

# Fraser Valley Dragon Boat Club

## Water Safety Preparedness and Prevention

### Forward

This manual is intended to provide essential information for anyone participating in Fraser Valley Dragon Boat Club (FVDBC) water sport activities such as dragon boat and outrigger canoe paddling. Reading the manual should provide our members with an understanding of the FVDBC safety rules and guidelines.

Measuring 60km/37mi in length, Harrison is the largest lake in south-western British Columbia and the only major lake that lies only a few feet above sea level. This is a glacier-fed lake and can be very cold. The lake contains two islands: Echo Island, which is visible from the lakefront, and Long Island where the water plunges a depth of over 274m/900ft. Harrison flows into the Harrison River which is a navigable tributary of the Fraser River. Weather and water conditions can change rapidly on Harrison Lake. These safety procedures have been developed to help our club members with water safety preparedness and prevention.

Safety is everyone's responsibility. If you are aware of an issue or concern that may affect your safety and your fellow paddlers, make it known prior to departing the dock.

All crew members should be in agreement before going out on the water. If even one person is not sure about the safety of going out then all members should discuss the issue being brought forward.

### WHEN IN DOUBT...DON'T GO OUT!

The following Boat Safety Rules are to be followed by all dragon boat teams, outrigger crews and individuals when using Fraser Valley Dragon Boat Club boats and equipment.

All members must know FVDBC safety procedures and how to use the safety equipment. Everyone using club equipment must be a current club member or signed a club waiver.

## **Safety Equipment:**

FVDBC requires the following equipment to be on board boats before leaving the dock

- Bailers
- Throw Bag
- Marine VHF radio
- Cell Phone in a waterproof bag
- Noise Making Device - suggest pealess whistle on pfd's
- First Aid Kit
- Medical/emergency contact information for team members
- Extra paddle(s)
- Extra PFD(s)

## **Responsibilities:**

One person must be in charge at all times - this may change but must be pre-determined and clear to all crew members. The steersperson is usually in charge leaving and returning to the dock - and then may pass the command of the boat to the caller/coach once underway. If so, when returning to the dock the caller/coach should clearly give command back to the steersperson so the crew understand they need to be listening for his commands. At any time the steersperson may take over command of the crew. Crews must know who is in charge in various situations, especially if the steersperson is incapacitated.

## Rules applicable to all FVDBC boats:

1. Only individuals that are at least 14 years old, have signed a FVDBC waiver, and are FVDBC members may use FVDBC boats and equipment unless otherwise authorized by the FVDBC Board. In addition, paddlers must be listed on a team/crew roster or have paid open practice fees to use FVDBC boats and equipment. Exception: New paddlers are permitted three team/crew or open practices after submitting a signed waiver and prior to joining FVDBC.
2. Non-paddling passengers are not permitted on FVDBC boats unless otherwise authorized by the FVDBC Board.
3. There must be communication capability for boat crews while on the water (a fully charged cell phone in a waterproof case or a marine VHF radio).
4. In the event of an emergency, remain with the boat and call for assistance immediately:
  - a. Marine radio (VHF) Channels 16 or 70 for emergency use only
  - b. Cell phone – use \*16 to contact the Canadian Coast Guard Marine Services Rescue Coordination Centre or dial 911.
  - c. All such incidents must also be reported to the FVDBC Board by email or phone as soon as possible after the end of the practice during which the incident occurred.
5. To the extent not stated within these rules, provincial and federal laws and regulations including, but not limited to, Transport Canada Small Vessel Regulations must be followed.
6. Be sure that you and everyone in your boat understand the basic commands of the boat. The steersperson and/or captain are in charge of your boat at all times and his/her commands must be obeyed to ensure everyone's safety.
7. Appropriately sized PFD's must be properly worn at all times by paddlers.
8. Dragon boats must stay close to the shoreline. The only exception is when the dragon boat is accompanied by a coach boat.
9. Attendance must be taken. The person in charge of the practice should know exactly how many paddlers are in the boat.

10. Use the 'buddy' system. Each paddler is paired up with a seat partner and will look for that seat partner in an emergency.
11. Clothing appropriate to the weather must be worn when paddling. Paddlers should have a change of clothes.
12. Paddling is not permitted when there is a small craft warning, if there is any thunder or lightening, extreme winds (notable by whitecaps) or if fog limits the ability to safely navigate or be seen by other watercraft.
13. All paddlers should be familiar with the procedures for dealing with a swamped or flipped dragon boat or outrigger canoe.
14. Paddling after dark is restricted to the shoreline between the FVDBC marina and the Harrison Hotel. If a boat will be out in dim light, boat lights should be attached.
15. Transport Canada requires the following equipment to be on board: bailers, throw bag, at least two sound signaling devices (whistles). It is also a good idea to have an extra paddle in the boat. Ensure this safety equipment is on board and is in good condition.
16. Before leaving the dock, identify crew issues - non-swimmers and anxious paddlers must be identified to ensure they are given the help they need in case of emergency. Identify any health issues - crew to know this before leaving the dock. For example if a paddler has a need for an epi-pen their seatmates need to know where it is.

## Rules specific to Dragon Boats:

1. Each individual must wear an approved, adjusted, and fastened, personal flotation device (PFD) at all times. Inflatable PFDs are not permitted.
2. A non-paddling steersperson must be in position during practice.
3. The coach, caller and/or steersperson are in charge during practice.
4. There shall be at least twelve experienced paddlers, no more than twenty-two paddlers, aboard the dragon boat. There shall be a maximum of 2 paddlers per seat row.
5. Paddlers must notify the coach, captain or steersperson of any physical conditions that may affect their ability to react or respond in an emergency. A coach may decline to seat paddlers who, in their sole opinion, may not have the ability to perform the duties associated with paddling.
6. The caller and the steersperson must be on the lookout for dangerous situations at all times, be aware of hazards, and avoid hazardous places.
7. If paddlers are changing positions on the boat during a practice, all other paddlers must obey the "brace the boat" command from the coach, caller or steersperson.
8. One extra paddle and PFD should be carried on board during practice.
9. Crew should NEVER GRAB A MOVING DOCK --- a finger could get caught and would be broken with 1000+ pounds of weight of boat and crew. Always hold the boat with paddles then grab the dock after the boat has stopped.
10. One person is in charge to load/unload the boat - crew to listen to instructions. Keep boat balanced while loading/unloading
11. Keep dock clear of gear. Paddlers putting gear on dock creates tripping hazards.
12. Report any incidents and repairs required. Incidents are used as learning opportunities - what training is needed, how could it an incident be prevented - and was equipment damaged and in need of repair - help to prevent future accidents.

## **Rules specific to Outrigger Canoes:**

1. Individuals must wear an approved, adjusted, and fastened, personal flotation device (PFD) at all times unless otherwise authorized by the FVDBC Board.
2. The steersperson is the captain (and decision-maker) during practice.
3. The steersperson must carry the FVDBC-provided safety kit at all times while on the water.
4. The steersperson must review capsize (huli) recovery procedures and basic safety rules with the crew before launching the canoe at each practice.
5. Review seat numbers and duties in case of huli.
6. In addition to the steersperson, there must be at least four paddlers (three with prior paddling experience), and no more than six individuals total, aboard the canoe unless otherwise authorized by the FVDBC Board.
7. No more than two paddlers under the age of 18 are allowed on an OC-6 outrigger canoe at any time unless otherwise authorized by the FVDBC Board.
8. Paddlers must notify the steersperson of any physical conditions that may affect their ability to react or respond in an emergency. A steersperson may decline to seat a paddler who, in the steersperson's sole opinion, may not have the ability to perform his/her designated tasks.
9. All paddlers must be on the lookout for dangerous situations at all times. The steersperson must also be aware of water hazards and avoid hazardous places.
10. If paddlers are changing positions on the canoe during a practice, all other paddlers must lean left, regardless of whether this command is specifically given by the steersperson.

## **Boat Commands commonly issued by caller, coach or steersperson:**

Bumpers in/out! – bring bumpers (fenders) in or out of the boat for docking or coming alongside another boat,

Paddles up! – Paddles raised, ready to move into the first stroke together.

Take it away! – Start paddling.

Let it run / ride! – Stop paddling, paddles placed across the lap, let the boat glide forward on its own momentum

Hold the boat! – Paddlers plunge blade vertically into the water, perpendicular to the gunwale and brace with their body to stop the boat moving forward or back.

Hold Hard! – Paddlers drive their paddle down into the water doing a back stroke and then hold firm vertically in the water.

Brace the Boat (Stabilize) – Paddles out flat and just below the water's surface to stabilize the boat. (used when crew members are moving in the boat or if a very big wave/swell is about to hit)

Back paddle! – Slowly paddle in reverse to back the boat up.

Walk it back! – Leaving the dock by having one side back the boat down dock by hands.

Draw left! Or Draw right! – Paddlers reach out sideways to pull water towards and down under the side of the boat. (if stopped, opposite side should lean slightly out the other way for stability)

Hold for Drift, aka "Stealth"! - Paddles are in the water with the blades running parallel to the boat and the shaft is held against the gunwale to prevent the boat from drifting sideways (used mostly at the start line before a race).

**Other important terminology:**

Port – Left side of the boat

Starboard – Right side of the boat

Bow – Front of the boat

Aft or Stern – Back of the boat

Spring lines – Long lines attached to bow and stern

**Guidelines for Weather/Currents:**

FVDBC reserves the right to cancel all practices in the event of severe weather conditions.

Wind: If winds are forecast or present above 30 kph / 20 knots (the level of a small craft warning), FVDBC boats are not permitted to go out.

Lightning: If there is lightning forecast or present in the immediate area, FVDBC boats are not allowed to go out and boats that are on the water must return to the dock. If the boat is a significant distance from the club moorage, the steersperson should evaluate whether there is another closer dock where the boat may be safely docked, and the team/crew may take cover, until the storm passes.

Fog/Reduced Visibility: A minimum of 150 yards of unrestricted visibility must be available for FVDBC boats to go out. The dragon boat or outrigger steersperson is responsible for determining whether there is enough visibility to safely conduct a practice. Extra care should be exercised in the presence of any fog or similar reduced visibility conditions.

Extreme Temperatures: Practice at the discretion of the caller or steersperson.

## **Emergency Situations**

Cold water can quickly become a problem so act promptly.

### **Swamping:**

A dragon boat or outrigger canoe may be swamped in high waves or if mishandled. When a boat swamps the paddlers will likely still be seated and the boat may have excessive water inside. If the water is below the gunnels have as many mid-boat paddlers as possible bail as quickly as possible while the others continue to paddle. Remember if swamping was caused by rough water, more water may come in the boat with the next wave so you will want to get as much freeboard as possible as quickly as possible. If the gunnels are below the water you must get some paddlers out of the boat to raise the gunnels before you can bail. Those paddlers can get back in as soon as there is more freeboard - do not leave paddlers in the cold water any longer than necessary. Someone in the boat should use a VHF or cell phone to call for assistance if hypothermia is a concern. Determine the closest landing spot or head back to the dock. Keep everyone busy either bailing or paddling to stay warm.

### **Capsized (upside down) boat:**

A capsized boat is one that has turned upside down. Crews should understand that they typically cannot stop a boat from capsizing once it has started to roll.

The Crew Members must let themselves go with the roll of the boat and try to throw themselves clear of the boat. A Crew Member who is underneath the overturned boat can breathe in the air pocket. They should then grasp the gunwale of the boat with one hand and push back down into the water until they are clear of the boat and can surface.

Paddlers are to know their seat buddy, as well know who is in front and behind - immediately after surfacing, they are to check to see if their buddy is present and ok. In a dragon boat, front pair checks on the caller and the back pair checks on the steersperson.

The Boat Captain will check that all crew members are present by calling for paddlers to count off aloud. Once all the crew is accounted for 'Buddies' check each other for injury and report any injuries to the Boat Captain.

Check the non and anxious swimmers - assign someone to reassure them. The crew must stay with the boat and count off from the front to ensure no one is trapped under the boat, non-swimmers are safe, and no one has any medical problem.

Crew members must stay with the boat, using it as a floating platform but should avoid climbing on top of the boat as it may start to roll and possibly injure other paddlers. If a 'buddy' is injured, the uninjured buddy should grasp the gunwale of the boat with one hand and the collar of the PFD (or clothing) of the injured buddy with the other. It is important for the uninjured buddy to maintain verbal contact with their buddy. If the water is cold or paddlers feel cold, they should pull their knees to their chest and wrap their arms around their legs. This is often referred to as the HELP position – Heat Escape Lessening Position.

Remind everyone that the boat will not sink and in **most cases**, the best policy is to STAY WITH THE BOAT! Once it is determined everyone is safe a course of action will be determined but must be decided as a team.

For outrigger canoes, use established recovery procedures to attempt to right the boat, then proceed with getting the paddlers in as soon as possible, bailing quickly, and any not able to get in the boat are dragged to shore.

A capsized dragon boat will generally not be recoverable. Ensure all paddlers are accounted for and call for help using cellular phone or VHF radio.

If it is decided it may be necessary to leave the boat while in the water, this decision must be made as a group, given suitable weather, water conditions and close proximity to shore. At the direction of the captain, two or more crew (never individuals) may swim to shore in a self-rescue and to get help. Determine a meeting place before leaving the boat, use the buddy system enroute but keep everyone close, and recount the crew at the site on land. Once on shore, re-check carefully for any injuries or medical problems. Use cell phone or VHF to call for assistance, convey any medical concerns and provide location and landing position.

## **Winter Paddling**

No paddlers should be on the water in FVDBC boats in temperatures below -4 degrees Celsius (including wind chill).

If you are going out in cold weather please be prepared. Remember docks and ramps are icy.

## **Dressing for Cold Water Paddling**

You should wear layers that can be added and removed throughout the day to adjust your clothing to the changing outdoor temperature. Avoid cotton as it retains moisture and offers little insulation.

The inner / base layer should consist of wicking “quick dry” synthetic fabrics. This layer should draw sweat and moisture away from your skin and allow it to evaporate quickly.

The second layer is for insulation, so it can consist of fleece, wool, or other insulating, non-absorbing materials. Again, one or two thin layers is ideal (unless it is very cold), because then you can more easily adjust to a variety of conditions.

The outer layer is for protection from the elements. Here you will choose a paddling jacket, drysuit, or whatever you need to avoid the rain, sun, wind and anything else that comes your way.

Keeping your hands warm is critical. Neoprene winter paddling gloves are recommended.

A hat that doesn't absorb water and dries quickly will keep your head dry while also holding onto your body heat. Neoprene booties are recommended. However, layers of socks and warm shoes/boots can also be worn. If there is a chance that you could go in the water you need to consider the best footwear for that possibility. There are neoprene booties that have a thick rubber sole to protect your feet while walking and paddling.

## **Wetsuits & Neoprene Paddlewear:**

A wetsuit is a neoprene garment that traps a thin layer of water between itself and your skin and reduces circulation of this water. Because this water layer must be thin, a wetsuit must fit snugly to properly protect you during immersion and the paddler should not wear thick clothes underneath this suit. The three major heat loss areas are the inner thighs (near the femoral artery), under the arms (near the brachial artery) and the head and neck. Suits that fit poorly under the arms and around the thighs may allow too much water to collect there, robbing you of your body heat. The wetsuit is not outerwear, it is a base layer and wearing anything under your wetsuit (other than polypro underwear) compromises its ability to keep you warm. Layer clothes on top of the wetsuit to keep warm.

## **Drysuits and Paddling Suits:**

A driesuit is a waterproof garment with latex gaskets at all openings (ankles, wrists and neck) to keep out all water. No water circulates across your skin during immersion, and the insulating layers worn under the suit decrease heat loss in the water. Because driesuits are made of breathable materials, they trap less sweat inside the garment than traditional, non-breathable fabrics like urethane-coated nylon. Therefore, driesuits are comfortable in a wide range of air temperatures. Under your driesuit you will want to layer. The danger here is wearing too much, resulting in overheating. Often a single lightweight or mid-weight base layer is sufficient.

## **Cold Weather Effects on Paddlers**

At least two hazards to our club paddlers present themselves during the cold season.

1) Falls due to slippery conditions on the docks due to rain saturation, frost, snow or ice buildups

2) Hypothermia – due to:

- Air temperature (particularly wind chill effects, to which the Bedford Channel is particularly susceptible due to the easterly outflow winds during an Arctic weather high pressure condition)
- Water immersion

All crews should be aware of these risks and discuss them amongst themselves and with the captain / coach before leaving the dock. A concern raised by just one crew member about paddling conditions should be taken seriously and addressed before departure.

Hypothermia can occur out of water in cold temperatures as well if the body is not insulated properly.

### **Excerpt from WorkSafeBC Manual**

Accident investigations have shown again and again that a person's physical fitness or ability to swim in warm water will not save him or her from drowning in cold water. Hypothermia can be a factor but that takes time - usually more than 30 minutes. The killing factor is often that first shock of cold water on the body. The effects are so powerful that you may not be able to help yourself. Exposure to cold water changes your body functions. The first shock takes your breath away. Within a few minutes, your hands are so cold you cannot hold onto anything. You cannot pull yourself out of the water. Swimming becomes difficult or impossible as your breathing and muscles are affected by the cold. Eventually hypothermia sets in. Even if you are rescued, you may still die.

Keep yourself safe by being aware of what could happen to you in cold water. Know what to do to prevent you or other crewmembers from falling into the water and what to do if that occurs.

### **What happens when you fall into cold water?**

The effects of cold water on the body happen in four stages. Cold shock (Stage 1), swimming failure (Stage 2), hypothermia (Stage 3) or post-rescue collapse (Stage 4)

#### **1. Cold Shock**

Cold shock occurs immediately – as you enter the cold water. It lasts three to five minutes but it can result in quick drowning because of the way the body reacts. You cannot control these reactions:

- A large intake of breath
- A rapid increase in breathing rate (up to 4 times as fast)

- A reduced ability to hold your breath (to as little as 10 seconds)
- A massive increase in heart rate and blood pressure

Drowning may result from cold shock reactions. If your head goes below the surface, you might breathe in water with that first large intake of breath. As little as half a cup of water in your lungs can cause drowning.

Problems with breathing can lead to panic, which only reduces your chance of survival.

You are most likely to survive stage 1 if you:

- Do not inhale water
- Stay afloat
- Keep your head above water

A PFD or Life jacket is essential.

## 2. Swimming Failure

Swimming failure occurs after you have been in the cold water for 5 to 30 minutes. Its effects include:

- Loss of manual dexterity
- Inability to match breathing rate to swimming stroke
- Loss of coordination in the muscles in your arms and legs as they get cooler, increasing your swimming angle
- Increased swimming angle, requiring more energy to keep your head above the water
- Drowning

Being a good swimmer in warm water will not help you in cold water. In warm water, a swimmer takes one breath per stroke. In cold water, the breathing rate and stroke rate increase but not together. Your muscles and joints also get stiffer in the cold water and your strokes get shorter. These changes result in an increase in the body's swimming angle, with more of your body farther under the water instead of near the surface.

There is now more drag on your body, and you must use more energy to swim. Finally, your swimming strokes become totally uncoordinated and ineffective, and you may drown.

### 3. Hypothermia

Hypothermia is the cooling of the body's core. It affects your brain, heart and other internal organs. Your body begins to cool as soon as you enter the water, but the full effect of hypothermia usually takes at least 30 minutes. The effects of hypothermia are:

- A reduction of blood flow to the hands, feet and surface of the body
- Intense shivering in the early stages, as the body tries to maintain body core temperature.
- Lack of shivering in the later stages
- Loss of consciousness
- Heart failure

The body loses heat four times faster in water than in air. As the body cools, the will to survive decreases.

Eventually you lose consciousness and drown, or your heart fails.

### 4. Post-Rescue Collapse

The effects on your body after you are pulled from the water can include the following:

- Loss of hydrostatic pressure from the water causes a sudden drop in blood pressure. This can cause heart or brain failure.
- Your heart is cold and cannot pump cold blood effectively to maintain blood pressure
- Your lungs are damaged from the water you inhaled. This can cause pneumonia-like illness.
- Fatal bleeding from injuries may occur as your body warms up and your blood flows more freely. You may have internal injuries or injuries to your head and neck that you and your rescuers are not aware of.

People should be recovered from cold water horizontally rather than vertically. Rescue may not mean survival, however. Up to 20 percent of all survivors die during rescue or shortly after.

### **Wear a PFD, or Life Jacket**

If there is a risk of entering the water, be prepared to stay afloat to survive the effects of cold shock, reduce the need to swim, and give rescuers time to react. Wearing a flotation device can be the difference between living and dying because it can hold your head above the water. It also helps to maintain your body temperature.