

SQUAMISH



PADDLING

C L U B

Safety Manual

September 2018

Safety Manual Change Log

September 2018 – Updated to include references to Canoe Kayak Canada Code of Safety (Sprint Discipline) including:

- Inclusion of requirements to complete Parq & You, Participant Profile and cold water waivers
- Expanding on Risks & Dangers

Introduction

Safety is not just NOT having accidents...it is a SYSTEM of daily practices, it is an attitude, and it is a mind frame we race and train in, and IT IS SIMPLE:

- If it is not safe...stop, do not do it.
- It is always easier to stop and say NO than to explain later to parents, to the police, to a judge, or to your best friends why you decided to continue doing something that was clearly, IN HINDSIGHT, not safe

This manual incorporates parts of the Canadian Outrigger Racing Association ("CORA") Manual, the Canoe Kayak Canada Code of Safety (Sprint Discipline) and makes reference to sections of that manual where additional information can be sought on topics. As a CORA and Canoe Kayak BC member club, the Squamish Paddling Club is mandated to adhere to both organisations manuals and practices.

The full CORA Safety manual can be obtained at:

<http://canadianoutrigger.com/wp-content/uploads/2011/10/MasterCORASafetyManualNov2009.pdf>

The Canoe Kayak Canada Code of Safety (Sprint Discipline)

at:http://canoekayak.ca/wp-content/uploads/2018/05/Revised-CKC-Sprint-Code-of-Safety-May-11_2018-Final1.pdf

In addition to the CORA manual the Safe Boating Guide is also used for input on legislated safety equipment. The guide is available at:

<http://www.tc.gc.ca/media/documents/marinesafety/TP-511e.pdf>

Definitions

OC1 single person outrigger canoe

OC2 two person outrigger canoe

OC6 six person outrigger canoe

Participant any person taking part in competitive or recreational paddlesport events or programs and related activities offered by SPC.

Paddlesport any activity using a craft on water moved by a paddle, including but not limited to outrigger canoeing, surfski paddling, stand up paddleboarding, kayaking, and canoeing.

SPC Squamish Paddling Club

The Blind Channel the Mamquam Blind Channel running from the Adventure centre (bottom) to Howe Sound (Upper End).

The Sound Howe Sound

Safety of Participants

- Clubs must ensure that potential participants have sufficient swimming ability prior to their participation in water-related programs. In addition to the CKC required minimum standard of being able to swim at the level of the Canadian Red Cross "Swim Kids Level 6" ([http://canoekayak.ca/wp-content/uploads/2014/11/AppendixACanadian Red Cross Swim Kids Level 6.pdf](http://canoekayak.ca/wp-content/uploads/2014/11/AppendixACanadian%20Red%20Cross%20Swim%20Kids%20Level%206.pdf)), all participants must be able to tread water for at least 20 minutes, and swim for a minimum distance of 200m.
- All participants must wear a Government of Canada approved Personal Flotation Device ("PFD") in the manner it was intended while engaged in all on-water activity.
- All participants are required to sign either a Cold Water Adult Waiver Form or a Cold Water Youth Informed Consent Form.
- All new participants should also complete the "Participant Profile" before engaging in Club programs and update it as membership is renewed.
- All new participants at Clubs should complete the "Par-Q & You Plus" questionnaire before engaging in Club programs ([http://canoekayak.ca/wp-content/uploads/2014/11/AppendixH ParQ You beginner participants.pdf](http://canoekayak.ca/wp-content/uploads/2014/11/AppendixH%20ParQ%20You%20beginner%20participants.pdf))
- Participants in OC1, OC2, Surfski or Stand Up Paddleboard should be attached to their craft by a leashes when on water.

Awareness of Risks and Waiver

- All participants should be aware of the risks and dangers involved in practicing paddlesports. These risks and dangers include:
 - a) The hazards particular to the activity(ies);
 - b) Executing strenuous and demanding physical techniques;
 - c) Water hazards, terrain obstacles, waves, unstable surfaces and extreme weather conditions;
 - d) Vigorous physical exertion, strenuous cardiovascular workouts and rapid movements;
 - e) Exerting and stretching various muscle groups;
 - f) Failure to properly use any piece of equipment or from the mechanical failure of any piece of equipment;
 - g) Contact, colliding, falling or being struck by other participants or equipment;
 - h) Blunt force trauma, serious soft tissue injuries, broken bones, or spinal cord injuries which may render the participant permanently paralyzed;
 - i) Surface abrasions, entanglements, entrapments or flying objects and debris; and

- j) Drowning including but not limited to, equipment failure or entanglement, falling out boat/watercraft into the water or being knocked unconscious in the water; and
 - k) Cold water conditions resulting in hypothermia and the potential risks and hazards above.
- In order for a person of less than 18 years of age to participate in a training program or competition, one of their parents, or legal guardian, shall sign a Waiver form stating that they are aware of the risks of practicing paddlesports (competitive or recreational).
 - In order for a person aged 18 years of age or older to participate in a training program or competition, they shall sign a form stating that they are aware of the risks of practicing paddlesports (competitive or recreational).

Responsibilities of the Participant

- Participants must observe all safety rules that may affect their own safety or the safety of fellow participants.
- Participants shall wear protective clothing appropriate for the conditions and their activity. Refer Clothing requirements section of this manual.
- The participant needs to:
 - a) inform the Coach of any change in their health which may affect their ability to safely participate in Club programs, or which affects their well-being, or may endanger the safety of the other participants;
 - b) inform the Coach that they are using or under the effect of any medicinal drug;
 - c) refrain from drinking alcoholic beverages or using drugs, which may affect their ability to train or compete in a safe manner;
 - d) be aware of hypothermia and other water-related dangers, and know how to take the appropriate measures and precautions.
- Participants must take responsibility for their own safety.

Hydration & Fuel

Inadequate hydration or fuelling of the body results in diminished performance, dehydration and hypoglycemia (low blood sugar levels), which can in turn lead to the onset of other complications such as hypothermia (extreme cooling of the body) as the body's fuel has been depleted through exercise and can no longer provide enough heat to keep the body warm. Our primary concern as paddlers is supplementary hydration and fuel during paddling.

Hydration

All participants are to be hydrated before paddling and should take a minimum of 500 ml – 1 litre of water per hour of paddling (rates of hydration for vigorous exercise in moderate air temperatures is approximately 750 ml – 1000 ml per hour). Where sessions may exceed 60-90 minutes, sports drink containing electrolytes (sodium and potassium) simple sugars and carbohydrates may be of benefit.

In extreme heat, regular hydration during exercise is crucial. Stress to the paddlers that thirst is not a good indicator of your fluid needs, especially in young paddlers. By the time you are thirsty you are already dehydrated.

A hands-free hydration system is strongly recommended.

Fuel

In the case of sessions over 1 hours' duration, a sports energy bar may be of benefit. Rates of consumption should be in the order of 50 - 60g of carbohydrates per hour (0.8-1.0g of carbohydrates per kilogram body weight).

Carbohydrates used should be replaced (energy/fuel) as soon after exercise as possible and certainly within a 2-hour period.

Hypothermia and Hyperthermia

Whilst this manual is not intended to cover first aid, Hypothermia and Hyperthermia are two of the most important conditions which can be planned for in advance and should be taken into consideration prior to all paddling.

Hypothermia

The human body loses more heat when wholly or partially immersed in water than it does while only exposed to the air. Thermal loss in water is 2 to 5 times greater than in the air. Most experts in immersion, hypothermia and cold water near drowning/drowning define cold water as temperatures below 20°C (i.e. Howe Sound year round).

Hypothermia is defined as a drop in body temperature below the normal level. At this lower temperature, a person's muscle and mental functions are affected. A person exposed to cold water, and becoming hypothermic, can exhibit certain progressive signs and symptoms. They are as follows:

- Shivering and slurred speech, conscious but withdrawn at the early stage
- Slow and weak pulse, slow respiration, lacks co-ordination, lacks muscle strength, irrational, confused and sleepy at intermediate stage; and finally

- Weak, irregular or absent pulse or respiration, loss of consciousness at final stage.

Wearing regular street clothing, being immersed in water 10°C for a period of 20 minutes or more, will cause severe heat loss. Prevention of hypothermia lies with understanding its potential and wearing insulating layers to protect the body.

The primary concern must always be dressing for immersion, all paddlers need concern themselves with the water temperature as in the event of a capsize or equipment failure or sinking, paddlers left to the mercy of cold waters will surely perish if immersed for too long, no matter how warm the air may be.

Drowning can be the eventual consequence of hypothermia as the body and mind give in to the cooling effects, so as a “shut” down is reached. The head loses some 25% of the body’s heat and importance of keeping it above water needs to be stressed in cases of immersion in cold water.

If you end up in the water, do everything you can to conserve body heat.

- Wear your PFD or lifejacket. Valuable energy will be lost keeping your head above water if you are not wearing it.
- Climb onto your boat to get as much of your body out of the water.
- If alone and your boat sinks, adopt a “heat escape lessening position” (H.E.L.P.) by crossing arms tightly against the chest and by drawing the knees up close to the chest.
- If with others and your boat sinks, “huddle” with other persons by getting the sides of everyone’s chest close together with arms around the mid to lower back and legs intertwined.

Wearing of PFD’s in this instance can extend survival time and a huddled up position also helps to retain heat (conditions permitting) as will keeping within a close group.

Hypothermic victims once in the hands of rescuers, must not move around, as to retain the warmer core blood near the major organs and not encourage it away to the extremities. External heat must be introduced immediately (hot water baths, fires etc.) wet clothing removed (in a sheltered area) and replaced with dry and many insulating layers to prevent heat loss. Treat patients gently to avoid cardiac problems.

After Drop Immersion victims will experience continued core temperature drop even after removal from cold water and it is directly proportional to the rate at which the body was cooled in relation to the rewarming process. Resting the patient is crucial to prevent cold blood from the extremities rushing to the core.

Insufficient Fuel Food intake, in combination with vigorous high-energy demands, can lead to hypoglycemia (low blood sugar) and consequently an

inability of the body to warm itself and therefore hypothermia. This is a dangerous condition and needs explanation to your paddlers to ensure they fuel up and dress up in cold weather. Insulation blankets, glucose tablets and high-energy food need to be ingested to help reverse the situation should it be encountered.

Hyperthermia

Overheating of the body's core temperature and associated with vigorous, prolonged activity in high temperatures and often associated with dehydration.

The importance of hydration during exercise cannot be overstated, especially given that competitive and downwind paddling is a high energy, physically demanding sport, practiced increasingly all year round.

Extremes of high heat and humidity can often be an unavoidable reality, which while posing potential harm more especially during endurance races and long training sessions, hydration before, during the after, along with adequate clothing, especially head wear can prevent the onset of hyperthermia.

Heat Fatigue Associated with cramping, fatigue and sometimes fainting. Cramps can be severe within the larger muscle groups of the upper and lower back in the case of paddling. Treated with electrolyte drinks, rest, ice and massage. Other symptoms include headaches.

Heat Exhaustion This is a more serious condition and is associated with profuse sweating, dizziness, headache, nausea, mental confusion, and rapid pulse. Requires immediate care to cool body and replace fluids.

Heat Stroke This is an emergency situation requiring medical attention. Symptoms include mental confusion, disorientation, loss of consciousness, and hot dry skin due to impairment of sweating mechanism. Treatment can include fluid replacement via saline drip, ice packs, fluid intake, and rest with feet elevated.

Clothing Options for a Range of Climates

The need for clothing appropriate for the relative air and water temperatures that provides effective protection from the elements fall into the area of "risk management" as inappropriate clothing can be a hindrance and a danger.

While the air temperature may not pose any threat, extremes of cold water has the potential to kill in only a short time, therefore paddlers need to assess this risk and dress appropriately. This scenario presents the most difficult in terms of choice; dressing for warm air temperatures in the knowledge that the water temperature is low enough to pose a danger if immersion occurs for too great a time.

Torso The internal organs around the area of the kidneys are prone to cold and must be protected when either the air or water temperature or both pose a danger. Other areas of the body including the arms, chest and entire torso must, of course, be covered. Care must be taken to avoid restricting movement to the arms and shoulders first and foremost as this presents a danger in itself.

Cold winds and air temperatures, dictate that the body's extremities need to be protected, notably toes and fingers. Discomfort leads to lack of focus and concentration, which leads to poor performance.

Polypropylene Light weight polypropylene tops, either long or short sleeved, purchased at outdoor adventure shops, provide adequate protection on cool days, worn next to the skin.

Neoprene Vests Lightweight (2mm) neoprene vests (sleeveless) worn next to the skin provides excellent insulation to the back, chest and stomach. Combined with a polypropylene top, this adds additional insulation. To reduce wind chill, a thin lightweight nylon jacket can be worn over the top to provide a final barrier. The advantage of layers is that they can be removed to suit the comfort of the paddler as they or the air warms.

Neoprene Shortie Short sleeved, half leg designed wetsuit of 2mm thickness. Ensure that it is designed for surfers and has ample freedom of movement under the arms.

Neoprene Shorts Lightweight (2mm) neoprene shorts provide warmth in the groin region and some comfort against the seat. These can be worn in combination with a neoprene vest.

Steamer Tops Specialist canoeing and kayaking shops in cool to cold areas often stock specialist white water clothing. Sealed neoprene/rubber neck, wrist and waist gussets provide effective seals against water, while a waterproof material designed to be a loose fit covers the arms and body.

Waist/Legs Neoprene shorts or in very cold conditions, a full-length style wetsuit (long john style – sleeveless).

Cotton Lycra Shorts, Leggings and tops Cotton Lycra is worn more often by women than men. Its fashionable look and array of colors makes it an attractive paddle material. Provides no insulation, protection from UV rays and has the advantage of being very flexible allowing the paddler freedom of movement.

Nylon Spray Jackets Lightweight nylon jackets can provide effective wind barriers. Keep the pockets zipped up and hoods rolled up as in the water these can be a hindrance.

Board Shorts Available at any surf shop, these are practical in warm

water/air locations and are hard wearing. Quick dry material recommended.

Rash Shirt Short and long sleeved rash shirts as worn by surfers, often made from nylon or cotton lycra or similar material, are popular for keeping some marginal insulation on cooler days. They provide excellent freedom of movement and some protection from UV rays.

Hats 25% of body heat is lost through the head. In times of cold weather and high wind chills, a beanie style hat is a definite recommendation. While in times of extremes of heat and glare, a peaked cap, reduces glare in the eyes and keeps direct sun off the head and face.

Gloves Gloves are worn to either protect the hands against blisters and abrasion or to protect from the effects of cold (sometimes as protection from sunburn). Gloves can be either of a light leather material as used by dinghy sailors, or neoprene or cotton Lycra. It is essential that the gloves are very flexible and that the paddle can be felt through the material. Gloves can be a great hindrance if not selected properly. Specialist paddling gloves can be purchased at better canoe and kayak stores.

Booties and Wet Shoes Neoprene boots to keep feet warm and to protect against sharp objects such as oysters, coral rock, glass etc. Also provides some degree of non-slip anchorage in the canoe.

Neoprene styled footwear: with appropriate non-slip soles are essential to cold climate paddling. Numb feet are highly uncomfortable, tend to lack traction and are prone to pain at the slightest knock and detracts the paddlers' attention away from the action of paddling.

In addition, for larger canoes, **canoe spray covers** should be worn in the case of cold climate and weather conditions. Body heat of the paddlers, becomes trapped inside the hull, warming the lower limbs and reducing wind chill, immersion and excess water along the hull floor.

Site Water Safety

With the exception of whitewater paddling the bulk of the club's paddling is on Howe Sound. Typical summer weather patterns are an outflow in the morning which switches to an inflow around noon and builds. This inflow makes Squamish a great windsports location and makes for great afternoon downwinding in paddling. It is also one of the biggest risks to inexperienced paddlers.

In winter the prevailing wind is an outflow.

Mamquam Blind Channel

Launching & Landing

The boathouse (Corner of Loggers Lane & Main Street) is the primary meetup and often launch and landing site (for smaller craft). The tidal range is around 16ft which result in continuous erosion of the beach paddled from. Paddlers should at all times scan the beach before launching and landing as new obstacles (often metal) may have been exposed by erosion since their previous use of the site.

The beach is not suitable for launching larger boats, these are walked to the public boat slip next to the Squamish Yacht Club. Care should be taken during lower tides as the surface of the slip is slippery. Water or protective footwear must be worn all times when launching paddlecraft from this 'beach'.

Water Traffic

The Blind Channel is home to a few Marinas. Yachts and other vessels with a larger draught are limited to the deeper channel of water on the starboard side (when heading out to sea) of the Channel near Nexxen / Newport Beach due to the large sandbank exposed by lower tides. [Collision regulations](#) give them right of way regardless of them being under power as they are restricted by their draught.

There are still some active log sorts in the upper end of the Blind Channel. When logs are moved around bark and smaller pieces of wood are occasionally left floating in the channel. The booms are pushed around and towed out to the Sound by motorised boats which have limited manoeuvrability when they have a full boom in tow.

Squamish Terminals is an active 2 berth break-bulk terminal. If any prolonged activity is planned in front of the Terminal, the [Vessel schedule](#) should be consulted to ensure there is no planned arrival or departure.

When winds pick up in summer the upper end of Howe Sound becomes a practise and playground for kiteboarders, windsurfers and small boat sailors alike. When a race is underway the course is clearly demarcated with bouys and should be avoided. When paddling downwind into the Blind Channel the route typically passes beyond the kiteboarding area, however many of the schools use the fringe of the kiteboarding area to run their courses, this often means that the people with the least control of their kite are in the area being paddled in. Kiteboarders and windsurfers launch from the Spit and Nexxen / Newport Beach and typically sail in an area from Nexxen / Newport beach to the sea cliffs (beyond the spit and mouth of the Squamish River and approximately from the tip of the spit and the beach at Nexxen / Newport to 500m offshore.

Tides

Lower tides drain the bottom end of the Blind Channel making it impossible to paddle under the Sea to Sky Highway bridge. Large sandbanks also become exposed at lower tides at the Spit from the Starboard channel marker to the Sea Cliffs and at the Log Sort from the Mouth of the blind channel to Darryl Bay.

Current & Wind

At the head of Howe Sound prevailing winds typically dominate any currents, the exception is the mouth of the Squamish River, where the current of the river is dominant.

Fixed Obstructions

Logs stuck in mud and sand are some of the more dangerous fixed obstacles as they are temporarily fixed and may not have been present at the last high tide. In addition to that there are two bridges heading down the blind channel and a number of pilings in the channel which should be avoided.

Wave Action

There is no significant wave action in Squamish, wind swell will come with the inflow or outflow.

Float Plan

A float plan should be filled every time you paddle. At a minimum it should include your expected departure and arrival times and locations, the names of the people paddling with you and the craft in your group. It may be as informal as telling the details to a partner or spouse or an online form, for example [this one by AdventureSmart](#).

Safety Equipment

The paddle craft used in the club fall into two categories in the Safe Boating guide: *Sealed-Hull and Sit-on-Top Kayaks* and *Canoes, Kayaks, Rowboats, Rowing Shells and Other Human-Powered Boats*. The requirements table is pasted below for quick reference:

PERSONAL LIFESAVING APPLIANCES	VISUAL SIGNALS	VESSEL SAFETY EQUIPMENT	NAVIGATION EQUIPMENT	FIRE FIGHTING EQUIPMENT
1. One (1) lifejacket or PFD for each person on board* 2. One (1) reboarding device (See Note 1) 3. One (1) buoyant heaving line at least 15 m (49'3") long	If boat is over 6 m 4. One (1) watertight flashlight 5. Six (6) flares of type A, B or C (See Note 2)	6. One (1) bailer OR One manual bilge pump (See Note 3) OR Bilge-pumping arrangements	7. One (1) sound-signalling device or appliance 8. Navigation lights (See Note 4) 9. One (1) magnetic compass (See Note 5) 10. One (1) radar reflector (See Note 6)	None
*If everyone on board is wearing a lifejacket or a PFD of appropriate size, you are only required to carry: - 1) a sound-signalling device; and - 2) a watertight flashlight if the boat is used after sunset or before sunrise or in periods of restricted visibility.				

Note 1 – Re-boarding Device - A re-boarding device is only required if the vertical height that a person must climb to re-board the boat from the water (freeboard) is over 0.5 m (1'8").

Note 2 – Flares Flares are not required for a boat that:

- is operating on a river, canal or lake in which it can never be more than one (1) nautical mile (1.852 km) from shore; or
- has no sleeping quarters and is engaged in an official competition or in final preparation for an official competition.

Note 3 – Bailer and Manual Bilge Pump A bailer or manual bilge pump is not required for a boat that cannot hold enough water to make it capsize or a boat that has watertight compartments that are sealed and not readily accessible.

Note 4 – Navigation Lights Navigation lights are only required if you operate the boat after sunset, before sunrise or in periods of restricted visibility (fog, falling snow, etc.).

Note 5 – Magnetic Compass A magnetic compass is not required if the boat is 8 m (26'3") or less and you operate it within sight of navigation marks.

Note 6 – Radar Reflector Radar reflectors are required for boats under 20 m (65'7") and boats built of mostly non-metallic materials. A radar reflector is not required if:

- the boat is used in limited traffic conditions, daylight and favourable environmental conditions, and where having a radar reflector is not essential to the boat's safety; or
- the small size of the boat or its operation away from radar navigation makes it impossible to install or use a radar reflector.

In addition to the legal requirements above, a cellphone in a waterproof pouch is strongly recommended for every paddler – at a minimum there must be one in each group of paddlers.