing.

3.5 Access and Checkpoint Planning

Race administration and safety staff must have reasonable access to all areas of the race. An access plan for all areas should be created (i.e.: Are quads necessary to rescue racers? Is helicopter standby necessary?). At any given point on the course, a safety technician must be able to plan an appropriate route to reach teams in need of assistance. On remote sections, possible escape routes for the racers must be identified.

Checkpoints and transition areas must be frequent enough that racers have the opportunity to refresh gear, report emergencies and exit the race. As a general guideline, these areas should be no farther apart than 10% of the total course distance (i.e.: approximately 3.5 hours in a 36 hour race). Races with solo competitors should have more frequent checkpoints. Checkpoint or transition area staff should not leave their position until all racers have left the next check-in area. Racers may return to their last

known point seeking help. If it is not possible to leave staff at these locations, racers must be notified that the checkpoint/transition staff will be pulled after they leave.

There must be road access to all transition areas. Checkpoints may be remote or road accessible. If a checkpoint is remote, Race Administration staffing the location must be prepared for extended periods of stay.

3.6 Public Roadways

Any components of the race that cross or enter public roadways are under the purview of Provincial or Municipal Transportation Departments. At any significant road crossing (i.e.: highway or major road), Race Administration must be present to direct racer movements. Racers will not be allowed to enter or cross roadways until clear.

If racers must travel on a major roadway, “Caution – Race in Progress” or other signs must be placed 500m from either end of the section to warn drivers. Racers traveling on a road for any period must stay to the shoulder and obey all traffic laws.

3.7 Communications

There must be radio contact between Race Administration along the entire course. Dead zones may be eliminated by radio relay between checkpoints or other areas staffed by Race Administration. If more than one checkpoint in a row are not staffed (i.e.: a Rogaining section), it is advisable to have some method of communication either with the racers or at the checkpoint. It is advisable for racers to carry radios when traveling at night.

Whenever possible, communications should be tested prior to the race. If it is not possible, as a minimum, Race Directors should discuss coverage and potential dead zones with the radio or service provider. Whenever possible, a repeater should be in use to boost radio coverage.

4 Emergency Response Prevention

4.1 Introduction

The purpose of this section is to provide written descriptions of the various emergency response measures and requirements that should be considered by each race director for each event. Not all of the following items are required necessarily for each race. The race director should review the emergency response requirements for each race and determine what measures are applicable and appropriate for their type and level of race. Please refer to the attached worksheet in Appendix B. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel.

4.2 Informing the Public Before The Race of Risks and Proficiency Required

All race directors must adequately inform participants of the risks and dangers inherent to each specific racecourse well in advance of the event start. Competitors must also be

made aware of the level of proficiency required for each of the sporting disciplines included in the event. Recommended methods of informing the public prior to the racecourse include postings on the event website, emails to persons requesting information, updated brochures, phone calls, mail, etc.

Some of the potential risks that each Race Director may be responsible for communicating include areas of high risk (e.g. animal danger, plant danger, air temperature, water temperature, areas of swift current, tall cliffs, caves, weather patterns, out of bound areas, etc).

4.3 Special Testing Requirements

If the racecourse design requires a certain level of proficiency, where testing is deemed necessary, the Race Director shall inform all participants well ahead of time the testing procedures and testing skills to be verified during a pre-race check-in. Sample testing forms shall be made available on the website and mailed/faxed to each team. All testing certificates shall be made available at the earliest convenience as well. Examples of possible skills testing requirements include but are not limited to the following:

- i) Navigation
- ii) Flat water paddling and rescue
- iii) Swift water paddling and rescue
- iv) Swimming
- v) Ropes skills descending, ascending, traversing
- vi) Rafting
- vii) Sailing
- viii) Etc

4.4 Pre-Race Briefing

All Race Directors shall re-emphasize all potential hazards and risks to all participants including staff, volunteers, racers, media, etc during a pre-race briefing. This should be done in a manner that permits all participants to easily hear all instructions. A pre-race briefing outside in the pouring rain may be poorly attended and not listened to. Be aware of this.

4.5 Signed Waiver

If the hazards are considerable, it may be worthwhile having the captains of each team to distribute waivers to the team. It would be the captain's responsibility after the pre-race briefing to ensure that each team clearly understands all the hazards and signs a waiver or document stating that each team member has been told of these hazards and risks and are willing to accept them.

4.6 Communication / Signal Devices – During The Race

During the race, all staff members on course should be able to be in communication with the race director or race headquarters should an emergency arise.

Also, during events where competitors are travelling in remote locations all teams must be provided a device, which would allow communication with race organizers in the event of an emergency. The following are examples of communication devices:

- Satellite Phone
- Emergency Radio
- FRS Radio

Teams, regardless of the remoteness of the racecourse, must carry emergency signaling devices. These devices are used to help signal rescuers in the event of an emergency. Examples of signaling devices include:

- Emergency Beacon
- Whistle
- Mirror
- Launching Flares
- Smoke Flares
- GPS Unit (tracking system, e.g. *Competitio*)

Each Race Director shall determine the requirements of each race. It is also imperative that all communication devices are accompanied with all the necessary phone numbers and instructions for use.

Part 2 – Athletic Disciplines

5 Coasteering

5.1 Introduction

The purpose of this section is to provide written descriptions of the potential risks involved with coasteering, and list requirements that should be considered by each race director. Not all of the following items are required necessarily for each race. The race director should review the coasteering requirements for each race and determine what measures are applicable and appropriate for their type and level of race. Please refer to the attached worksheet in Appendix C. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel.

5.2 Definition

The term “coasteering” refers to travel along a coastal section of a large body of water or an ocean. Travel involves traversing along sandy surfaces, rocky surfaces, cliff-faces (with occasional cliff-jumping), and swimming.

5.3 Informing The Public Before The Race of Risks and Proficiency Required

All race directors must adequately inform participants of the risks and dangers inherent to each specific racecourse well in advance of the event start. Competitors must also be made aware of the level of proficiency required for the coasteering leg(s) and the nature of the terrain to be crossed. Recommended methods of informing the public prior to the racecourse include handouts describing the risks and environmental factors at check-in, postings on the event website, emails to persons requesting information, updated brochures, phone calls, mail, etc.

Some of the potential risks that each Race Director may be responsible for communicating include areas of high risk (e.g. strong current, tides, animal danger (e.g. Seal rookeries), plant danger (e.g. kelp), air temperature, water temperature, boat traffic, weather patterns, out of bound areas, etc).

5.4 Special Testing Requirements

If the racecourse design requires a certain level of proficiency, the Race Director shall inform all participants well ahead of time the testing procedures and testing skills to be verified during a pre-race check-in. Sample testing forms shall be made available on the website and mailed/faxed to each team. All testing certificates shall be made available at the earliest convenience as well. Examples of possible skill testing requirements for coasteering include but are not limited to the following:

- a) Swimming
- b) Ropes skills: descending, ascending, traversing

5.5 Pre-Race Briefing

All Race Directors shall re-emphasize all potential hazards and risks to all participants including staff, volunteers, racers, media, etc. during a pre-race briefing. This should be done in a manner that permits all participants to easily hear all instructions. A pre-race briefing outside in the pouring rain may be poorly attended and not listened to. Be aware of this. See 5.3, handout sheet at check-in describing risks, environmental factors, etc.

5.6 Signed Waiver

If the hazards are considerable, it may be worthwhile having the captains of each team to distribute waivers to the team. It would be the captain's responsibility after the pre-race briefing to ensure that each team clearly understands all the hazards and sign a waiver or document stating that each team member has been told of these hazards and risks and are willing to accept them.

5.7 Communicating with Competitors During the Race

If a portion of the coasteering section requires significant swimming race directors shall have a method of communication with racers in place (e.g. safety boat)

5.8 Dark Zones

Race directors may choose to close coastering sections from dusk to dawn if there is a greater risk to competitor safety by travelling while dark.

5.9 Mandatory Coasting Gear List (Sample)

The following list is an example of what a race director may require competitors to carry with them, or have access to during the coastering portion of the event

- i) Personal floatation device (see watercraft section for more details)
- ii) Swimming Fins
- iii) Swim paddles or hand-paddles
- iv) Wetsuit (thickness based on water temperature)
- v) Hard-soled shoes
- vi) Neoprene gloves
- vii) Neoprene hood
- viii) Waterproof distress flares
- ix) White strobe light
- x) Whistle
- xi) Dive knife/Lock-blade knife
- xii) Waterproof bag

6 Cycling

6.1 Introduction

The purpose of this section is to provide written descriptions of the potential risks involved with cycling, and list requirements that should be considered by each race director. Not all of the following items are required necessarily for each race. The race director should review the cycling requirements for each race and determine what measures are applicable and appropriate for their type and level of race. Please refer to the attached worksheet in Appendix D. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel.

6.2 Definition

The term “cycling” refers to the use of human propelled bicycles during an event. The bikes can be designed for usage on-road, off-road, or for hybrid use.

6.3 Informing The Public Before The Race of Risks and Proficiency Required

All race directors must adequately inform participants of the risks and dangers inherent to each specific racecourse well in advance of the event start. Competitors must also be made aware of the level of proficiency required for the cycling legs and the nature of the terrain to be ridden during the event. Recommended methods of informing the public

prior to the racecourse include postings on the event website, emails to persons requesting information, updated brochures, phone calls, mail, etc.

Some of the potential risks that each Race Director may be responsible for communicating include areas of high risk (e.g. animal danger, plant danger, air temperature, vehicle traffic, highly-technical trails, loose riding surfaces, weather patterns, out of bound areas, etc).

All Race Directors shall emphasize that all race participants must ride in accordance with the highway traffic act.

6.4 Special Testing Requirements

If the racecourse design requires that the competitor's bicycles meet a minimum standard of mechanical capability (i.e. are adequate for the event), the Race Director shall inform all participants well ahead of time the minimum standard to be verified during a pre-race check-in. Sample forms outlining the minimum standard of mechanical capability shall be made available on the website and mailed/faxed to each team. All testing certificates shall be made available at the earliest convenience as well. Examples of what may be verified as bicycle requirements include but are not limited to the following:

- a) Wheels: do not exhibit excessive signs of wear (e.g. "scalloped-rims", cracked rims)
- b) Tires: no cuts or regions of weakness, no excessive wear
- c) Brakes: front and rear brakes should be in working order, both brake pads should contain enough material to last the duration of the race
- d) Frames: should be devoid of cracks or damage that would compromise the integrity of the frame. Forks should also be examined for cracks and damage.
- e) Drivetrain: crank arms and bottom bracket should be secure
- f) Joints/points of attachment: all points of attachment should be properly tightened prior to the event (e.g. headset, quick release mechanism, etc.)
- g) Handlebars shall have bar-end plugs
- h) Tri bars: tri bars should be securely fastened to the bike.

6.5 Pre-Race Briefing

All Race Directors shall re-emphasize all potential hazards and risks to all participants including staff, volunteers, racers, media, etc. during a pre-race briefing. This should be done in a manner that permits all participants to easily hear all instructions. A pre-race briefing outside in the pouring rain may be poorly attended and not listened to. Be aware of this.

6.6 Signed Waiver

If the hazards are considerable, it is mandatory that the captains of each team distribute waivers to the team. These waivers must be signed and witnessed for each participant. It would be the captain's responsibility after the pre-race briefing to ensure that each team clearly understands all the hazards and sign a waiver or document stating that each team member has been told of these hazards and risks and are willing to accept them.

6.7 Communicating with Vehicular Traffic During the Race

If a (the) cycling leg of the racecourse utilizes roads with motor vehicle traffic, the race director shall take the appropriate precautions to warn both the racers and motor vehicle operators about each other's presence on the road. Road closure or usage permits may also be required. Motor vehicle operators may be warned by using a series of race-in-progress signs, or if in the case of private roads (e.g. logging roads), contacting the road owner (e.g. the lumber company(s)) in advance to educate them about the number of cyclists to be expected, and the date and duration that the racers will be on the road. Race directors shall request that any company drivers during this time period should be notified of this information.

If riders are going to be traveling on public roads, enforce the yellow line rule from road cycling: Riders have to stay on their side of the road and not cross over the yellow line into oncoming traffic. If they are caught doing so, the race organizer should issue a penalty. Race organizers should inform racers of such a penalty prior to the beginning of the race. Racers should also be reminded that they are to travel as far right on the road as is practicable.

6.8 Route Directions

Kilometer-based directions must be measured by vehicle to ensure accuracy prior to the event. It may be worthwhile to have a cycle computer calibration test during bike check-in (e.g. 100 m driven in the vehicle from which the kilometer readings were taken to be ridden and calibrated again prior to the race start to ensure accuracy).

6.9 Mandatory Cycling Gear List (Sample)

The following list is an example of what a race director may require competitors to carry with them, or have access to during the cycling portion of the event

- i) All athletes must wear CPSC and ASTM certified helmets (CPSC - The US Consumer Product Safety Commission's bike helmet standard is law in the U.S. for every cycling helmet made after 1999. CPSC is the benchmark standard. A CPSC sticker means the cycling helmet meets tough safety standards. ASTM - American Society of Testing and Materials) or equivalent.
- ii) Spare-inner tubes (2 minimum)
- iii) 5-10 glueless patches
- iv) Chain tool and replacement links
- v) Multi-tool
- vi) Allen key set
- vii) Spare rear-derailleur
- viii) Front mounted white light
- ix) Rear mounted red strobe light
- x) Spare tires (depending on terrain)
- xi) Hand-pump

- xii) CO₂ pump with replacement cartridges
- xiii) Spare brake-pads
- xiv) Bike lubricant
- xv) Spoke wrench
- xvi) Gear/bike cables
- xvii) Hydration pack
- xviii) Reflective vest or arm bands

7 Horseback Riding

7.1 Introduction

The purpose of this section is to provide written descriptions of the potential risks involved with horseback riding, and list requirements that should be considered by each race director. Not all of the following items are required necessarily for each race. The race director should review the horseback riding requirements for each race and determine what measures are applicable and appropriate for their type and level of race. Please refer to the attached worksheet in Appendix E. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel.

7.2 Definition

The term “horseback riding” refers to racers riding horses through (a) section(s) of a racecourse. This may be on- or off-trail.

7.3 Informing The Public Before The Race of Risks and Proficiency Required

All race directors must adequately inform participants of the risks and dangers inherent to each specific racecourse well in advance of the event start. Competitors must also be made aware of the level of proficiency required for the horseback leg(s), saddle types to be used, and the nature of the terrain to be crossed. Recommended methods of informing the public prior to the racecourse include postings on the event website, emails to persons requesting information, updated brochures, phone calls, mail, etc.

Some of the potential risks that each Race Director may be responsible for communicating include areas of high risk (e.g. steep-sided trails, water crossing, animal danger, plant danger, air temperature, vehicle traffic, weather patterns, out of bound areas, etc).

7.4 Special Testing Requirements

If the racecourse design requires a certain level of proficiency, the Race Director shall inform all participants well ahead of time the testing procedures and testing skills to be verified during a pre-race check-in. Sample testing forms shall be made available on the website and mailed/faxed to each team. All testing certificates shall be made available at

the earliest convenience as well. Examples of possible skill testing requirements for horseback riding include but are not limited to the following:

- a) Riding skills (trot, cantor, and gallop)
- b) Mounting skills
- c) Bridle, harness and saddling skills
- d) Basic knowledge of what to watch for with horses in case of injury, etc.

7.5 Pre-Race Briefing

All Race Directors shall re-emphasize all potential hazards and risks to all participants including staff, volunteers, racers, media, etc. during a pre-race briefing. This should be done in a manner that permits all participants to easily hear all instructions. A pre-race briefing outside in the pouring rain may be poorly attended and not listened to. Be aware of this.

7.6 Signed Waiver

If the hazards are considerable, it may be worthwhile having the captains of each team to distribute waivers to the team. It would be the captain's responsibility after the pre-race briefing to ensure that each team clearly understands all the hazards and sign a waiver or document stating that each team member has been told of these hazards and risks and are willing to accept them.

7.7 Veterinarian Stations

If the horseback portion of the race is of a significant length or duration, or if it travels through difficult terrain, the race director shall ensure that a veterinarian station exists during the leg in order to assess the wellness of the horses.

7.8 Mandatory Horseback Riding Gear List (Sample)

The following list is an example of what a race director may require competitors to carry with them, or have access to during the horseback portion of the event:

- i) Helmet (see bicycle or ropes)
- ii) Hard soled shoes
- iii) Leather palmed gloves

8 Mountaineering and Alpine Travel

8.1 Definition

All travel above the tree line in alpine settings is referred to as mountaineering. Mountaineering may involve rock, snow, or glacier trekking, travel on steep unstable slopes, rope work, etc.

8.2 Considerations for Race Directors

(i) All regular trekking standards apply in mountain legs

(ii) All fixed ropes fall under rope safety guidelines

(iii) Medical

1. Highly rugged terrain and the high altitude can lead to an increase in medical emergencies.
2. In high altitude races where athletes spend time above 9000ft, all EMS staff must be trained and prepared to deal with the various forms of altitude sickness.
3. Race organizers must be prepared to arrange for helicopter evacuation from the mountains and have a team on hand that is fully trained and practiced for evacuations such as these from mountain areas.
4. Athletes must be made aware of the symptoms of altitude sickness and how to prevent, detect early, and treat if necessary.
5. Race director should have trained EMS personnel stationed at least one checkpoint at altitude to assess team members as they pass through if deemed necessary.
6. Radio communication must be ensured along all of the reasonable routes that teams may decide to take during a leg along ridgelines and elevated points

(iv) Weather

1. In most mountain areas, new weather systems can develop rapidly and move in with little or no warning. Racers and race directors must be prepared for this.
2. Race directors must keep abreast of weather developments at all times before and during the race.
3. Race directors should consider keeping checkpoints closer together in mountain areas so that teams can be kept abreast of weather developments more often, and also to limit the chance of racers getting lost and spending longer than expected periods in mountain regions. All alpine checkpoints should be manned.
4. Race directors must have alternate routes planned in case of bad weather. Race staff stationed at possible start to alternate route must

be in constant communication with race director. Other reasons for alternate routes include:

- Late spring thaw,
 - Avalanche risk, or
 - Excessive thaws exposing loose rock, which has not had a chance to previously settle, as this can result in rock fall.
5. Creek crossings should be avoided at altitude as warm weather/morning thaw can quickly and significantly increase flow due to glacier/snow melt.

9 Ropes

9.1 Definition

The term “ropes” used within this document refers to specifically to the following: Tyrolean traverse, zip-lines, rappel, ascent, and fixed line ascent. These disciplines all require the competitors to be securely attached to a fixed rope. Travel may be vertical or near vertical (rappel, ascent, fixed-line ascent), or horizontal (Tyrolean traverse, zip-line).

9.2 Rigging Requirements

At no time does this set of guidelines substitute for the good judgment of the event organizers and race participants.

(a) General Requirements

- (i) All systems must pass a Static System Safety Factor (SSSF) of 15:1 in urban settings, 10:1 in any other settings.
- (ii) All Equipment used must be approved by one or more of the following: UIAA, CE, CSA and/or NFPA. Further to this, all of this equipment must meet SSSF as set out above
- (iii) All equipment must be used in accordance with the manufacturers recommended use guidelines
- (iv) All participants and event organizers shall comply with all local, provincial and federal regulations.

(b) Specific Rigging Requirements

(i) Anchors

- 1. The anchor system must always be redundant.
- 2. Anchor configuration will vary by region and certifications; however, they must still meet the SSSF.

3. The race director must submit descriptions of the anchors to be used to CARA for review prior to the start of the event.
4. All anchor systems in use must be common practice and recognized by the governing body in that region.

(ii) Edges and rock face

1. All points where a rope and or webbing comes in contact with the rock must be protected
2. Rope passing over a rock edge must be checked for wear after each usage
3. All loose objects must be removed from the cliff face prior to the participants use of this section
4. There are numerous acceptable ways to protect the rope from edges including but not limited to canvas, ABS pipe and manufactured edge protectors. Nylon objects are not to be used as edge protectors
5. All sharp edges that the anchor system contacts must be protected as well.

(iii) Hard gear requirements

1. All hard gear has to be in excellent working condition. Hard gear must be inspected as it is put into service on a rope element.
2. Any hard gear that is dropped and found to have been damaged in any form must be retired from service.

(iv) Rope requirements

1. Ropes must meet the SSSF
2. Must be nylon Kernmantle construction
3. Must be 10.5 mm in diameter or larger
4. Ropes must be designed for life support purposes
5. Static rope must be used at all times when a rappel, ascent, or highline is employed

6. If rock climbing is to be an event in the race, then climbing ropes (high stretch or dynamic ropes) must be used

9.3 Operational Guidelines

A certified climbing helmet, unless otherwise specified, must be worn at all times when a person is on the rope as outlined in **9.5 (a)**.

- (a) A belay must be available at all times for those rappel stations that do not require a belay for every person. This is required for races that do not ask for certifications in rope skills.
- (b) A qualified person who was not involved in the rigging of the system must inspect the system prior to use. It is acceptable that this qualified person come from the same crew if they were not involved in the rigging of the system.
- (c) All emergency situations must be evaluated, and rescue measures predetermined prior to use
- (d) Rigging methods and suggested operating procedures must be recorded and submitted to the race director previous to the use of the rope section
- (e) Proper fall restraint procedures must be followed at all times to avoid participants from falling over the edge as they approach the rope site in preparation for use
- (f) The race director will set out specific open and close times for the rope site before the race begins. Staffing will be coordinated appropriately to accommodate these times.
- (g) It is suggested that participants go through a skill testing session prior to the race so that the rope staff is familiar with strengths and weaknesses of each team
- (h) All participants are required to have a complete safety check by a qualified member of the ropes crew prior to them starting the ropes section

9.4 Rescue Guidelines

- (a) The designated rescue personnel must be able to accomplish a rescue within a reasonable time period of the rescue being requested
- (b) In the event of a rescue no new participants will proceed onto the rope section until the rescue is completed

- (c) Taking this into consideration the rigging must be done in an efficient manner as to allow this rescue to take place
- (d) A belay should be used at all times during rescue unless the leader of the rescue feels that it will:
 1. Threaten the safety the rescue crew,
 2. Threaten the life of the rescuee,
 3. Hinder the rescue effort or,
 4. Any combination of the above.
- (e) Staff must be trained and certified in rescue techniques that may be used during these events
- (f) All crews must have detailed plans submitted to the headquarters of the race how the system is rigged at each station. This must include plans of action that the crew will follow if a rescue situation should arise.
- (g) One crew member designated as the rescuer will be on standby at all times ready for a rescue when rope elements are in use

9.5 Personal Protective Equipment

- (a) Certified climbing helmets must be used at the rope sections whenever participants are required to rappel, ascend, or climb a vertical/near-vertical rock face, or there is a risk of an object (e.g. loose rock) dislodging. If there is no risk than bike helmets can be used. Bike helmets can also be used for rope activities such as tyrolean traverses, zip lines, rope-aided ascents/descends.
- (b) Harnesses must be in good working condition and must be used within the manufacturers recommendations. Harnesses should not be any more than 5 years old.
- (c) Gloves must be worn at all ropes sections when your hands come in contact with the rope. These gloves must protect the entire palm and full finger length with leather.
- (d) All hardware must be in good working order and free from significant wear.
- (e) All equipment must be used in accordance with the manufacturers recommended use guidelines

9.6 Staffing

- (a) Staff working at the rope site shall be qualified to work in that environment

- (b) All certifications of staff must be recorded and submitted to the race director previous to their involvement in the rope sections
- (c) Staff must not work longer than 12 hour shifts without break
- (d) Following a 12 hour work shift, a staff member must take an 8 hour break, unless another arranged agreement can be met between staff members and the race organizers
- (e) There will be a designated rescuer on standby at all times
- (f) There will be staff located at both ends of each rope section at all times
- (g) It is suggested that, at any point within the rope section where participants may encounter difficulties or are required to change their rigging, staff must be present, unless participants are certified and/or have passed a test that proves they have these skills. All tests should be recorded and submitted previous to the start of the race.

9.7 Weather

- (a) The race director and the rope staff must monitor weather at all times. Plans will be documented and put into place previous to the use of the rope section.
- (b) It is recommended that the rope site is shutdown for a period of 20 minutes when lightning is spotted all persons in the vicinity must retreat to lower ground to wait. Every time lightning is spotted the 20-minute wait is refreshed.
- (c) It is recommended that the ropes site director monitor wind conditions closely. If at any time the participants appear to be threatened by the wind the rope site will be shutdown until wind speeds drop to an acceptable level.
- (d) It is recommended that only “dry ropes” be used when ice conditions are present.

10 Scootering

10.1 Introduction

The purpose of this section is to provide written descriptions of the potential risks involved with scootering, and list requirements that should be considered by each race director. Not all of the following items are required necessarily for each race. The race director should review the emergency response requirements for each race and determine what measures are applicable and appropriate for their type and level of race. Please

refer to the attached worksheet in Appendix F. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel.

10.2 Definition

Scotering involves standing on a platform suspended between two wheels, and propelling yourself with one leg. Scooters may have bicycle wheels, and if so, should have bicycle type “V” brakes, but are not allowed to contain any type of pedaling mechanism.

10.3 Informing The Public Before The Race of Risks and Proficiency Required

Participants should be provided with the following information pertaining to Scootering legs:

- a) Estimated length
- b) Condition of road/trail surfaces they’ll encounter during the race

10.4 Potential Hazards

The following potential hazards should be avoided on inline skating legs:

- a) Travel on busy roads or highways without adequate shoulders
- b) Travel in busy parks, or on busy sidewalks

10.5 Communicating with Vehicular Traffic During the Race

If a (the) scootering leg utilizes roads with motor vehicle traffic, the race director shall take the appropriate precautions to warn both the racers and motor vehicle operators about each other’s presence on the road. Motor vehicle operators may be warned by using a series of signs, or if in the case of private roads (e.g. logging roads), contacting the road owner (e.g. the lumber company(s)) in advance to educate them about the number of scooterers to be expected, and the date and duration that the racers will be on the road. Race directors shall request that any company drivers during this time period should be notified of this information.

10.6 Mandatory Gear

The following items should be considered for inclusion as mandatory gear for scootering legs:

- i) All athletes must wear CPSC and ASTM certified helmets (CPSC - The US Consumer Product Safety Commission's bike helmet standard is law in the U.S. for every cycling helmet made after 1999. CPSC is the benchmark standard. A CPSC sticker means the cycling helmet meets tough safety standards. ASTM - American Society of Testing and Materials) or equivalent.
- ii) Flashing red strobe
- iii) Headlamp

- iv) Spare tube
- v) Tire levers
- vi) Pump
- vii) Spoke wrench
- viii) Multi-tool

11 Trekking

11.1 Introduction

The purpose of this section is to provide written descriptions of the potential risks involved with trekking, and list requirements that should be considered by each race director. Not all of the following items are required necessarily for each race. The race director should review the trekking requirements for each race and determine what measures are applicable and appropriate for their type and level of race. Please refer to the attached worksheet in Appendix G. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel.

11.2 Definition

The term “trekking” refers to any travel on foot. This could include, but is not limited to: road running, trail running, hiking, foot orienteering and off-trail (wilderness) trekking.

11.3 Informing The Public Before The Race of Risks and Proficiency Required

Participants should be provided with the following information pertaining to trekking legs:

- a) Estimated length
- b) Type of terrain under foot
- c) Navigation skill requirements, if any

11.4 Potential Hazards

Consideration should be given to the following potential hazards on trekking legs:

- a) Water crossings
 - With special considerations for:
 - High levels of precipitation before, or during the event
 - Dam release
 - Fast-moving sections
 - Water temperature
- b) Steep terrain
- c) Loose rock
- d) Avalanche danger
- e) Animal hazards
- f) Plant hazards
- g) Inclement weather

11.5 Navigation Testing

A navigation test should be employed during registration if any off-trail/wilderness trekking will occur in the race that is further than 2km from an emergency access point, or primary road/trail.

Navigation Testing should cover the following topics:

- a) UTM (Universal Transverse Mercator) grid (plotting and identifying points on a map)
- b) Determining the age of the map
- c) Map to Field Bearings
- d) Field to Map Bearings
- e) Triangulation
- f) Calculating distances
- g) Declination
- h) Route Selection
- i) Contour Line/Feature Identification

11.6 Mandatory Gear

The following items should be considered for inclusion as mandatory gear for trekking legs:

Personal

- i) Flashlight/Headlamp (extra batteries)
- ii) Emergency blanket (bag/bivvy)
- iii) Whistle
- iv) Knife (fixed or locking blade)
- v) Hat (for warmth not baseball cap)
- vi) Gloves (full finger, for warmth)
- vii) 2L water capacity
- viii) Long sleeve synthetic shirt
- ix) Long pants (tights)
- x) Windproof/Water resistant jacket
- xi) Windproof/Waterproof jacket (Gore-Tex type)
- xii) Waterproof pants
- xiii) Helmet
- xiv) PFD (Type III, minimum 15.5lbs of buoyancy)
- xv) River Knife (attached to PFD)
- xvi) Emergency Strobe (Waterproof with 5km visibility)
- xvii) Personal First Aid Kit (Contents depends on race)
- xviii) Sleeping Bag (temperature rating depends on conditions)
- xix) Sleeping Pad (3/4 length minimum)
- xx) Packraft (paddles (hand or collapsible))
- xxi) Medical Insurance (International competitors)
- xxii) Long sleeve fleece top (minimum 100wt.)

- xxiii) Long fleece pants (minimum 100wt.)
- xxiv) Balaclava (neoprene face shield)
- xxv) Insulated winter jacket
- xxvi) Winter Gloves/Mitts
- xxvii) Chemical hand/foot warmers
- xxviii) Waterproof winter overmitts
- xxix) Mountaineering boots
- xxx) Avalanche Beacon
- xxxi) Avalanche probe
- xxxii) Winter shovel
- xxxiii) Snowshoes
- xxxiv) Gaiters
- xxxv) Wetsuit

Team

- i) Compass (2 per team)
- ii) Altimeter (1 per team)
- iii) Red distress flares (Launching)(2)
- iv) Smoke Signals/Smoke Flares (2)
- v) Survival Mirror
- vi) Tarp minimum dimensions (8'X10')
- vii) Team First Aid Kit (Contents depends on race)
- viii) 100ml Sunscreen
- ix) Shovel (human waste)
- x) Lighter or Waterproof Matches
- xi) Dry Bag
- xii) Maps (provided)
- xiii) Dry bag for maps
- xiv) Pen/Pencil
- xv) FRS Radio (instructions)
- xvi) Emergency Radio (instructions)
- xvii) GPS Unit (instructions)
- xviii) Satellite Phone (instructions)
- xix) Emergency Beacon (instructions)
- xx) 4 person Tent (3 season vs. 4 season, capable of withstanding 100kph wind)
- xxi) Rope 21m or throw bag (minimum 430kg breaking strength)
- xxii) Climbing Rope (50m, min. diameter 8.5mm)
- xxiii) Stove (adequate to operate at given temperatures & altitudes)
- xxiv) Fuel for stove
- xxv) Container to heat water (i.e. metal cup)
- xxvi) Winter Shovel

12 Water Sports

The following section describes safety considerations for water sports activities in adventure racing.

12.1 Introduction

The purpose of this section is to provide written descriptions of the potential risks involved with activities on water. These activities include, but are not limited to:

- Canoeing
- Kayaking
- Rafting
- Pack-rafting
- Swimming
- Sailing

The section also lists requirements that should be considered by each race director. Not all the following items are required necessarily for each race. The race director should assess the water sports requirements for each race and determine what measures are applicable and appropriate for their type and level of race and the type of water and weather likely to be encountered. Please refer to the attached worksheet in Appendix H. The goal of the worksheet is to provide an easy to work with checklist, which will help ensure that all necessary measures are put in place to provide adequate safety for all participants, volunteers, and race personnel.

12.2 Definition

Water sports require racers to paddle/sail/float vessels during the course of a race. Travel may occur in streams, rivers, ponds, lakes, and oceans.

12.3 Informing The Public Before The Race of Risks and Proficiency Required

All race directors must adequately inform participants of the risks and dangers inherent to each specific racecourse well in advance of the event start. Competitors must also be made aware of the level of proficiency required for the water sports and the nature of the terrain to be ridden during the event. Recommended methods of informing the public prior to the racecourse include postings on the event website, emails to persons requesting information, updated brochures, phone calls, mail, etc.

Some of the potential risks that each Race Director may be responsible for communicating include:

- Adverse weather conditions
- Technical paddling - Class III or higher whitewater rapids
- Cold water conditions
- Out of bound areas

All Race Directors shall emphasize

“that any participant who encounters another participant or event personnel whose personal safety is at risk must stop to render assistance”.

Assistance could mean simply evaluating the situation or taking immediate emergency action. If there is no immediate threat or no immediate actions that can be taken by the participant, it is acceptable for those participants to continue to the next CP/TA whereby

they must contact the proper authorities. In situations where a participant's life is in jeopardy due to injury, illness, or other ailment, teams must stop to render whatever assistance they can manage. The race director should take the stop time into consideration and deduct this from the total time of the team providing aid.

12.4 Mandatory Gear

Race directors must consider making appropriate paddling gear mandatory based on discipline, activity, length, technical difficulty, expected air and water temperatures and expected rescue times should an incident occur (e.g. wetsuits for cold weather).

At all times, race directors and competitors must comply with the safety requirements of Transport Canada's Office of Boating Safety.

The following list is an example of what a race director may require competitors to carry with them, or have access to during the water sports portion of the event

- All participants must wear properly fitting personal floatation devices (PFDs) with 15.5 lbs buoyancy and approved by Department of Transport Canada, Canadian Coast Guard, Department of Fisheries and Oceans, or for international racers, 15.5 lbs buoyancy PFD approved for use in that country during on-water activities.
- For activities on **Class II or higher white water** or in coastal surf zones, all participants are to wear properly fitting paddling helmets.
- For water sports activities at night, both participants and craft should be outfitted with an appropriate light source to aid in rescues. Special caution should be used if participants will be paddling moving water at during dark periods.
- All participants shall have a whistle readily available for use on their life jacket.
- As per Coast Guard regulations 15 m or greater in length of throw rope (buoyant heaving line)
- All competitors shall have a fixed blade or locking knife readily available for usage due to the fact that usage of ropes in moving water can be a safety hazard.

APPENDIX A
COURSE DESIGN AND MANAGEMENT CHECKLIST

1. Permit obtained from appropriate jurisdiction? List all that apply.

N/A

2. Local Police/RCMP and EMS have been contacted and given course details?

Yes _____ No _____

3. A document is available at each CP and TA showing distances and expected times for racers?

Yes (please attach) _____ No _____

4. All sections of the race have been thoroughly scouted (cross out any that do not apply)?

Hiking

Biking

Paddling

Ropes

Other _____

Other _____

Other _____

Other _____

5. Safety personnel have been contracted?

EMS

Ropes

Other _____

Other _____

6. Note any areas of potential hazard (attach sheet if necessary):

7. Racers have been apprised of hazardous areas?

Yes _____ No _____ N/A _____

8. Safety Personnel are staffing potentially hazardous locations?

Yes _____ No _____ N/A _____

9. Safety Personnel have inspected ropes site (if applicable)?
Yes_____ No_____ N/A_____
10. Do racers cross or travel on roadways?
Yes_____ No_____
- If Yes, has adequate signage and staffing been prepared to monitor these areas?
Yes_____ No_____
11. Is there an emergency access plan?
Yes (please attach)_____ No_____
12. Note any areas of restricted access and potential escape route (attach sheet if necessary):
-
-
-
-
13. All persons staffing points on the racecourse have been informed of adequate gear and duration of stay expectations?
Yes_____ No_____
14. Have communications been tested or the radio provider consulted regarding the course?
Yes_____ No_____
15. Have communication dead zones been identified and addressed?
Yes_____ No_____
16. Is a repeater in use?
Yes_____ No_____

APPENDIX B
EMERGENCY RESPONSE PREVENTION CHECKLIST

1. Has the public been informed of the risks before the race started?
Yes _____ No _____

2. Has the public been informed of the skills and proficiency level required for the race beforehand?
Yes _____ No _____

3. By what means did you inform the public pre-race of items 1 and 2 above?

 Website _____
 Emails _____
 Fax _____
 Mail _____
 Telephone _____

4. What skills will be tested at check-in?

Navigation	_____	Forms Required?	_____
Flat Water	_____	Forms Required?	_____
Swift Water	_____	Forms Required?	_____
Swimming	_____	Forms Required?	_____
Ropes	_____	Forms Required?	_____
Other	_____	Forms Required?	_____

5. Will you have a pre-race briefing? Yes _____ No _____

6. Did you have the pre-race briefing? Yes _____ No _____

7. Will you be using a waiver form? Yes _____ No _____

8. What emergency signaling device will you be using?

 Emergency beacon _____
 Whistle _____
 Mirror _____
 Smoke or Launching Flares _____
 GPS Unit _____

9. Is your racecourse remote? Yes _____ No _____
 If so, what communications device will you be using?

 Satellite phone _____
 Emergency Radio _____
 FRS Radio _____

APPENDIX C
COASTEERING CHECKLIST

1. Have the participants been informed of the risks before the race started?
Yes_____ No_____

2. Have the participants been informed of the skills and proficiency level required for the race beforehand?
Yes_____ No_____

3. Do sections of the coasteering leg involve extended swimming legs (>1000 m) without any land access?
Yes_____ No_____

If Yes, will there be (a) safety boat(s) on the water to monitor competitors?
Yes_____ No_____

4. By what means did you inform the participants pre-race of items 1 and 2 above?

Website _____
Emails _____
Fax _____
Mail _____
Telephone _____
Other _____

5. Was the swimming ability of all competitors assessed during check-in?
 Yes _____ Forms Required? _____
 No _____

6. Did you reiterate the potential hazards during the coasteering portion of the race during the pre-race briefing? Yes _____ No _____

7. Will you be using a waiver form? Yes_____ No_____

8. Is the emergency medical response team equipped and trained to deal with potential injuries to competitors resulting during the coasteering leg (e.g. contusions, hypothermia)?
Yes_____ No_____

9. Do any dark zones affect the coasteering leg? Yes_____ No_____

10. If Yes, are there an adequate number of suitable sites to safely overnight along the coasteering leg? Yes_____ No_____

APPENDIX D
CYCLING CHECKLIST

1. Have the participants been informed of the risks before the race started?
Yes_____ No_____

2. Have the participants been informed of the skills and proficiency level required for the race beforehand?
Yes_____ No_____

3. Do sections of the cycling leg use private roads?
Yes_____ No_____

If Yes, have the owners of the property been notified of the date, and the duration that cyclists will be using the roads?
Yes_____ No_____

4. By what means did you inform the participants pre-race of items 1 and 2 above?

Website _____

Emails _____

Fax _____

Mail _____

Telephone _____

Other _____

5. Was the mechanical capability of competitor bicycles assessed during check-in?
 Yes _____ Forms Required? _____
 No _____

6. Did you reiterate the potential hazards during the cycling portion of the race during the pre-race briefing? Yes _____ No _____

7. Have all participants signed the waiver form? Yes_____ No_____

8. Will you be using road signage to alert drivers of cyclists on the road?
Yes_____ No_____

APPENDIX E
HORSEBACK RIDING CHECKLIST

1. Have the participants been informed of the risks before the race started?
Yes_____ No_____

2. Have the participants been informed of the skills and proficiency level required for the race beforehand?
Yes_____ No_____

3. Is the horseback riding leg of significant length or does it cover difficult terrain?
Yes_____ No_____

If Yes, is there a veterinary station during or at the completion of the horseback leg?
Yes_____ No_____

4. By what means did you inform the participants pre-race of items 1 and 2 above?

Website _____
Emails _____
Fax _____
Mail _____
Telephone _____
Other _____

5. Were the horseback riding skills of competitors assessed during check-in?
 Yes _____ Forms Required? _____
 No _____

6. Did you reiterate the potential hazards during the horseback portion of the race during the pre-race briefing? Yes _____ No _____

7. Will you be using a waiver form? Yes_____ No_____

8. Is the emergency medical staff equipped to deal with riding related injuries amongst competitors (e.g. falls)?
Yes_____ No_____

APPENDIX F
SCOOTERING CHECKLIST

1. Have participants been notified of the total scootering distance and the type of road/trail surfaces they could expect to encounter?
Yes _____ No _____

2. Are any of the following hazards present on the inline skating leg?

Travel on busy roads or highways without adequate shoulders _____
Travel in busy parks, or on busy sidewalks _____

3. If you have checked any of the hazards listed in question 2, what will you do to mitigate those risks?

APPENDIX G
TREKKING CHECKLIST

1. Have participants been notified of the total trekking distance, the type of terrain they could expect to encounter, and the level of navigation skill they should possess?
Yes_____ No_____

2. Could any of the following hazards be present on the trekking leg?

Dangerous Water Crossings	_____
Steep Terrain	_____
Loose Rock	_____
Avalanche Danger	_____
Animal Hazards	_____
Plant Hazards	_____
Inclement Weather	_____

3. If you checked any of the hazards listed in question 2, will you be addressing these in your pre-race briefing?
Yes_____ No_____

4. Will teams have to pass a navigation test during registration?
Yes_____ No_____

5. If you answered yes to question 4 will you inform race participants what skills they must possess prior to the event?

6. Will there be a mandatory pre-race gear check for all teams to complete?
Yes_____ No_____

7. Will there be mandatory gear checks on-course for all teams to complete?
Yes_____ No_____

APPENDIX H
WATERSPORTS CHECKLIST

1. Have the participants been warned about the water sports included in this event, water conditions, water temperature, and other inherent risks prior to the start of the race?
Yes_____ No_____

2. Have the competitors been informed of the skills and proficiency level required for the water sport component of the race beforehand?
Yes_____ No_____

3. By what means did you inform the participant's pre-race of items 1 and 2 above?

Website _____
Emails _____
Fax _____
Mail _____
Telephone _____

4. Are any of the following hazards present on the water sports sections?

_____ Strong current
_____ Whitewater (indicate class I – IV)
_____ Dams/weir crossing
_____ Cold water
_____ Large expanses of open water
_____ High cliffs lining water body
_____ Animal danger
_____ Natural dangers (tree branches [strainers], icebergs, shoals)
_____ High water vessel traffic
_____ Other (please note)

5. If you checked off any of the above hazards, will you be addressing these in the pre-race briefing?
Yes_____ No_____

5. What water sport skills will be tested at check-in?

Flat Water	_____	Forms Required?	_____
Swift Water	_____	Forms Required?	_____
Swimming	_____	Forms Required?	_____
Rescue	_____	Forms Required?	_____
Other	_____	Forms Required?	_____

6. Will there be safety vessels patrolling the water sport sections?
Yes_____ No_____

5. Will you have a pre-race briefing? Yes _____ No _____
6. Did you have the pre-race briefing? Yes _____ No _____
7. Will you be using a waiver form? Yes _____ No _____
8. What emergency signaling device will teams be using?
- Emergency beacon _____
- Whistle _____
- Mirror _____
- Smoke or Launching Flares _____
- GPS Unit _____
9. Is there medical staff equipped to deal with the types of emergencies common amongst competitors involved in water sports (e.g. hypothermia)?
Yes_____ No_____