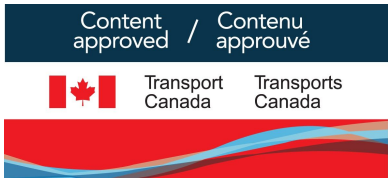
# MYBOATCARD®

## COURSE MANUAL

This boating safety course manual has been approved by Transport Canada strictly on the basis that it meets the minimum requirements of basic boating safety knowledge set out in Transport Canada's Boating Safety Course and Test Syllabus. (TP14932E). This approval does not represent confirmation of authorship by the course provider.






**MyBoatCard.com**

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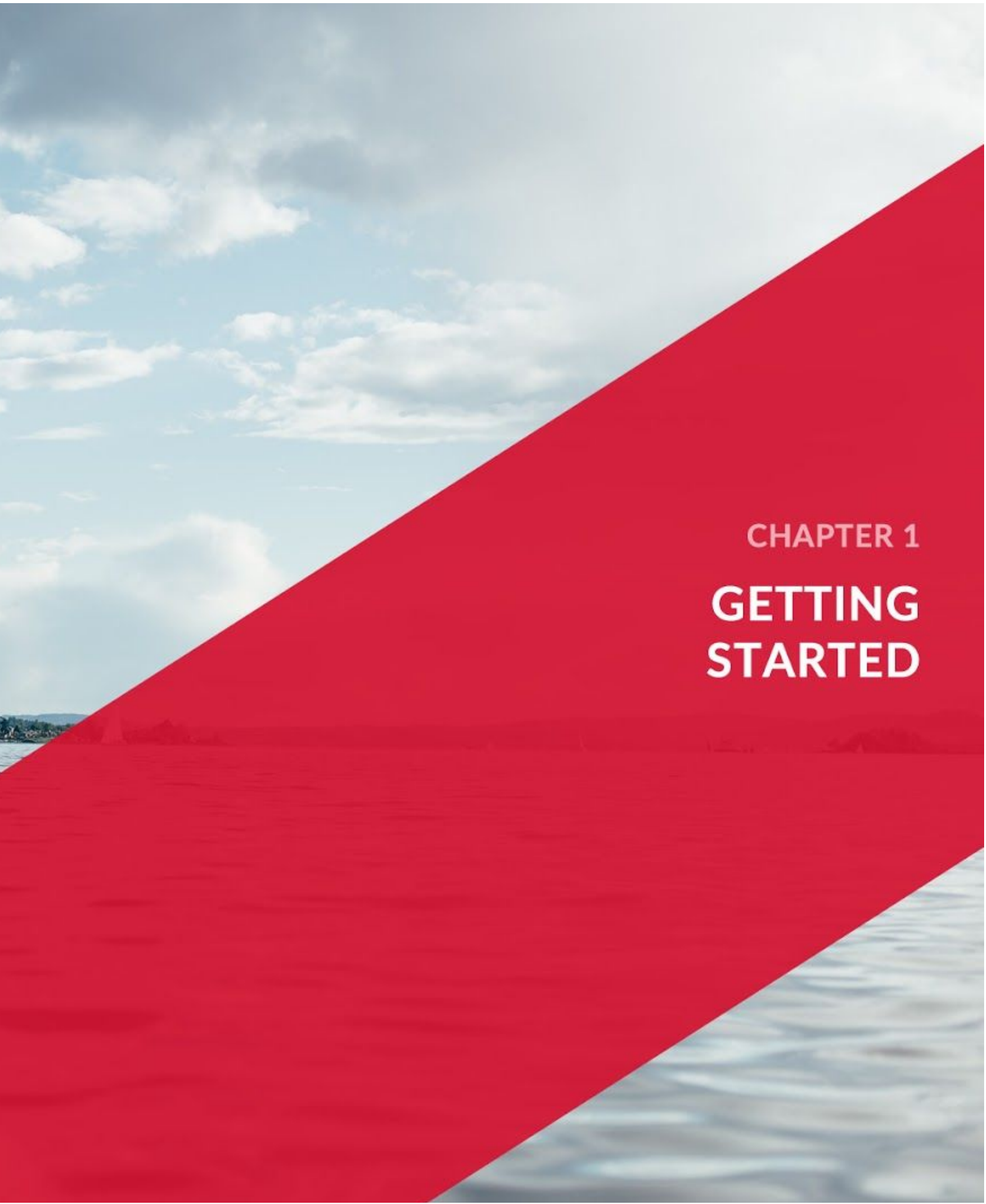


CHAPTER 1

# GETTING STARTED

# CHAPTER 1

## Introduction

Welcome to ***MyBoatCard.com***. This boating safety course will provide you with the knowledge required to safely enjoy countless hours on the water.

There's nothing better than getting out on the water for some sightseeing, waterskiing or fishing. Keeping everyone safe on the water is every boat operator's responsibility. Most boating accidents can be avoided by paying attention and following the safe boating practices outlined in this course.

### Wear Your Lifejacket

Remember to wear your lifejacket! Falling overboard, capsizing and swamping while boating are the leading causes of drowning when not wearing a lifejacket. Up to **90%** of boating-related deaths in the past 10 years had one thing in common: the victim was not wearing a properly fitted PFD, or lifejacket. This number one cause of boating fatalities is easy to prevent. Always wear a PFD or lifejacket while on the water.

### Boat Sober

More than **40%** of recreational boating deaths are caused by alcohol consumption. Alcohol intensifies the effect of fatigue, sun, wind, and boat motion to adversely affect balance, judgment and reaction time. Even one drink will affect you, so please leave the booze out of the boat.

### Boat Responsibly

Be sure to always keep a lookout, drive at a safe speed and never overload your boat.

In the next few chapters you will learn about safety on the water, boating terminology, required safety equipment and much more.

Stay safe and have fun enjoying the awesome Canadian waters from everyone at ***MyBoatCard.com.***

REMEMBER: The single most important thing you can do to prevent drowning while boating is to ensure everyone wears a lifejacket or personal flotation device (PFD) at all times.

# BOAT SAFETY

4 Main Principles Of Boat Safety In *Canada*

## Wear A Lifejacket

More then **90%** of victims that drowned while boating were not wearing a lifejacket.

## Boat Sober

Alcohol is a factor in over **40%** of all recreational boating fatalities.

## Check Your Euipment

Make sure all safety equiment required by law is on board and in good working order.

## Plan Ahead, Be Prepared

Check weather and water conditions for every trip.

# Proof of Competency

In Canada, all operators of recreational powered watercraft must carry proof of competency on board at all times (excluding the Northwest Territories and Nunavut). This includes all types of motorized boats, no matter their size or the horsepower of the engine (this includes small boats with electric motors.) Failing to produce proof of competency to an enforcement officer may result in a fine.

The *Competency of Operators of Pleasure Craft Regulation (COPCRs)* is in place to ensure that boat operators have a minimum level of basic boating safety knowledge in an effort to decrease the number of accidents and fatalities.

*Note:* Proof of competency is not required for pleasure crafts without a motor.

## What are the Accepted Forms of Proof of Competency?

Proof of competency can be any of the following:

- A Pleasure Craft Operator Card (PCOC);
- A certificate that states you have successfully completed a boating safety course in Canada prior to April 1, 1999;
- A completed and signed boat rental safety checklist (applicable only for rental period); or
- A specified marine certificate or equivalency recognized by Transport Canada.

If carrying a Pleasure Craft Operator Card as proof of competency, the original card must be carried on board. Photocopies or electronic copies of the card will not be accepted as proof of competency.


For more information on the proofs of competency that are recognized by Transport Canada, please visit the ***Office of Boating Safety*** website:

https://tc.canada.ca/en/marine-transportation/marine-safety/office-boating-safety

# Visitors to Canada

All boaters (both residents and visitors) on Canadian waters should be aware of and obey the rules that apply in Canada.

However, if you are a non-resident of Canada and are operating a boat in Canadian waters, the exceptions below apply to you.

## Operator Competency

**Operating your boat in Canada for less than 45 consecutive days**

If you are a non-resident visiting Canada with your boat, you are not required to carry proof of competency on board as long as your boat is in Canada for less than 45 consecutive days.

**Operating your boat in Canada for 45 consecutive days and more or operating a boat licensed or registered in Canada**

If you are operating your boat in Canada for 45 consecutive days and more, or operating a boat licensed or registered in Canada, you are required to carry a proof of competency, either an operator card or similar proof of competency issued by your home state or country.

REMEMBER: As a visitor, remember that you must keep proof of residence on board at all times.

## Safety Equipment Requirements

**Boats licensed or registered in a country other than Canada**

Foreign boats (those that are licensed or registered in a country other than Canada) need to comply with the equipment requirements of the country in which the boat is usually kept.

**Boats licensed or registered in Canada**

If you are a non-resident of Canada operating a boat that is licensed or registered in Canada, the boat must meet Canadian safety equipment requirements. However, in either case, you may bring your own lifejacket or PFD to use as long as it fits and meets the requirements of your home country.

# Age and Horsepower Restrictions

Horsepower restrictions apply to operators under 16 years of age.

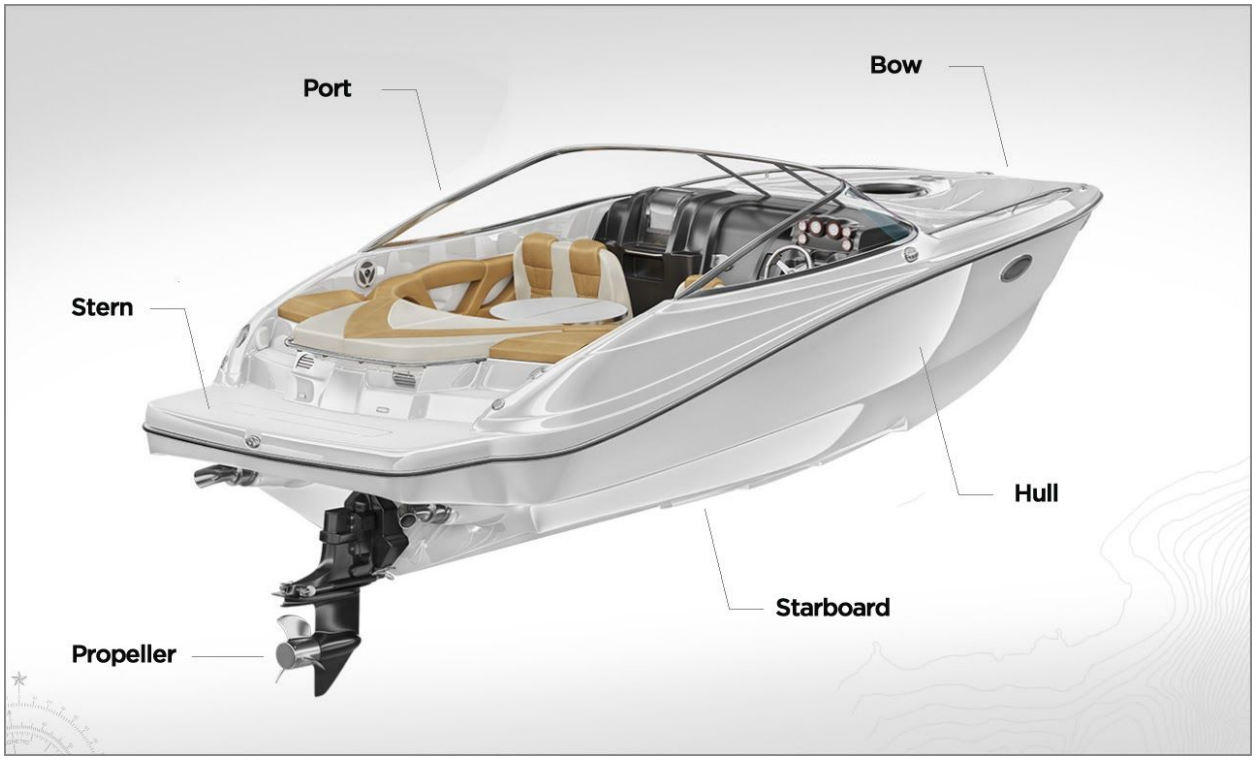
Youths less than 16 years of age may not operate boats with motors over certain horsepower limits unless someone 16 years of age or older, and certified, is directly supervising them from inside the boat.

***Note :*** *Regardless of age, all pleasure craft operators require proof of competency to be carried on board.*

| AGE | HORSEPOWER RESTRICTIONS |
|---|---|
| Under 12 years of age with no direct supervision | May operate a boat up to 10 hp (7.5 kW) |
| Ages 12 to under 16 with no direct supervision | May operate a boat up to 40 hp (30 kW) |
| Under 16 years of age, regardless of supervision | Cannot operate a personal watercraft (e.g. Jet Ski) |
| 16 years of age or older | May operate any vessel regardless of horsepower |

# Boat Terminology

It is important that all boat operators understand the terminology associated with the safe day-to-day operation of a vessel. This can save time in emergency situations and help avoid miscommunications.




**BOW** - the forward (front) part of a boat.

**STERN** - is the rear or back portion of a boat.

**PORT** - is the left-hand side of a vessel when looking forward. *(Hint:* **Port** and **Left** both have four letters).

**STARBOARD** - is the right-hand side of a vessel when looking forward.

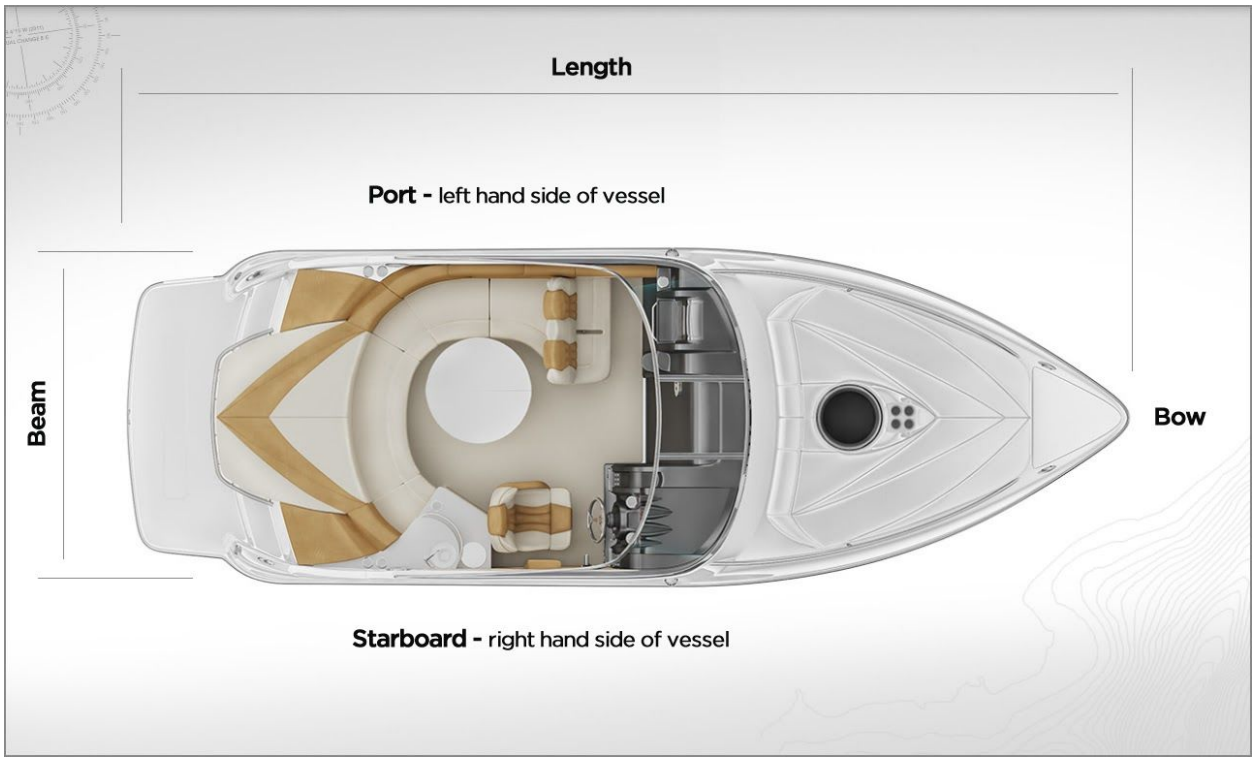
**DRAFT** - is the depth of water that a vessel requires to float (and is approximated as the distance between the waterline and the lowest point of the hull).

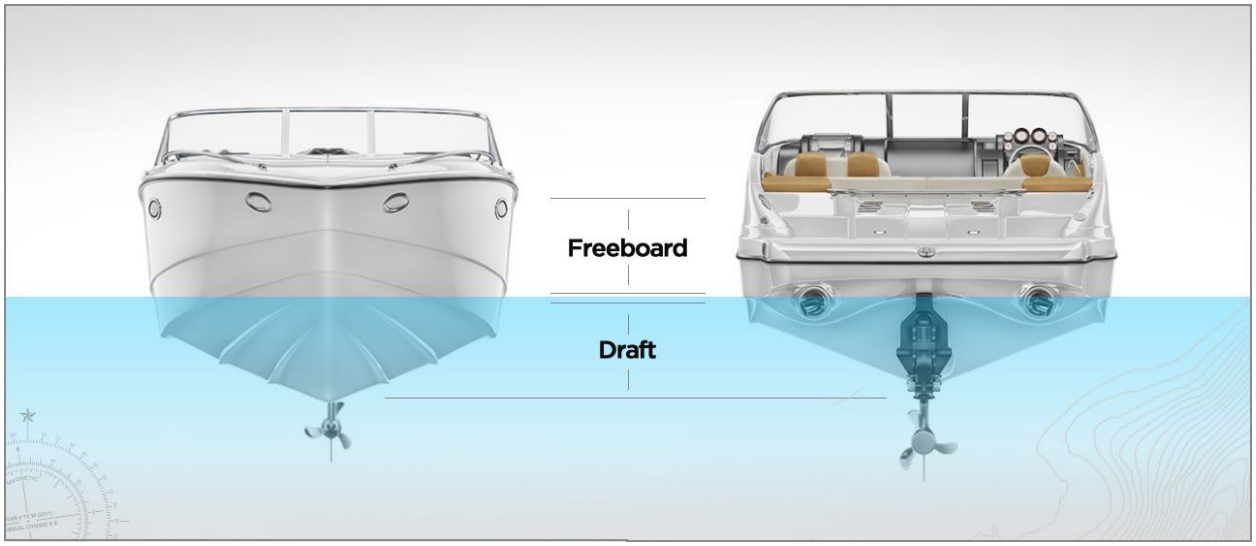
**WATERLINE** - can be found on the hull of the vessel, and indicates the recommended maximum gross load capacity. The waterline must never be submerged. If it is submerged, the boat has exceeded its maximum load capacity.

**HULL** - is the body of a vessel, from the deck down. It does not include rigging, superstructure, or machinery.

**FREEBOARD** - is the distance between a vessel's deck and the waterline.

# Boat Terminology .. Continued



# Boat Terminology .. Continued

**PERSONAL FLOTATION DEVICE (PFD)** - is a device designed to provide enough buoyancy to keep the wearer's chin out of the water. It is not, however, a lifejacket, which is designed to turn an unconscious person face-up in the water.

**LIFEJACKET** - is a flotation device that, although bulky, provides much more buoyancy than a PFD and is designed to turn an unconscious person face-up in the water.

**TO OPERATE** - means the action of controlling the speed and course of a pleasure craft.

**VESSEL** - a term that refers to every description of watercraft, including non-displacement craft and seaplanes, used or capable of being used as a means of transportation on water.

**PLEASURE CRAFT** - is any type of watercraft that is used exclusively for pleasure and does not carry passengers or goods for hire, reward, remuneration, or any object of profit. If remuneration is earned for a service provided by a vessel, then that vessel is deemed to be a commercial vessel.

**POWER DRIVEN VESSEL** - is a watercraft that is propelled by any type of engine or machinery. A sailboat that is being propelled by its engine, even if it has its sails up, is deemed a power-driven vessel.

**SAILING VESSEL** - is any vessel under sail, provided that propelling machinery, if fitted, is not being used.

**STAND ON VESSEL** - is a vessel that has right-of-way, and when meeting, crossing the path of, or overtaking another vessel, shall maintain her course and speed.

**GIVE WAY VESSEL** - is a vessel that shall keep out of the way of another vessel.

**RESTRICTED VISIBILITY** - refers to any condition in which visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms or any other similar cause.

**WAKE** - is the waves (or track of water) around and behind the vessel that are created by a vessel in motion.

**STRONG WIND WARNING** - are winds with sustained wind speeds in the range of 20 - 33 knots (36 to 61 km/h) as defined by the Meteorological Service of Canada.

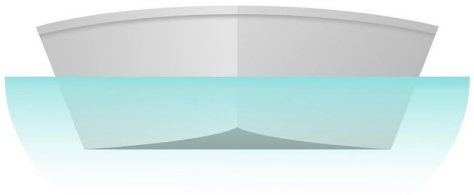
# Hull Types and Uses

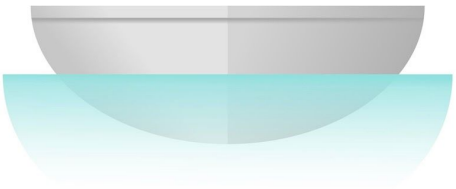
There are two types of hull designs: planing and displacement.

- **Planing Hull** - is designed to lift and ride on top of the water as it gains speed. Most small power boats have a planing hull design.
- **Displacement Hull** - is designed to travel through the water. Sailing vessels and large cruise ships use displacement hulls because their size and power will not allow them to plane.

**There are four basic hull shapes found on recreational watercraft:**

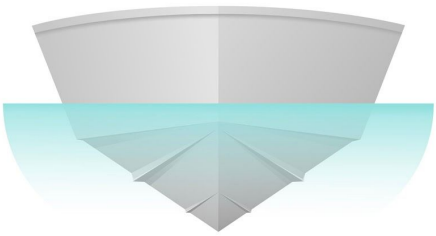
**Flat Bottom** – Found on fishing boats. They are best in calm, shallow waters.

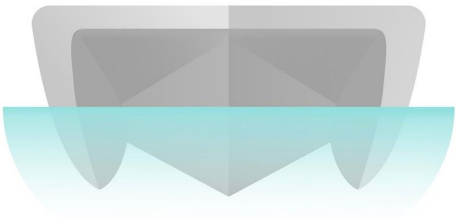




**Round Bottom** – Found on canoes. These boats glide slowly through the water with little effort. They do roll easily, so use caution when entering, exiting, loading or unloading the boat.

**Deep-V Hull** – Found on powerboats. These boats move smoothly through rough water at high speeds. They generally have a larger engine.





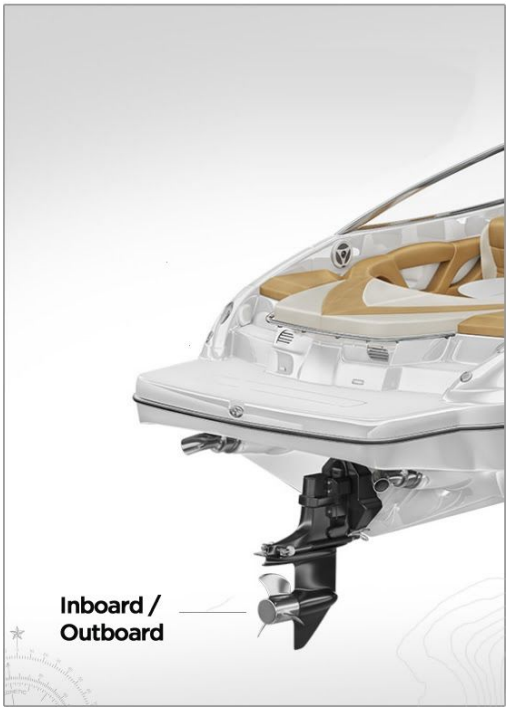
**Multi-hull** – Found on catamarans and pontoon boats. These boats are very stable but have a wide turning and steering radius.

# Engine Types

**Outboard Engine** - The engine is mounted outside the boat on the transom; all of the engine is visible. Steering is controlled by either a steering wheel or hand tiller, and propulsion comes from water being pushed by the propeller.

Outboard engines are popular with bow riders and aluminium boats; they come in many different power ranges and models and can be either two or four-stroke.


**Inboard Engine** - The engine and most of the driveshaft are mounted inside the vessel towards the center. Only the propeller and propeller shaft protrude outside the hull. Propulsion is achieved by water being pushed by the propeller, which moves the boat forward. When the steering wheel is turned, it moves a rudder to control the direction of the boat.




**Inboard/Outboard Engine** - The engine unit is installed inside the hull while the lower unit (composed of the driveshaft and propeller) is outside the hull. Propulsion is achieved by water being pushed by the propeller, and steering is controlled by a steering wheel.

**Jet Engine** - The engine and pump impeller are mounted inside the vessel and no external propeller is needed.

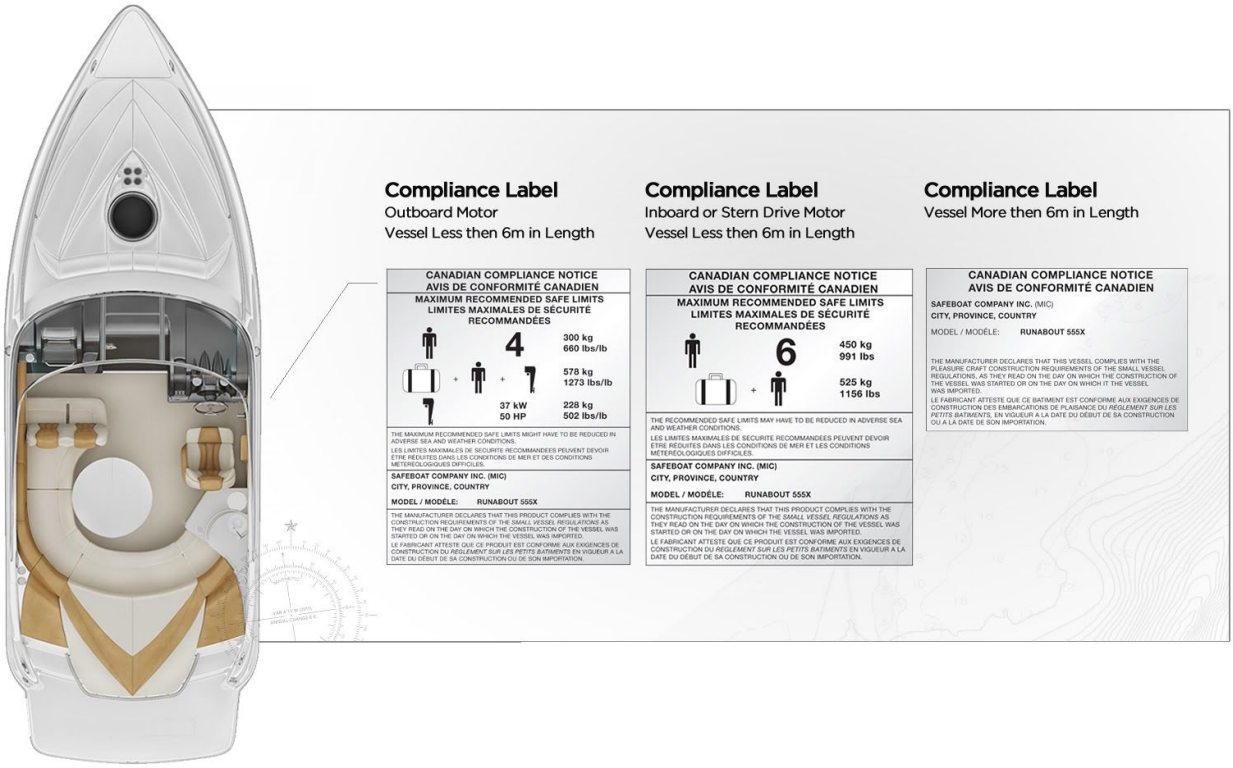
Propulsion is achieved when water is sucked into the engine from an opening under the vessel, the water flows through the pump (which is powered by the engine) and forced out at very high pressure, moving the boat forward. Steering is controlled by a steering wheel or handlebars.

Jet Engines are found in PWC and jet boats. They are either two or four stroke inboard engines.

# Compliance Label

Any pleasure craft (except Pleasure Craft over 24m) that is propelled (or designed to be propelled) by a motor and that is built or imported into Canada must have a Compliance Label. The Compliance label must be permanently attached to the hull of the vessel, in a conspicuous location plainly visible from the helm.

A compliance label is the manufacturer's or importer's confirmation that the vessel is built in accordance with the construction requirements of the *Small Vessel Regulations*.




## Types of Compliance Labels

There are three types of Compliance Labels for Pleasure Craft:

- Compliance Label for a pleasure craft measuring *up to 6 m* in length;
- Compliance Label for a pleasure craft measuring *more than 6 m* long; and
- Compliance Label for vessels other than pleasure craft measuring more than 6m long.

# Compliance Label .. Continued

For vessels *up to 6m* in length, the compliance label states:

- The **maximum safe gross load capacity** to be carried, including but not limited to the total weight of all persons, fuel, and any equipment on board; and
- The **maximum recommended safe limits for motor power** for the hull.

For vessels *over 6m* in length, the compliance label contains a statement indicating that the vessel was built to the pleasure craft construction requirements.

Obey your vessel's compliance label. A boat that is overloaded or overpowered sits lower in the water and is more at risk of swamping, capsizing, or sinking - especially in poor weather or water conditions. Overloading is dangerous; know and respect the load limitations of your vessel.

REMEMBER: The maximum load and power limits indicated on the compliance label assume that the vessel will be operated in fair weather and that the weight of equipment and people carried in the vessel is properly distributed to balance the hull. An unstable boat is more difficult to maneuver and has a greater risk of swamping or capsizing.

# Pleasure Craft Licence

All pleasure craft powered by an engine or engines of 10 hp (7.5 KW) horsepower or more, including Personal Watercraft (PWC), must be licensed. Alternatively to licensing your boat, you can register it with Transport Canada.

A pleasure craft licence is a document that provides your boat with a unique licence number, which is valid for 10 years. Pleasure craft license paperwork must be kept on board when the boat is being operated.

## Display your Licence Number

On your boat, you must display the pleasure craft licence number:

- On **both sides** of the bow;
- Above the waterline;
- As far forward as practical; and
- Where it is easy to see.

The characters must be:

- In block letters;
- At least 7.5 cm (3”) high; and
- Of a colour that contrasts with the background *(see image below)*.

# Pleasure Craft Licence - Change of Address / Owner

## Change of name or address

A Pleasure Craft License is valid for a period of ten (10) years beginning on the day on which it is issued, transferred or renewed. Any updates that are needed (i.e. name or address change) does not extend the validity period of the licence.

Any update must be made through the Pleasure Craft Licensing Center online or by mail within 90 days. The pleasure craft may be operated without an accurate name and/or date on the license for up to 90 days, as long as you carry documents that confirm the change of name or address on board at all times until you receive your updated Pleasure Craft License paperwork.

## Transferring Ownership

When transferring ownership the same rules apply. The new owner must transfer the license into their name within 90 days of purchase through the Pleasure Craft Licensing Center online or by mail. During this time they must carry proof of purchase documents on board at all times until they receive their updated Pleasure Craft License paperwork.

For more information, please visit the ***Pleasure Craft Licensing Centers*** website:
https://tc.canada.ca/en/marine-transportation/marine-safety/contact-us-0

REMEMBER: Instead of licensing your vessel, you can choose to register it with Transport Canada

# Registration

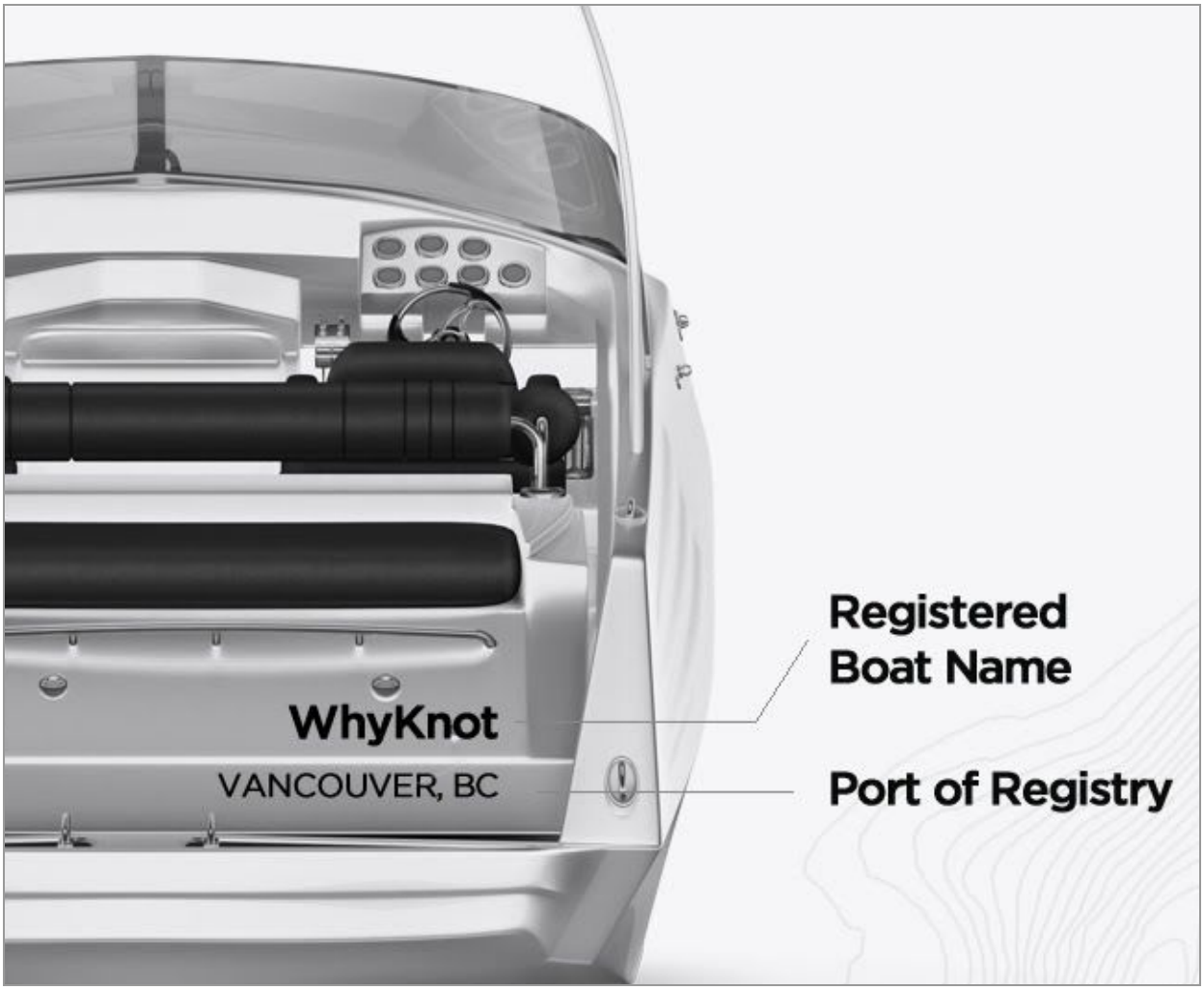
Vessel registration is different from licensing. Vessel registration is the title of ownership of a boat, which includes the official vessel name and the name of the owner(s). Registration of a Pleasure Craft is voluntary.

When a boat is registered, it is given a unique name and registration number. The name and port of registry of the vessel must be displayed on the stern of the vessel.

**Registration benefits include :**

- Proof of ownership (legal title) for your boat;
- The right to fly the Canadian flag;
- A unique name and official number for your boat; and
- The right to use your boat as security for a marine mortgage.

For more information, please visit the **Transport Canada's Vessel Registry** website:
https://tc.canada.ca/en/marine-transportation/vessel-licensing-registration



# Hull Serial Number (HIN)

All pleasure craft manufactured in Canada, or imported into Canada, after August 1, 1981 shall be permanently marked with a Hull Serial Number (HIN). No person should remove, alter or otherwise tamper with a HIN. The 12 digit HIN identifies when the vessel was built and by whom, and is often used to help identify lost or stolen vessels.

The HIN can be found on the outboard starboard side of the transom *(see image below)*.

CHAPTER 2

# SAFETY EQUIPMENT

# CHAPTER 2

## Safety Equipment

Whether you rent, own or borrow a boat, you are required to carry a minimum amount of safety equipment. Safety equipment that is easily accessible and in good working order is instrumental to safe boating. Remember that the best protection you can give yourself on the water is to always wear your lifejacket or your PFD.

**All safety equipment on board must be:**

- In good working order;
- Always easy to reach (so that it can be used in an emergency); and
- Maintained and replaced in accordance with the manufacturer's instructions or recommendations.

# Lifejackets & Personal Floatation Devices

Remember to wear your lifejacket! Up to **90%** of boating-related deaths in the past 10 years had one thing in common: the victim was not wearing a properly fitted Personal Floatation Device (PFD), or lifejacket. This number one cause of boating fatalities is easy to prevent.

It is strongly recommended that a lifejacket or a PFD be worn at all times while on a vessel to prevent drowning, or at a minimum at least while underway. If a flotation device is not worn, it must be readily accessible.

REMEMBER: There must be at least one approved PFD or lifejacket for each person on board a vessel.

All boat operators must ensure that there are properly fitted lifejackets or PFDs on board for all passengers. Passengers must be informed of the location of the PFDs and instructed on how to put on the PFD properly. In the case of an emergency, all passengers must wear a PFD.

**Flotation devices in Canada are categorized into three different types:**

- Lifejackets;
- Personal Flotation Devices (PFDs); and
- Inflatable lifejackets.

## Lifejackets

Lifejackets serve the same purpose as PFDs, but do a better job. They are much more buoyant than PFDs and **are specifically designed to turn an unconscious person face-up in the water**. Lifejackets come in only three colours: orange, red, and yellow. They are bulkier and less comfortable than PFDs.

There are three types of Canadian-approved lifejackets;

- **Small Vessel Lifejackets** - are approved for small vessels. They have less floatability than the standard type of lifejacket. They will turn you on your back to keep your face out of the water, even while unconscious, but may do so more slowly. The small vessel lifejacket comes in a keyhole or vest style.

- **Standard Lifejackets** - have a self-righting capability that turns an unconscious person who is face down in the water to a face-up position, allowing them to breath. The Standard lifejacket is a keyhole style that you put your neck through and secure.

- **SOLAS Lifejacket** - Safety of Life at Sea (SOLAS) lifejackets meet very high performance standards and are approved for all vessels. The SOLAS lifejacket is a keyhole style and will turn you on your back in seconds to keep your face out of the water while unconscious.

REMEMBER: A lifejacket will turn you on your back and keep your face out of the water even if you are unconscious.

## Personal Flotation Devices (PFDs)

While PFDs are more comfortable than lifejackets because they are designed for constant wear, they do not generally offer the same level of floatation as lifejackets for staying afloat and they don't put you on your back to keep your face out of the water so you can breathe properly.

# Inflatable PFDs

Inflatable PFDs are not inherently buoyant and do not work unless they are inflated!

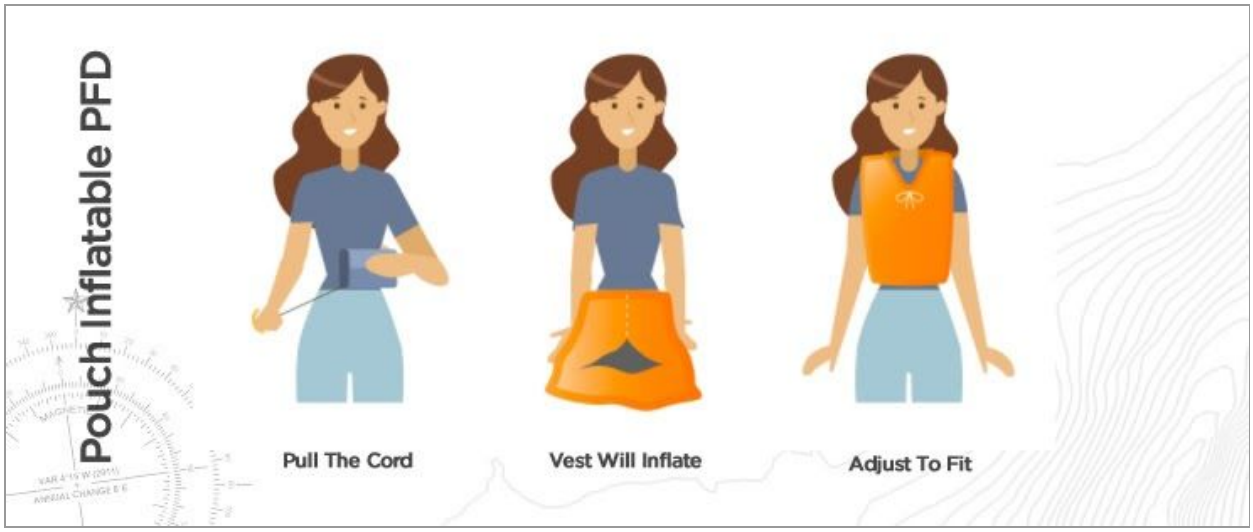
All inflatable PFDs approved in Canada are equipped with a tube. If the CO2 inflation mechanism does not work, simply inflate the tube by blowing into it. Time to inflate the PFD is quite short, but may seem long if you are not a very good swimmer.

**Inflatable personal flotation devices come in two styles:**

- **Vest types** - can be inflated orally, manually (with a CO2 system) or automatically; and
- **Pouch types** - can be orally inflated or manually inflated by pulling a toggle to activate a CO2 inflation system.

**Inflatable PFDs are NOT approved for:**

- Anyone under 16 years old;
- Anyone who weighs less than 36.3 kg (80 lbs);
- Use on any type of **personal watercraft** (i.e. jet ski etc); and
- Use for white-water paddling activities.




REMEMBER: To be approved, the inflatable PFD must be worn on an open boat. If the boat is not open, you only need to wear it while you are on deck or in the cockpit.

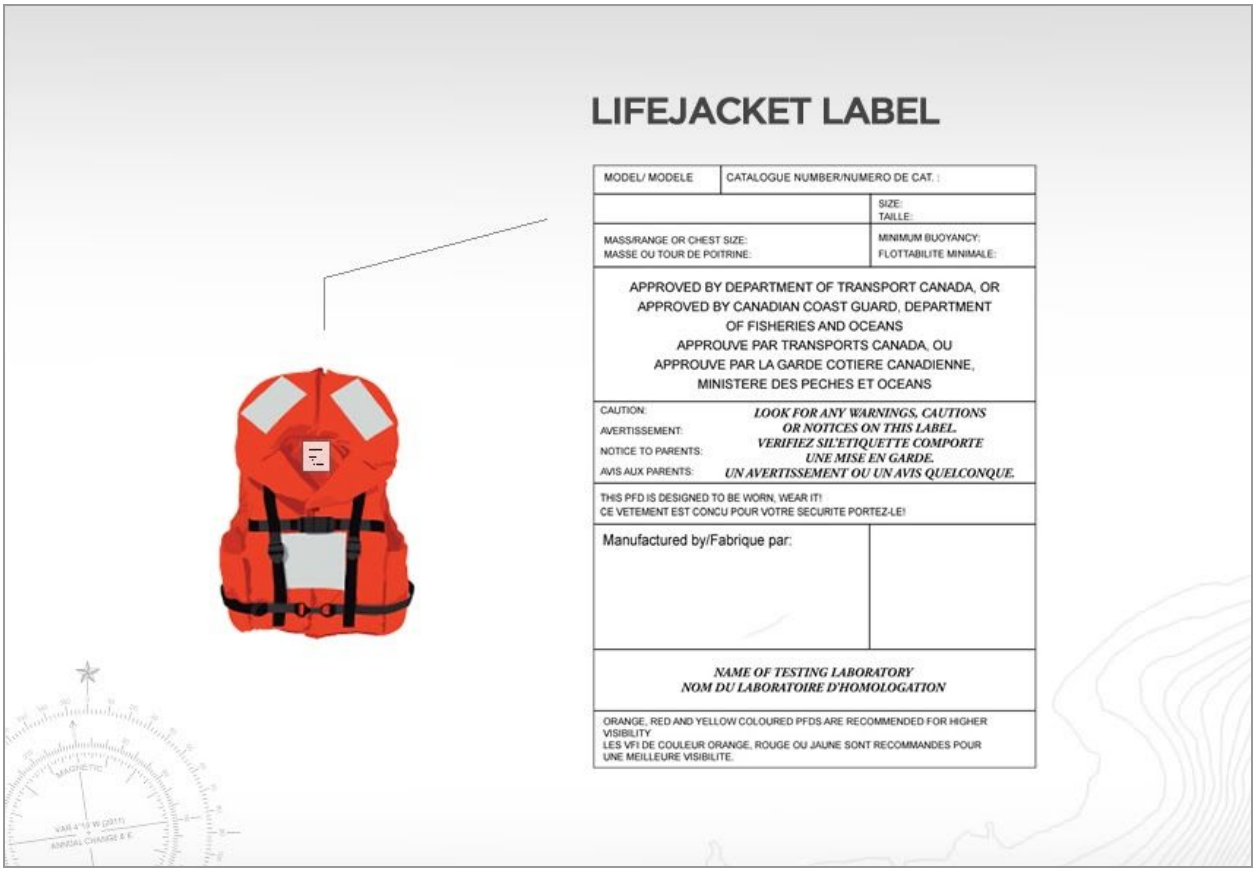
# Lifejacket / PFD Approval

All Canadian lifejackets and PFDs must bear an approval label stating that the equipment has been approved by one or a combination of the following agencies :

- The Department of Transport Canada;
- The Department of Fisheries and Oceans;
- The Canadian Coast Guard.

A non-Canadian resident may use a PFD or lifejacket from their homeland provided it is in good working order and meets that country's standards.

REMEMBER: Failure to wear a lifejacket or personal flotation device (PFD) is the number one contributing factor to recreational boating deaths in Canada.



# Lifejacket / PFD Sizing

Always try on your lifejacket or PFD:

- Make sure it fits comfortably;
- Fasten all straps, zippers and ties and raise your arms over your head to see if it stays in place; and
- Ask someone to lift your lifejacket or PFD straight up at the shoulders. If it fits properly, the jacket will stay in place. If the zipper touches your nose or the jacket almost comes off, it is too loose.

**A properly fitted PFD should :**

- Fit snug and allow free movement; and
- Not ride higher than the wearer’s ears or mouth.

REMEMBER: A PFD that is too small may not support the person's weight if the person falls overboard.

# Testing Your Lifejacket

It is a good idea to test the buoyancy of a PFD or lifejacket on a regular basis, as suggested by the manufacturer.

**You can do this by practicing the following:**

- While wearing the PFD or lifejacket, wade into chest-deep water;
- Bend at the knees;
- Then float on your back; and
- Verify that the Personal Flotation Device and/or lifejacket keeps your chin above water so that it is easy to breathe.

# Caring for Your Lifejacket

Lifejackets that are ripped or in poor condition will **NOT** receive Coast Guard approval and must be replaced.

**Follow these tips to keep yours in good condition:**

- Check its buoyancy regularly in a pool or by wading out to waist-deep water and bending your knees to see how well you float;
- Make sure that straps, buckles and zippers are clean and work well;
- Tug on straps to make sure they are well attached and there is no sign of wear;
- Dry your lifejacket in open air and avoid direct heat sources;
- Store in a dry, well-ventilated place where they are easy to reach;
- Do not dry clean or use strong detergents.
- Use mild soap and warm running water to clean; and
- Never sit or kneel on your lifejacket or use it as a fender for your boat, it might get damaged and lose its approved status.

# Flotation Devices for Children

Children under 12 are required to wear flotation devices or lifejackets at all times unless they are in an enclosed area.

**Keep in mind the following:**

- Lifejackets are fitted according to the weight and size of the child. Test the fit by picking up the child by the shoulders of the lifejacket. A lifejacket should fit snugly and not ride up over the chin or ears. If there are more than 7.6 cm (3") between your child's shoulders and the device, it is too big and could do more harm than good.
- Special features of children's lifejackets include a strap between the legs to keep the flotation device in place, a supportive collar for the child's head, reflective tape for visibility, safety straps with buckles, and waist ties or elastic gathers in the front and back.

REMEMBER: Children should always wear a lifejacket or PFD (unless they are in an enclosed area) and be within your reach. Set a good example and wear yours every time you are on the water.

# Lifebuoys

A lifesaving buoy is designed to be thrown to a person in the water to provide buoyancy. The lifebuoy and grab lines must be in good condition with no tears, perforations or rot.

Regulations require that operators of vessels greater than 9 metres carry lifebuoys that are attached to a buoyant heaving line.

**The buoy must be circular in shape with an outside diameter of either:**

- No less than 610 mm (24”) - Small Vessel Lifebuoy;
- 762 mm (30”) - SOLAS Lifebuoy.

Lifebuoys that are smaller in size and horseshoe types are not approved by Transport Canada. When buying a lifebuoy, select one that carries a sticker showing that it has been approved by Transport Canada.

# Buoyant Heaving Lines

Heaving lines are designed to be thrown to someone in the water to aid in the rescue of that person. The line should be attached to a floating object to help accurately throw to someone in the water. It is recommended to practice throwing the buoyant heaving line to increase accuracy.

**A buoyant heaving line is approved for use as long as it:**

- Floats and is in good condition;
- Is made of one full length of rope,
- Is not made of many shorter ropes tied together;
- Is long enough for the boat you will be using; and
- Is used only as a piece of safety equipment.

Under the *Small Vessel Regulations*, a buoyant heaving line must be at least 15 metres in length for boats up to 24M, and 30 metres in length for boats over 24M. The heaving line must be readily accessible in case of an emergency.

# Safety Equipment .. continued

## Reboarding Device

A reboarding device is a ladder or system that helps a person climb on board the vessel from the water.

All Pleasure Crafts with a freeboard greater than 0.5 metres must carry a reboarding ladder or other equipment (i.e. swim platforms, harness or rope) to allow easy reboarding of the vessel from the water.

Boats equipped with transom ladders or swim platform ladders meet this requirement, but the reboarding device cannot be part of the propulsion unit. The device must be appropriate for the vessel it is used for.

## Manual Propelling Device

A manual propelling device is a set of oars, paddles or another device that uses human power to propel a vessel.

A manual propelling device is required on all boats up to 9 metres to provide a manual means of propelling the boat if the engine quits.

Before each boating trip you should check that your manual propelling device is within reach and ready for use.

## Axe

Axes can also be used to cut towlines in the event of an emergency. The axe must be readily available and not exposed to the elements. Any type of axe is accepted (including hatchets) but must be red in colour. A spiked axe is the preferred type (see image).

- 1 axe is required on a vessel more than 12M but less than 24M.
- 2 axes are required on vessels 24m or larger.

## Bailers and Manual Water Pumps

A bailer is a container that is capable of removing water from a small vessel.

A bailer must be made of plastic or metal, have an opening diameter of at least 9cm, and be capable of holding at least 750ml of water. Some boats may carry a manual water pump in place of a bailer.

**For a Manual Water Pump, the pump along with its hose must :**

- Be long enough to reach from the bilge (lowest part of the boat where water collects) to the boat's side; and
- Be capable of discharging water over the side of the boat.

Larger vessels may have an automatic bilge pumping system to remove water that has collected in the bottom of the boat. These pump systems are very fast and effective at removing large amounts of water from the bilge. Bailers and bilge pumping requirements are based on the length of the vessel.

REMEMBER: A bailer or manual bilge pump is not required for a boat if it cannot hold enough water to make it capsize, and is fitted with sealed watertight compartments.

## Fire Buckets


Fire buckets must:

- Be red in color;
- Be made from metal;
- Have a rounded bottom;
- Have a capacity of 10L or more;
- Have a small hole in the center to prevent water pooling and rusting the bucket; and
- Be fitted with a lanyard of sufficient length to reach the water from the location they are stored.

Fire buckets requirement:

- 2 fire buckets are required on vessels over 12M in length but less than 24M; or
- 4 fire buckets are required on vessels over 24M in length.

# Fire Extinguishers

The letters on a fire extinguisher indicate what types of fires it is designed to fight.


**Fires are classified as follows:**

- **Class A:** Materials that burn, such as wood, cloth, paper, rubber and plastic;
- **Class B:** Liquids that burn, such as gas, oil and grease;
- **Class C:** Electrical equipment.

A class 5BC fire extinguisher is required on any boat with an inboard motor, a fixed fuel tank, or an appliance that burns fuel. The letters BC identify the types of fire that the extinguisher will put out (see above).

The number before the letter(s) on an extinguisher rates the extinguisher's relative fire-fighting effectiveness (a 10ABC extinguisher puts out a bigger fire than a 5ABC extinguisher).

The fire extinguisher must be mounted in a convenient and accessible location and checked for the correct operating pressure. Show your guests the location prior to starting your outing.

A marine rated fire extinguisher is highly recommended because of its resistance to corrosion.

**Any fire extinguisher you choose must be certified and labeled by either:**

- ULC (Underwriters' Laboratories of Canada);
- UL (Underwriters' Laboratories, Inc., or
- The U.S. Coast Guard.

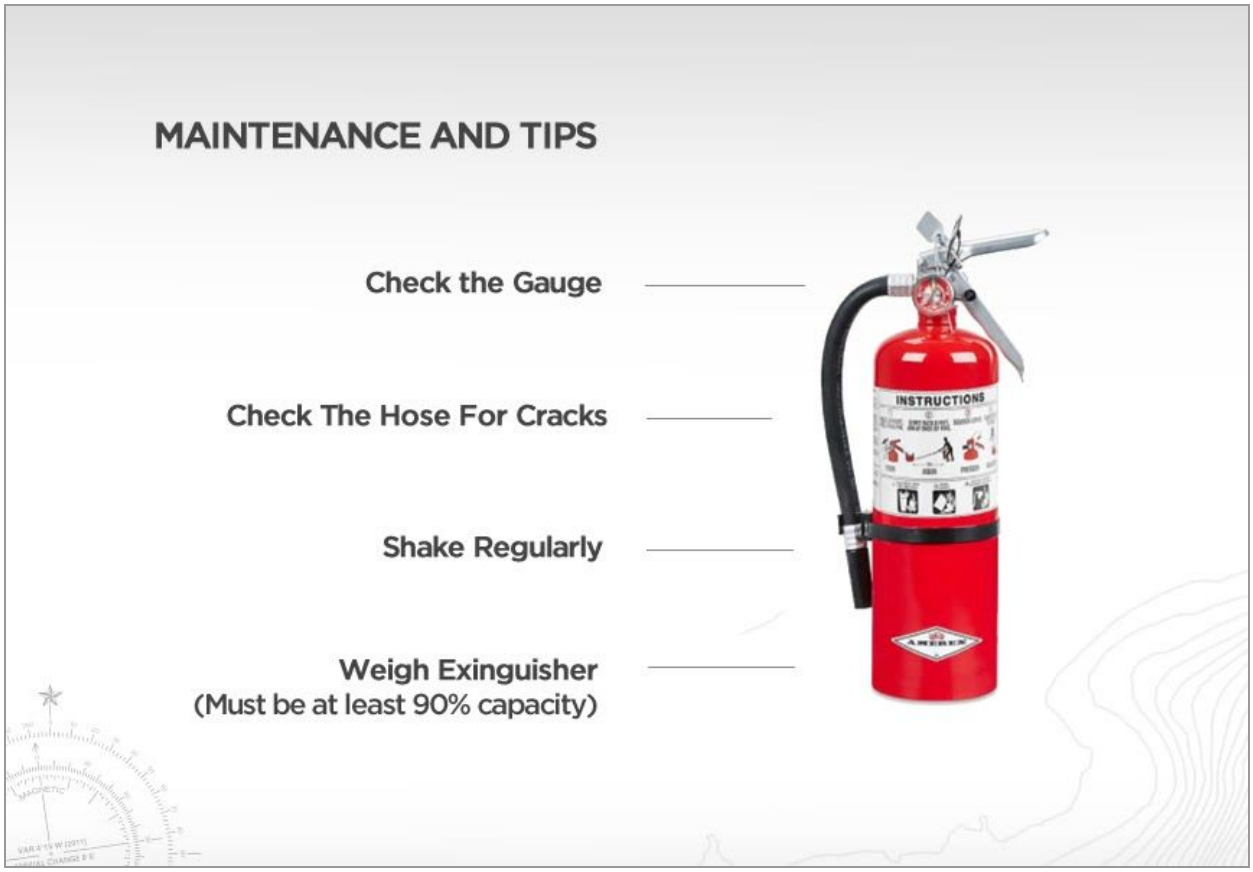
REMEMBER: The number of fire extinguishers required on a boat depends on: 1) the length of the boat, 2) type of appliances on board, and 3) sleeping accommodation (if any).

# Fire Extinguisher Safety

Take the following steps to ensure that your fire extinguisher is safe and ready for use at all times:

- Shake the fire extinguisher vigorously upside-down **every month**, to prevent clumping of the chemicals inside.
- Do not place your fire extinguisher in areas of high temperature.
- Replace any old or used fire extinguisher.
- Have rechargeable fire extinguishers refilled by a qualified professional.
- Inspect the fire extinguisher for damage on a regular basis.
- Read and follow all of the manufacturer's instructions.

REMEMBER: To prevent the chemical agent in a fire extinguisher from clumping together you should shake it vigorously in the upside-down position every month!



# Anchors

In emergency situations, anchors can be very helpful. If your engine fails and you are at risk of drifting into shallow waters or into the path of another vessel, dropping the anchor will keep you from drifting while you wait for assistance.

What makes a good anchor is design and weight. Your anchor selection should depend on the holding power needed (relative to size of the boat) and the type of waterway bottom (i.e. mud, sand, rock etc.)

Having the right anchor and cable for your boat is important. If you do not, rough winds and water can cause it to drag, leaving your boat to drift. This is especially dangerous if you are asleep or swimming nearby. Make sure your boat is well anchored and keep watch to detect signs of dragging.

When carrying an anchor on board a pleasure craft, the minimum length of anchor rode (rode is the combined length of chain and rope attached to the anchor) required depends on the length of the boat. Make sure the anchor is always accessible and the rode is free of entanglements.

REMEMBER: The main factor that determines the type of anchor is the type of bottom of the waterway.

There are a number of different types of anchors:

**Danforth or Fluke Anchor:** has pivoting flukes that bury the anchor. Best for soft mud and grass.

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**Plow Anchor:** is popular with cruising sailors and other private boaters. Generally good for all bottoms.

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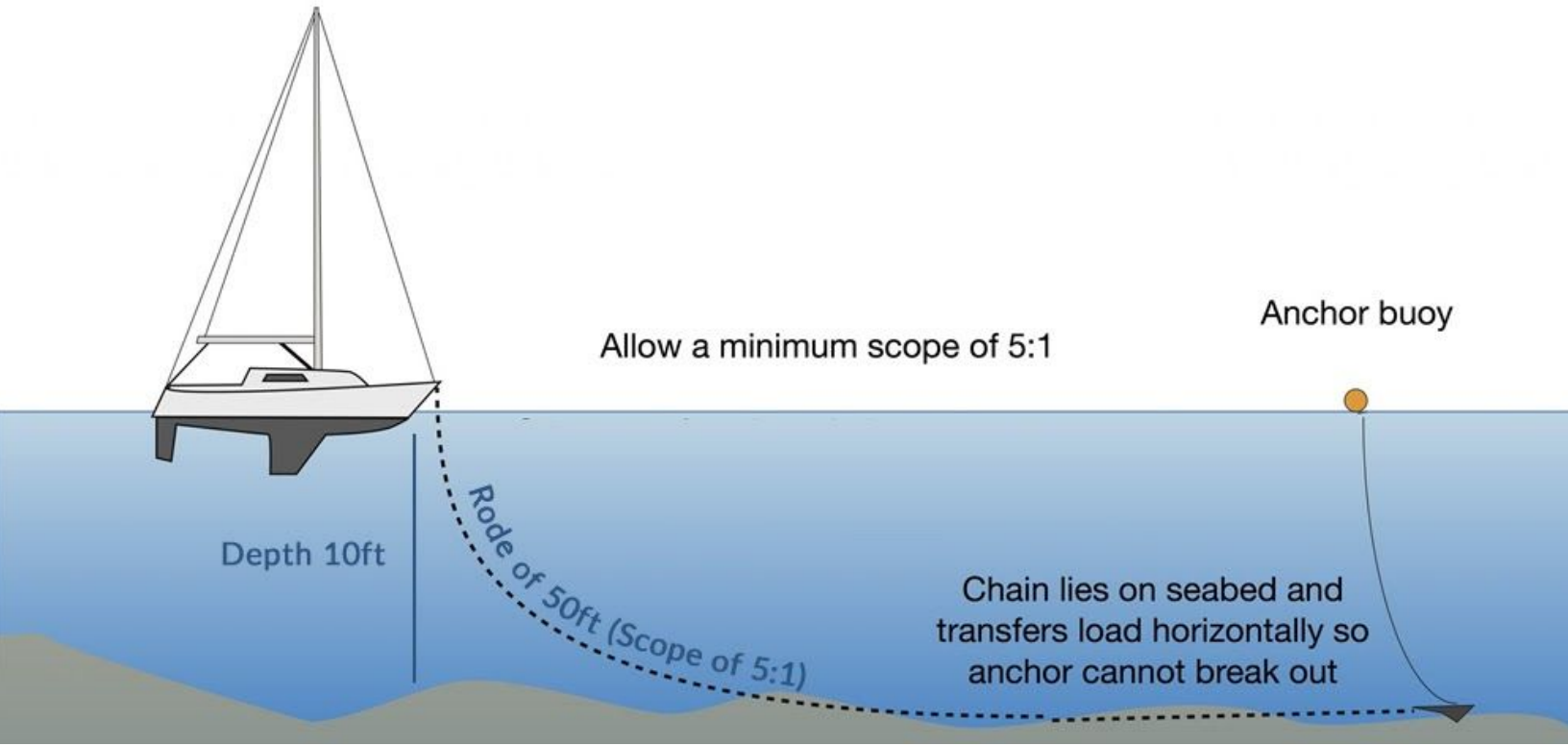
**Mushroom Anchor:** is suitable where the seabed is flat and composed of silt or fine sand.

# Tips On Anchoring

- Verify that the water has sufficient depth for your hull to clear the bottom yet not be too deep for your anchor line. If you are in an area affected by tides, do not forget to consider a rising or falling tide;
- **Make sure that your anchorage provides enough swing room for your boat to swing safely 360 degrees on the anchor line if the wind changes direction;**
- Pick a spot upwind from where you wish to end up (once you set anchor, you will drift downwind);
- Provide enough scope. Scope is the ratio between length of the rode and the depth of the anchorage;
- The amount of scope required to anchor a boat safely depends on weather conditions. **The recommended minimum length of anchor line used for an overnight stay in good weather conditions is five (5) to (10) times the depth of water.** The more sheltered an anchorage, the less scope required;
- Use larger anchors during adverse sea conditions and ensure the shackle pin has a locking device;
- Ensure the anchor is lowered from the **bow** slowly, not thrown over. Play out enough anchor line to the required scope (i.e. a scope of 5:1 in sheltered area), then tie off the line on the **bow** cleat;
- Make sure that once the line is secured, you backup your vessel slowly until the anchor line goes taut. This indicates that the anchor is set into the bottom;
- **Never set an anchor over the side or over the stern of a boat under 6m in length. If waves build up, the boat could be swamped and sink; and**
- Attaching an anchor chain between an anchor and the anchor line weighs down the anchor and helps it set into the bottom.



# DISTRESS AND SIGNALLING EQUIPMENT

## Marine Distress Signals

All boaters are required to assist those in distress if it can be done without endangering their own life or the safety of their vessel.

If you have an operating VHF marine radio or cell phone, you must also contact the nearest *Joint Rescue Coordination Center (JRCC)* or the *Marine Communication Traffic Service* (*MCTS)* center and inform them of the type and location of the distress signal that you saw or heard.

It is an offence to send a false distress signal by whatever means. If a rescue unit is responding to a false call for help, it is unavailable for a real emergency, which could cost somebody their life.

Distress signals are not permitted during training sessions or during non-distress situations.

# Distress Signals

There are many different ways to indicate the need of assistance.

# VHF Marine Radio


A **Very High Frequency (VHF)** marine radio is the best way of communicating between two or more vessels when on the water.

VHF is the preferred method of distress calling and is far superior to cell phones in seeking help in boating emergencies. When a Mayday is sent out via a VHF radio, it is broadcast to Coast Guard radio stations as well as any VHF-equipped boat within range. These other boat operators may be the first to render assistance.

All VHF marine radio operators must have a **Restricted Operator Certificate Maritime (ROC-M)**. To obtain an ROC-M certificate, contact the Canadian Power and Sail Squadron (CPS) at: www.cps-ecp.ca

The Canadian Power and Sail Squadrons (CPS) has been delegated by the Government of Canada to deliver VHF/ROC-M training and test services.

REMEMBER: VHF radio is considered the best way to call for help because other boaters will be alerted of the emergency at the same time as the Coast Guard. These other boat operators may be the first to render assistance.

## Digital Selective Calling (DSC)

Newer VHF radios usually come equipped with Digital Selective Calling (DSC) on Channel 70. The important safety feature of VHF radio equipped with DSC is that it allows a vessel in distress to transmit a rapid distress alert at the push of a button. When connected to a global positioning unit (GPS) receiver equipped with DSC, the distress alert will also send the coordinates of the vessel in distress. Channel 70 is only available on VHF-DCS equipped radios. DSC is part of the Global Maritime Distress and Safety System (GMDSS).

### Global Positioning System (GPS)

While more and more boat operators rely on marine GPS to tell them where they are on the water, it is a good idea to keep charts on board in case of a GPS failure. The GPS is a worldwide radio-navigation system made possible by a network of satellites and\monitoring stations.

## Emergency Position Indicating Radio Beacon (EPIRB)


A distress signal can be sent by activating the alarm on an Emergency Position Indicating Radio Beacon. Once activated, EPIRBs send out an electronic distress signal with your position, which can be tracked by satellite and aircraft.

This signal is then relayed to rescue centers around the world. Not all vessels are required to carry an EPIRB, but you would be wise to carry one when operating on large open bodies of water.

EPIRBs need to be registered with the Canadian Beacon Registry at: www.cbr-rcb.ca

# Cell Phone

Cell phones can also be used to call for assistance. If you are close to shore and have cell phone coverage, you can also use *16 on your cell phone to reach The Canadian Coast Guard Marine Communications and Traffic Services Center. Make sure your cell phone batteries are fully charged prior to heading out on the water.

## Limits of A Cell Phone

Limits of a cell phone include:

- They are very limited in coverage and only accessible when you are in the range of a cell phone tower;
- They can lose reception or get wet and damaged;
- Calling from your cell phone does not alert nearby vessels that you are in distress – they could be the ones to help you if they could hear you; and
- Some cell phone signals cannot be followed back to your location by rescuers.

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REMEMBER: Not all cell phone providers offer the (*16) service linking boaters directly with Marine Communication Traffic Service (MCTS) Centers. Boaters should test the *16 option or contact their service provider to ensure that *16 service is available prior to heading out on the water.

# Calling Procedures

If your vessel is in distress or in need of emergency assistance, you can use the **VHF channel 16** on your VHF marine radio. Channel 16 is reserved for emergencies only. Keep a list of emergency contacts on board. It is best to seek assistance early before the situation gets worse.

**Use the following procedures in your broadcast:**

- **"Mayday, Mayday, Mayday"** – which indicates there is an immediate danger to persons or ship (for example, your boat is taking on water and you are in danger of sinking or capsizing);
- **"Pan-Pan, Pan-Pan, Pan-Pan"** – indicates an urgent message concerning the safety of a person or ship but you are not in immediate danger (for example, your motor has quit and you cannot reach shore); or
- "**Securité, Securité, Securité"** - indicates a message concerning the safety of navigation or important meteorological warnings.

**After your broadcast, state the following:**

- **Name** of your vessel and call sign;
- **Position** of your vessel / nearest landmark;
- **Description** of the emergency;
- **Number** of people onboard; and
- **Type** of assistance required.

# Watertight Flashlight

In an emergency, a flashlight can be used to signal for help. Almost all vessels are required to have at least one watertight flashlight.

A watertight flashlight qualifies as a navigation light on non-powered vessels (canoes, rowboats, or sailing dinghies) as well as on sailboats less than 7m. Flashlights can be used as an alternative to flares for certain vessels. A kayaker should display a flashlight at night to prevent a collision.

**An S.O.S distress signal can be sent by turning on and off the flashlight in the following pattern :**

- Three short bursts;
- Three long bursts; and
- Three short bursts.

REMEMBER: Check the flashlight batteries before each trip. It is a good idea to carry extra batteries on board in a sealed bag.

# Signaling Distress .. Other Methods

Some distress signals can only be used in daylight conditions.

## Distress Cloth / Code Flags

- Orange cloth/flag with a black circle and square shape, or an N over C.
- Fly the distress cloth from the mast or place it on top of the boat.

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## Arm Signal

- Raising and lowering outstretched arms repeatedly.

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## Dye Marker

- Orange dye released into the water is recognised as a distress signal.

# Flares

Pyrotechnic distress signals (flares and smoke bombs) can be highly visible.

**Pyrotechnic distress signals must be:**

- Kept in good condition;
- Within their expiry date;
- Stored vertically in a cool, dry, secure location;
- Stored in a red or orange watertight container marked "DISTRESS SIGNALS"; and
- Safely stored according to the manufacturer's recommendations.

**The number of flares required on a vessel depends on the:**

- Length and type of the vessel;
- Its area of operation; and
- The type of equipment onboard.

All approved flares are valid for only four (4) years from their date of manufacture, which is stamped on every flare. All pyrotechnic devices must be approved by Transport Canada.

Consult your local law enforcement agency or a local fire department for advice on the safe disposal of out-of-date pyrotechnic devices; do not throw them overboard.

REMEMBER: Always read and follow all the manufacturer's instructions before using a pyrotechnic device.

# Flares.. Continued

There are four main types of pyrotechnic devices (Types A, B, C, and D):

- **Type A: Rocket Parachute Flare** - An aerial flare that, when launched, reaches a height of approximately 300m and then floats down beneath a parachute.
- **Type B: Multi-Star Flare** - An aerial flare that, when launched, fires two red stars to a height of 100m. They burn for 4 to 5 seconds and are visible from the air or from the surface.
- **Type C: Hand Flare** - A red-flame torch that can be held in the hand. It has limited visibility and is best used to help rescuers pinpoint your location during an air search.
- **Type D: Buoyant or Hand Smoke Signal** - A smoke bomb that can be held in the hand or left to float on the water.

## Tips on Using Flares

You may use flares only in an emergency when you believe there is a chance of them being seen.

- **Aerial Flares -** Fire aerial flares at an angle into the wind. In strong wind, lower the angle to 45 degrees, at most.
- **Hand-Held Flares -** When lighting the flare, hold it clear of the boat and downwind. Do not look directly at the flare while it is burning.

CHAPTER 3

# NAVIAGTION EQUIPMENT

# CHAPTER 3

## Navigation Lights

Navigation lights are required if a vessel is **operated between sunset and sunrise or in periods of restricted visibility.** These lights ensure that the vessel is visible from all sides after dark or in poor visibility (fog or rain).

The colour and location of navigation lights displayed by a vessel vary depending on the size of the vessel, whether it is sail-driven or power-driven, and whether it is underway or at anchor.

Navigation lights also help vessels that are converging on crossing courses to determine which has the right of way. Lights must be plainly visible at different distances, depending on the length of the vessel (refer to Rule 22 in the *Collision Regulations* for more details).

Since light configurations differ between power-driven vessels and sailboats, navigation lights can help you to determine if the vessel you are meeting is under power, under sail, or at anchor. This information, combined with the colours of the lights that you see, will help you determine if you should stand on or give way.

Ensure your lights are always in good working order. Always test your vessel's lights before heading out on the water. Carry spare bulbs on board as a bulb could burn out at any time.

REMEMBER: Navigation lights must be displayed from sunset to sunrise and in restricted visibility.

# Types of Lights

**Port Sidelight** - Displays a red light on the port side (left), showing an unbroken light over an arc of the horizon of 112.5 degrees.

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**Starboard Sidelight** - Displays a green light on the starboard side (right), showing an unbroken light over an arc of the horizon of 112.5 degrees.

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**Sternlight** - A white light placed as close as possible to the stern (back), showing an unbroken light over an arc of the horizon of 135 degree.

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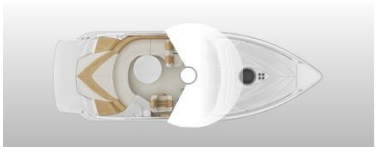
**Masthead Light** - A white light placed over the fore and aft centerline of the vessel, showing an unbroken white light over an arc of 225 degrees.



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**Towing Light** - A yellow light having the same characteristics as a sternlight.

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**All-round Light** - A light showing an unbroken light over an arc of the horizon of 360 degrees.

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**Flashing Light** - A light that flashes at regular intervals, at a frequency of 120 or more per minute.

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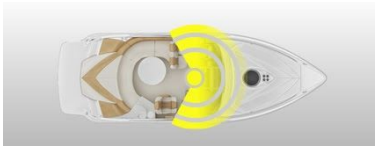
**Special Flashing Light** - A yellow light that flashes at a frequency of 50-70 flashes per minute. It is mounted as far forward over the front and rear centerline of the vessel. It displays an unbroken arc of yellow light no less than 180 degrees and no more than 225 degrees.



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**Blue Flashing Light** - An all-round blue light that flashes at regular intervals of 50-70 flashes per minute. Police boats and Canadian Coast Guard Auxiliary boats display blue flashing lights.

# Lights: Power Driven Vessels

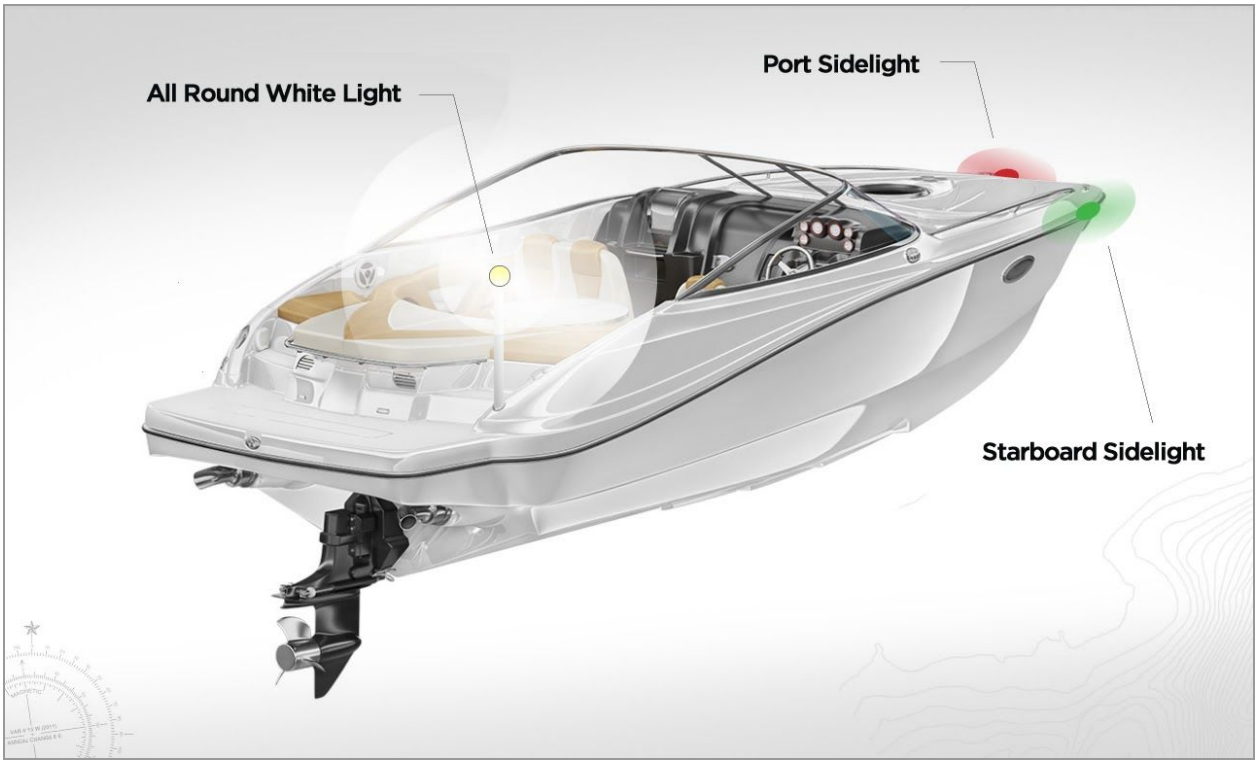
All power driven vessels operating under periods of darkness or reduced visibility must display the following:

- **Sidelights:** The port sidelight displays a red light through a horizontal arc of 112.5 degrees. The starboard sidelight displays a green light through a horizontal arc of 112.5 degrees. Sidelights are mounted so that the light shows from straight ahead to 22.5 degrees abaft the beam on its respective side. On a vessel of less than 20 metres in length, the sidelights may be combined with one lantern installed on the bow of the vessel.
- **All round white light:** - A white light shining constantly over the horizon at an arc of 360 degrees.

If a vessel is **more than 12 metres** in length, it must display, from sunset to sunrise, a white masthead light forward and a stern light which together will display 360 degrees of white light.

If a power-driven vessel is **less than 12 metres** in length, it may, in addition to sidelights, exhibit an all-round white light instead of the masthead light and the sternlight *(see image below)*.

REMEMBER: A port sidelight displays a red light on the port side (left when facing forward in the boat) and a starboard sidelight displays a green light on the starboard (right).



# Lights: Sailboats

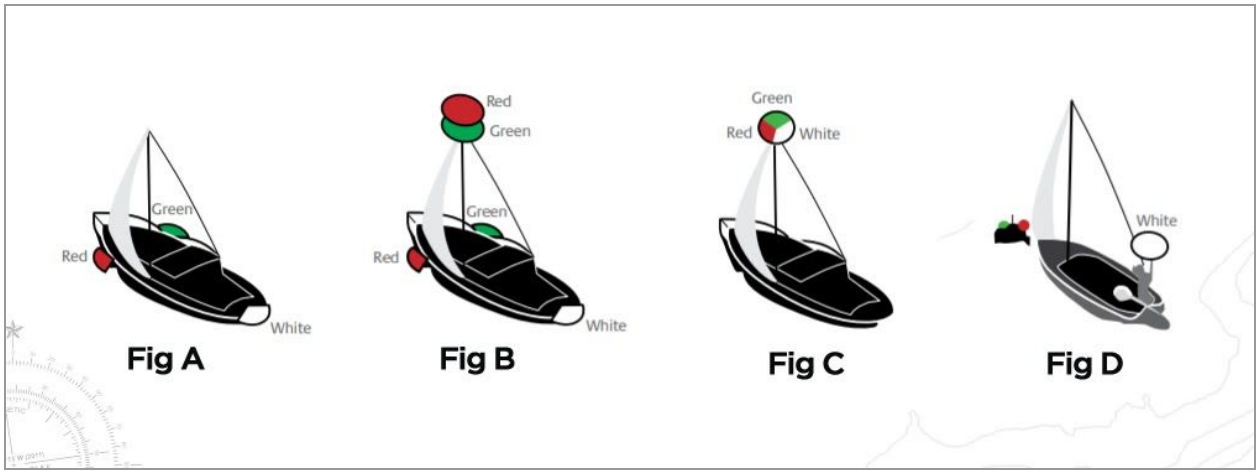
A vessel under sail must display red and green sidelights, along with a sternlight *(Fig. A)*.

**Sail-driven vessels under 20 m in length have the option of displaying :**

- Two all-round lights near the top of the mast (an all round red light over and all round green light). In addition to the green and red sidelights and stern light *(Fig. B)*; or
- A tri-light at the top of the mast (in lieu of sidelights and a stern light) while underway between sunset and sunrise. A tri-light is divided into three sectors: a red light showing through a horizontal arc of 112.5degrees, a green light displayed through an arc of 112.5degrees, and a white light (to show across the stern) displayed through an arc of 135 degrees *(Fig. C)*.

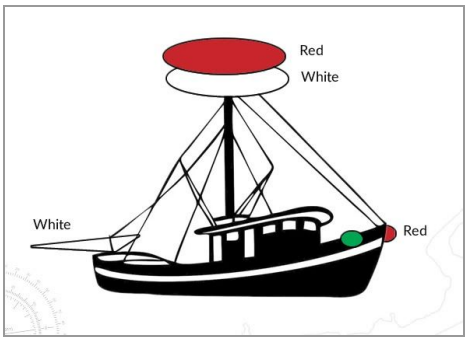
For non-powered vessels and/or sailing vessels that are under 7m in length the operator must have readily at hand a **waterproof flashlight** or lantern showing a white light so that an approaching boat can be signaled in time to avoid a collision. It is sometimes effective to use the light to illuminate the sail *(Fig. D)*.

**Navigation light options for sail boats are as follows :**



# Lights: Other Vessels

## Fishing Boats




Fishing Vessels are required at night to exhibit **two all-round lights in a vertical line**, the upper being red (green if trawling) and the lower white, or a shape consisting of two cones with their apexes together in a vertical line, one above the other.

You must stay well clear of all fishing vessels.

REMEMBER: A fishing vessel will display: sidelights, a sternlight and two all-round lights (red over white)

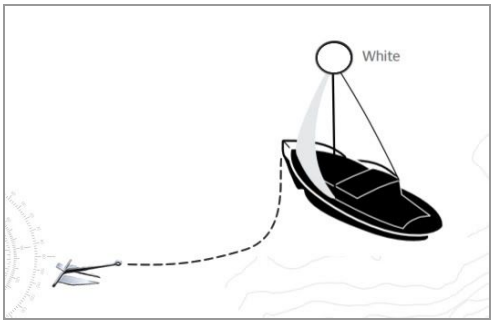
## Vessel Under Oars or Paddles

Vessels under oars (such as canoes, kayaks and rowboats) without a power supply to operate navigation lights must carry a **waterproof flashlight or lantern** showing a white light to signal their presence to other vessels when traveling in the dark. The light must be readily available to use at any moment to prevent a collision.

***Note :*** Small rowboats, canoes and kayaks sit very low in the water and can easily sink or capsize if swamped by large waves. If operating a powerboat, you need to slow down and be aware of the wake your boat is producing around small paddle crafts.

REMEMBER: To prevent a collision, the minimum a rowboat should display at night is a flashlight.

## Vessels at Anchor




If a vessel (including sailboats and human-powered vessels) under 50m in length is at anchor, it must display **an all-round light (360 degrees)** between the hours of sunset and sunrise.

# Lights : Other Vessels

## Towboats

When a vessel is towing or pushing and the tow is less than 200m (656 feet) from bow to stern, the tow vessel must display **sidelights, a stern light, a yellow light directly above her stern light, and two masthead lights in a vertical line.**

When the tow is greater than 200m (656 feet) from bow to stern, the tow vessel shall display three masthead lights in a vertical line.

The object or vessel being towed or pushed may display a **flashing yellow light** in addition to standard navigation lights.

Depending on the configuration, the tow vessel and vessel(s) or object(s) being towed or pushed may be identified as a single lit vessel or separate lit vessels.

REMEMBER: Be careful of submerged tow lines not visible to boaters. Never travel between a tow vessel and the object or vessel being towed!

## Pleasure Craft Towing Another Boat

While on the water, you may be asked to assist another boat by towing it to a safe location. When doing so it is important to make sure your boat and the boat you are towing are as visible as possible. You must display your regular navigation lights and illuminate the tow rope by using a flashlight or another light source. This will help prevent other boaters passing between the two boats and hitting the tow line.

## Government or Police Vessels

A blue flashing all-round light is used by police and enforcement agencies. If you see a blue flashing light you should slow down and be prepared to stop if requested or approached by a police boat.

# Sound Signalling Devices and Appliances

Sound travels well over water. Thus, sound signaling devices are an excellent means of:

- Communicating your maneuvering intention;
- Alerting others of your presence in restricted visibility; and
- Drawing attention to emergencies.

Sound signals are sent by emitting a continuous or intermittent sound with a horn, whistle or explosive signal.

## Difference between Sound Signalling Appliance and Device

- **Sound-Signalling Appliance -** Is permanently fitted on the vessel (i.e. horn, gong or bell).
- **Sound Signalling Device -** Is simply carried on board - this can be a gas horn or a pealess whistle.

Vessels must have an efficient means of producing sound signals based on the vessel's length:

- Vessels less than 12m (39.4 feet) in length not already fitted with a sound signalling appliance must carry a sound signalling device such as a pealess whistle or a horn (electric or compressed gas);
- Vessels 12m (39.4 feet) or more in length must carry a sound signalling appliance (whistle) on board;
- Vessels 20m (65.6 feet) or more in length must have a fitted bell in addition to a whistle.

REMEMBER: A sound signalling device or appliance is required on **all** pleasure craft.

# Sound Signals - Navigation

There are no lines on the water as on roadways. Operators have to understand both sound and light signals to communicate to others what they are about to do and understand what other operators are going to do.

Sound signals are frequently used by commercial-type vessels (i.e. cargo ships, ferries etc.) operating in busy waterways and/or ports.

Sound signals consist of short (1 second) and prolonged (4-6 seconds) blasts of a vessel's horn or whistle.

**The following are some basic examples of some common sound signals and their meanings:**

| SOUND | SOUND MEANING |
|---|---|
| **One short blast** | "I am altering my course to starboard" |
| **Two short blasts** | "I am altering my course to port" |
| **Three short blasts** | "My engine is in reverse" |
| **One prolonged blast** | "Warning - departing dock or entering/exiting blind spot" |
| **Five short blasts** | "Danger - I do not understand your intentions" |

REMEMBER: Five short blasts  means "Danger - the vessel operator does not understand your intentions"

# Sound Signals - Restricted Visibility

You should use sound signals to alert other boaters to your presence in the area, if visibility is restricted (due to fog, rain etc).

**The following are examples of sound signals used in restricted visibility:**

| VESSEL TYPE | SITUATION | SOUND REQUIREMENT |
|---|---|---|
| Power Vessel | Underway | Prolonged blast every two minutes. |
| Sailing Vessel | Underway | Prolonged blast + two short blasts every two minutes. |
| Sailing Vessel | Underway but not moving | Two prolonged blasts every two minutes. |
| Any Vessel | Anchored | Five seconds of rapid blasts / bell ringing every minute. |
| Any Vessel | Run aground | Three bell strokes + five seconds of rapid bell ringing + three bell strokes every minute. |

# Navigation Aids

## Radar Reflector

A radar reflector is a metallic device that helps small boats show up on the radar screens of larger boats.

**The best place to install a radar reflector is above all equipment and as high as possible.**

All non-metallic vessels and all vessels less than 20m in length should be equipped with a radar reflector mounted above the superstructure and not less than 4m above the water, if possible.

**You are not required to carry a reflector if:**

- You operate during daylight or in areas with limited traffic and favourable environmental conditions;
- It is not essential to the safety of your boat, it is impractical to mount, or if you operate where radar is not used by other vessels.

## Magnetic Compass

A magnetic compass is used to measure a boat's course and direction in all weather conditions and does not require batteries or electricity to function.

**A magnetic compass can be used to:**

- Take bearings of objects (floating and fixed) and can assist in plotting a position on a chart; and
- Determine another vessel's course relative to your vessel's course (another vessel that keeps a constant bearing and reduction in range could indicate a possible collision course).

Due to the nature of a magnetic compass, it can be influenced by other metallic objects and electronic devices. For this reason, it's important to keep the magnetic compass in an area free of magnetic and electrical interference. A magnetic compass may be required depending on the vessel's length, if the vessel is operating more than 1 nautical mile from shore and/or outside of navigational sea marks.

# Marine Charts

Nautical charts (marine charts) are a useful source of information to boaters, especially on water depth, the type of bottom, the type of shoreline, current direction, coastal altitude, easily identifiable landmarks, and aids to navigation.

Before you travel in a new area, make sure you only use the most recent and up to date nautical charts available to determine whether you will encounter any overhead or underwater hazards. Obtain as much information as possible on the area that you plan to visit in your boat.

Reading marine charts in conjunction with other publications such as Sailing Directions and/or with tide and current tables will indicate water depths, times of low, slack, and high tides, and the direction and rates of flow.

- The **Canadian Hydrographic Service** publishes marine charts to help boaters with navigation.
- The Canadian Hydrographic Service also publishes the **Canadian Tide and Current tables.**
- The Canadian Tide and Current Tables provide information about tides, as well as direction and rates of water flow.
- **Fisheries and Oceans Canada** publishes a wide range of information to help boaters understand their marine charts.
- **Sailing Directions** is a valuable free publication produced through the Canadian Hydrographic Service. This publication provides additional information not always shown on nautical charts.
- Charts and Cruising Guides will help you identify places to take shelter in event of foul weather

To know which regional chart is most appropriate for your activity, consult the Canadian Hydrographic Service's **Nautical Chart Catalogue**. This catalogue is a large map showing the area covered by each available chart. For information on how to obtain charts, visit the Canadian Hydrographic Service website: www.charts.gc.ca

REMEMBER: It is important to have up to date nautical charts so you can be aware of the latest changes on routes, buoys and water depth.

# Marine Charts .. Continued

To help make navigation safer, the law requires you to carry the following for each area you plan to boat in:

- The latest edition of the **largest scale** nautical chart (when available); and
- The latest edition of related documents and publications, including Notices to Mariners, Sailing Directions, tide and current tables, and the List of Lights, Buoys and Fog Signals.

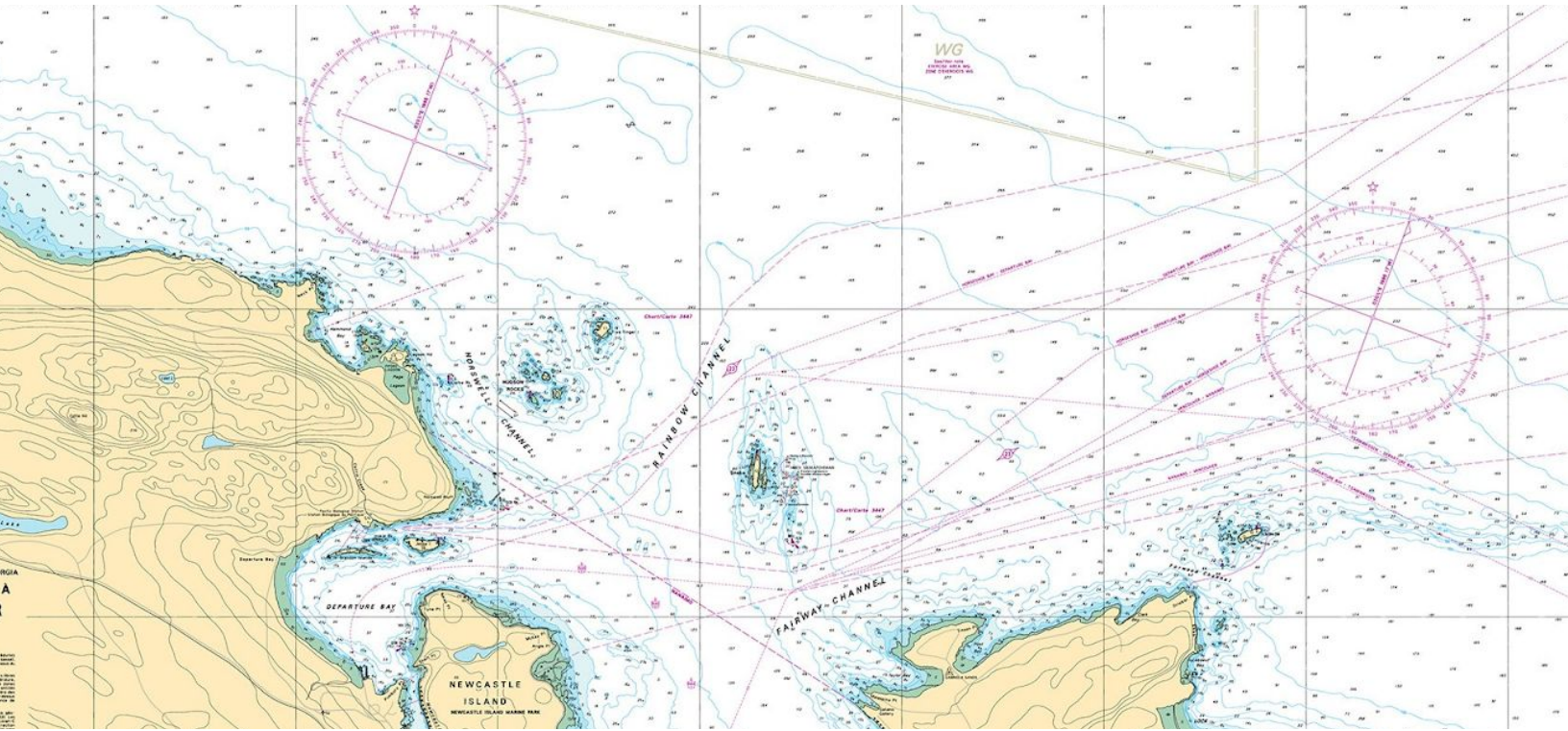
You must be able to plot your position/course and read the chart symbols (i.e. dangers, buoys etc.).

The documents, charts and publications may not be necessary if your boat weighs less than 100 tons and that you have sufficient knowledge of the waterways including:

- Shipping routes;
- Lights, buoys and marks;
- Boating hazards; and
- Boating conditions, such as tides, currents, ice and weather patterns.

If you are boating in an area not covered by marine charts, ask knowledgeable local residents for information on potential water hazards such as low-head dams, white water, and shoals.

If you are using GPS and/or electronic charts, always keep paper charts on board as a backup.



# Required Safety Equipment

According to the *Small Vessel Regulations*, the following is a list of the minimum safety equipment that all vessels operating in Canadian waters must have on board, depending on the **type** and **length** of the boat.

**You can find the length of your boat:**

- By reading the manufacturer's product information; or
- By measuring it yourself (from the front outside surface of the hull shell to the back outside surface of the hull shell – bow to stern).

Boat operators must ensure that all the equipment is on board, in good working order, maintained according to the manufacturer's instructions, and readily accessible in case of emergency. All fire extinguishers must be serviced and kept fully charged. Your safety and the safety of your passengers depend on it.

For additional specific equipment requirements (e.g. visibility arc of lights, sound signaling appliances etc) based on the type of pleasure craft and its length, refer to the *Collision Regulations* and the *Small Vessel Regulations*.

These equipment requirements apply only to pleasure craft and are the same whether you own, rent or borrow a boat in Canada.

REMEMBER: *Readily accessible* - means being able to reach the safety equipment easily and safely under emergency conditions without the use of tools.

| BOAT TYPE AND LENGTH | PERSONAL LIFESAVING APPLIANCES | VISUAL SIGNALS | VESSEL SAFETY EQUIPMENT | NAVIGATION EQUIPMENT | FIRE FIGHTING EQUIPMENT |
|---|---|---|---|---|---|
| - **Paddleboats**<br>- **Watercycles**<br>- **Standup Paddleboards**<br>- **Sealed-Hull and Sit-on-Top Kayaks** | 1. One (1) lifejacket or PFD for each person on board*<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15 m (49'3") long | *If boat is over 6 m*<br>4. One (1) watertight flashlight 5. Six (6) flares of Type A, B, C or D, only two (2) can be Type D. *(See Note 2)* | 6. One (1) bailer<br>*OR*<br>One manual bilge pump *(See Note 3)*<br>*OR*<br>Bilge-pumping arrangement | 7. One (1) sound-signalling device or appliance<br>8. Navigation lights *(See Note 4)*<br>9. One (1) magnetic compass *(See Note 5)*<br>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<br>• 1) a sound-signalling device; and<br>• 2) a watertight flashlight if the boat is used after sunset or before sunrise or in periods of restricted visibility. | | | | |
| - **Canoes**<br>- **Kayaks**<br>- **Rowboats**<br>- **Rowing Shells**<br>- **Other Human Powered Boats** | 1. One (1) lifejacket or PFD for each person on board<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15 m (49'3") long | *If boat is over 6 m*<br>4. One (1) watertight flashlight<br>5. Six (6) flares of Type A, B, C or D, only two (2) can be Type D. *(See Note 2)* | 6. One (1) bailer<br>*OR*<br>One manual bilge pump *(See Note 3)*<br>*OR*<br>Bilge-pumping arrangements | 7. One (1) sound-signalling device or appliance<br>8. Navigation lights *(See Note 4)*<br>9. One (1) magnetic compass *(See Note 5)*<br>10. One (1) radar reflector *(See Note 6)* | None |
| - **Sailboards**<br>- **Kiteboards** | 1. One (1) lifejacket or PFD for each person on board*<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15 m (49'3") long | None | 5. One (1) manual propelling device<br>*OR*<br>One (1) anchor and at least 15 m (49'3") of cable, rope or chain in any combination<br>6. One (1) bailer or manual bilge pump *(See Note 3)* | 7. One (1) sound-signalling device or appliance<br>8. Navigation lights *(See Note 4)*<br>9. One (1) magnetic compass *(See Note 5)*<br>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 :<br>• 1) a sound-signalling device; and<br>• 2) a watertight flashlight if the boat is used after sunset or before sunrise or in periods of restricted visibility.<br>NOTE: Kiteboarders and sailboarders should not wear a lifejacket or PFD that is fitted with an automatic inflator. | | | | |

| BOAT TYPE AND LENGTH | PERSONAL LIFESAVING APPLIANCES | VISUAL SIGNALS | VESSEL SAFETY EQUIPMENT | NAVIGATION EQUIPMENT | FIRE FIGHTING EQUIPMENT |
|---|---|---|---|---|---|
| **- Personal Watercraft (PWC)** | 1. One (1) lifejacket or PFD for each person on board*<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15 m (49'3") long | 4. One (1) watertight flashlight OR Three (3) flares of Type A, B, C or D, only one (1) can be Type D *(See Note 2)* | 5. One (1) manual propelling device OR One (1) anchor and at least 15 m (49'3") of cable, rope or chain in any combination<br>6. One (1) bailer or manual bilge pump *(See Note 3)* | 7. One (1) sound-signalling device or appliance<br>8. Navigation lights *(See Note 4)*<br>9. One (1) magnetic compass *(See Note 5)*<br>10. One (1) radar reflector *(See Note 6)* | 11. One (1) 5BC fire extinguisher |
| | * If every person on board a personal watercraft is wearing a lifejacket or a PFD of an appropriate size, you are only required to carry:<br>• 1) a sound-signalling device;<br>• 2) a watertight flashlight or three (3) flares of Type A, B, C or D, only one (1) can be Type D;<br>• 3) a magnetic compass if the personal watercraft is navigated out of sight of navigation marks; and<br>• 4) navigation lights if the personal watercraft is used after sunset or before sunrise or in periods of restricted visibility.<br>NOTE: Lifejacket or PFD must be inherently buoyant. | | | | |
| **- Sail and Power Boats up to 6 m (19'8")** | 1. One (1) lifejacket or PFD for each person on board<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15 m (49'3") long | *If boat is equipped with a motor*<br>4. One (1) watertight flashlight *OR* Three (3) flares of Type A, B, C or D, only one (1) can be Type D. *(See Note 2)* | 5. One (1) manual propelling device *OR* One (1) anchor and at least 15 m (49'3") of cable, rope or chain in any combination<br>6. One (1) bailer or manual bilge pump *(See Note 3)* | 7. One (1) sound-signalling device or appliance<br>8. Navigation lights *(See Note 4)*<br>9. One (1) magnetic compass (See Note 5)<br>10. One (1) radar reflector (See Note 6) | 11. One (1) 5BC fire extinguisher if equipped with an inboard engine, a fixed fuel tank of any size, or a fuel burning cooking, heating or refrigerating appliance |
| **- Sail and Power Boats over 6 m and up to 9 m (19'8" - 29'6")** | 1. One (1) lifejacket or PFD for each person on board<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15 m (49'3") long *OR* One (1) lifebuoy attached to a buoyant line at least 15 m (49'3") long | 4. One (1) watertight flashlight 5. Six (6) flares of Type A, B, C or D, only two (2) can be Type D. *(See Note 2)* | 6. One (1) manual propelling device *OR* One (1) anchor and at least 15 m (49'3") of cable, rope or chain in any combination<br>7. One (1) bailer or manual bilge pump *(See Note 3)* | 8. One (1) sound signalling device or appliance<br>9. Navigation lights (See Note 4)<br>10. One (1) magnetic compass (See Note 5)<br>11. One (1) radar reflector (See Note 6) | 12. One (1) 5BC fire extinguisher if equipped with a motor<br>13. One (1) 5BC fire extinguisher if equipped with a fuel burning cooking, heating or refrigerating appliance |

| BOAT TYPE AND LENGTH | PERSONAL LIFESAVING APPLIANCES | VISUAL SIGNALS | VESSEL SAFETY EQUIPMENT | NAVIGATION EQUIPMENT | FIRE FIGHTING EQUIPMENT |
|---|---|---|---|---|---|
| **- Sail and Power Boats over 9 m and up to 12m (29'6" – 39'4")** | 1. One (1) lifejacket or PFD for each person<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15m<br>4.One (1) lifebuoy attached to a buoyant line at least 15 m long | 5. One (1) watertight flashlight 6. Twelve (12) flares of Type A, B, C or D, only six (6) can be Type D *(See Note 2)* | 7. One (1) anchor and at least 30 m (98'5") of cable, rope or chain in any combination<br>8. One (1) manual bilge pump *(See Note 3)*<br>OR<br>Bilge-pumping arrangements | 9. One (1) sound-signalling device or appliance<br>10. Navigation lights *(See Note 4)*<br>11. One (1) magnetic compass *(See Note 5)*<br>12. One (1) radar reflector *(See Note 6)* | 13. One (1) 10BC fire extinguisher if equipped with a motor<br>14. One (1) 10BC fire extinguisher if equipped with a fuel-burning cooking, heating or refrigerating appliance |
| **- Sail and Power Boats over 12 m and up to 24 m (39'4" – 78'9")** | 1. One (1) lifejacket or PFD for each person on board<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 15 m (49 '3") long<br>4. One (1) lifebuoy equipped with a self-igniting light or attached to a buoyant line at least 15 m (49'3") long | 5. One (1) watertight flashlight 6. Twelve (12) flares of Type A, B, C or D, only six (6) can be Type D *(See Note 2)* | 7. One (1) anchor and at least 50 m (164'1") of cable, rope or chain in any combination 8. Bilge-pumping arrangements | 9. One (1) sound signalling appliance. Two required if the boat is 20 m and over that meets the applicable standards set out in the *Collision Regulations*<br>10. Navigation lights (Note 4)<br>11. One (1) magnetic compass that meets the requirements set out in the *Navigation Safety Regulations* (See Note 5)<br>12. One (1) radar reflector *(See Note 6)* | 13. One (1) 10BC fire extinguisher at all of the following locations:<br>• at each access to any space where a fuel burning cooking, heating or refrigerating appliance is fitted;<br>• at the entrance to any accommodation area;<br>• at the entrance to the machinery space.<br>14. One (1) axe<br>15. Two (2) buckets of at least 10 L each |
| **- Sail and Power Boats over 24 m (78'9")** | 1. One (1) lifejacket or PFD for each person on board<br>2. One (1) reboarding device *(See Note 1)*<br>3. One (1) buoyant heaving line at least 30m long<br>4. Two (2) SOLAS lifebuoys, of which:<br>• one (1) is attached to a buoyant line at least 30 m (98 '5") long; and<br>• one (1) is equipped with a self-igniting light.<br>5. Lifting harness with appropriate rigging | 6. One (1) watertight flashlight 7. Twelve (12) flares of Type A, B, C or D, only six (6) can be Type D *(See Note 2)* | 8. One (1) anchor and at least 50 m (164'1") of cable, rope or chain in any combination<br>9. Bilge-pumping arrangements | 10. Two (2) sound-signalling appliances that meets the applicable standards set out in the *Collision Regulations*<br>11. Navigation lights *(See Note 4)*<br>12. One (1) magnetic compass that meets the requirements set out in the *Navigation Safety Regulations* (See Note 5)<br>13. One (1) radar reflector (See Note 6) | 14. One (1) 10BC fire extinguisher at all of the following locations:<br>• at each access to any space where a fuel burning cooking, heating or refrigerating appliance;<br>• at the entrance to any accommodation space;<br>• at the entrance to the machinery space.<br>15. One (1) power-driven fire pump located outside the machinery space, with one fire hose and nozzle<br>16. Two (2) axes<br>17. Four (4) buckets |

## Note 1 – Reboarding Device

A reboarding device is only required if the vertical height that a person must climb to reboard the boat from the water (freeboard) is over 0.5m.

## 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.

The number of flares required may be reduced by 50 percent (the number of smoke signals cannot exceed 50% of the number of smoke signals given in the tables above) if the boat has one of the following:

- A means of two-way communication*;
- A 406 MHz personal locator beacon** that is worn by the boat operator; or
- A 406 MHz emergency position-indicating radio beacon***.

* The means of two-way communication may include a Very High Frequency (VHF) marine radio, a satellite telephone or a cell phone (if the VHF radio or the cell phone is located in a coverage area.)

** A 406 MHz personal locator beacon (PLB) must meet the requirements under the *Radiocommunication Act*. All Canadian coded PLBs should be registered with the Canadian Beacon Registry at https://www.cbr-rcb.ca/cbr/

*** A 406 MHz emergency position-indicating radio beacon (EPIRB) must meet the requirements of the Ship Station Radio Technical Regulations and must also be registered with the Canadian Beacon Registry. See above.

## 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.

## Other Exceptions to Equipment Requirements

There are further exceptions to the required equipment for specific vessel types. Additional information on the following exceptions can be found in Section 2 Subparts 3, 4, and 5 of the Canadian Small Vessel Regulations

## Requirements for Boats Involved in Competition

If you use your boat for racing you may be allowed to carry alternative safety equipment during:

- formal training;
- an official competition; or
- final preparations for an official competition.

## Some Useful Definitions

**Formal training**
Practice for an official competition under the supervision of a coach or official certified by a governing body.

**Official competition**
Competition or regatta organized by a governing body or by a club or an organization that is affiliated with a governing body.

**Final preparation for an official competition**
Activities scheduled by the event organizer to prepare for the competitions at the competition venue.

**Safety craft**
Vessel, aircraft or other means of transport with a crew on board for watch and rescue activities during formal training, final preparation or official competitions.

Racing canoes, racing kayaks and rowing shells involved in competition
Racing canoes, racing kayaks and rowing shells do not have to carry the equipment listed in this guide if they are in formal training, in an official competition or in final preparation for an official competition and:

- are attended by a safety craft that, in addition to its own safety equipment, carries a lifejacket or PFD that fits, for each crew member of the racing boat with the biggest crew; or
- if they carry:
  - a lifejacket or PFD that fits, for each crew member;
  - a sound-signalling device; and
  - a watertight flashlight if operated after sunset, before sunrise or in periods of restricted visibility.

## Racing Pleasure Craft (other than Canoes, Kayaks and Rowing Shells) Involved in Competition

Racing-type boats do not have to carry the equipment listed in this guide if they:

- are engaged in formal training, in an official competition or in final preparation for an official competition;
- are operated under conditions of clear visibility;
- are attended by a safety craft; and
- carry the safety equipment required by the rules of their sport's governing body.

## Sailboards or Kiteboards Involved in Competition

Sailboards or kiteboards do not have to carry the equipment listed in this guide if they are engaged in an official competition where an attending safety craft carries lifejackets or PFDs that fit the sail/kite boarders and that can be put on in the water (It is not recommended that lifejackets or PFDs be fitted with an automatic inflator).

# Additional Suggested Items

If you plan to be on the water for more than a few hours, you may want to store the following items on board:

## Spare clothing in a watertight bag

Weather conditions can change quickly, so be prepared.

## Drinking water and snacks

Drinking water and snacks will help you avoid fatigue and dehydration.

## Tool kit and spare parts

You may need to make repairs when you are out on the water. Take along a tool kit and spare parts like fuses, bulbs, a spare propeller, nuts and bolts, penetrating oil, duct tape and spark plugs. You should also have and know how to use the tools and materials you need to seal hull leaks until you get to shore.

Bring the owner's manual and any other guidebook you might need on your trip.

## First aid


When boating, you may end up far from medical help, so take a first aid kit with you. Store it in a dry place and replace used and outdated contents regularly. Pack it to meet your specific needs.

Do you know the symptoms of cold shock, hypothermia, heat exhaustion and allergic reactions? Do you know how to perform CPR or treat shock? First aid knowledge can make the difference between permanent injury and full recovery, or even life and death.

To learn more about first aid training, contact the nearest training provider.

CHAPTER 4

# BEFORE YOU GO

# CHAPTER 4

## Checking the Weather

Understanding weather is a key aspect of boating safety. The operator of a pleasure craft should check the weather forecast before making the decision to head out, to prevent putting the craft or its passengers at risk.

You should also be aware of local factors (such as topography) that may affect the weather. Local people who are familiar with the area can be a good source of information for specific situations. Summer thunderstorms can strike quickly and without warning when you are navigating. Remember to keep an eye on the sky. If the sky starts to look dark and cloudy and conditions are changing rapidly, head for shore.

**Marine weather forecasts can be obtained in a number of ways, including from:**

- Personal observations;
- Newspapers;
- Marine Radio (VHF);
- Environment Canada;
- Regular am and fm radio weather forecasts;
- Television weather channels.

**If you obtain a weather forecast from Environment Canada, be sure that you understand the following terms:**

- **Light Winds** - Are winds that are less than 12 knots (22 km/h).
- **Moderate Winds** - Are winds that are in the range of 12 to 19 knots (22 to 35 km/h).
- **Strong Winds** - Are sustained wind speeds in the range of 20 to 33 knots (36 to 61 km/h).
- **Small Craft Warnings** - Are issued when strong winds (sustained wind speeds in the range of 20 to 33 knots) or waves 3 to 6m are expected.
- **Gale Warnings** - Are issued when sustained winds of 34 to 47 knots (62 to 86 km/h) are expected.
- **Storm Warnings** - Are issued when sustained winds in the range of 48 to 63 knots (87 to117 km/h) or waves 9 to 16m are expected.

REMEMBER: 1 Knot is equal to 1.85 km/h or 1.1 mph.

# Storm Watch

When you get to the water, make sure that the conditions you see match those predicted in weather forecasts for that day. Continue to keep an eye on the weather while you are underway, so you can take action and seek shelter before a storm arrives.

Summer thunderstorms and lightning can strike quickly and unexpectedly. Head for shore if the sky starts to look dark and cloudy, especially if conditions are changing rapidly (check your charts in advance to know where to seek shelter).

**Other good indications of approaching bad weather are:**

- A falling barometer reading;
- Increasing wind and wind direction change;
- Rapid build-up of high wave conditions;
- Bad weather tends to approach from the west (however, storms from the east tend to be more powerful); and
- Watching the movement of other boaters and monitoring radio and weather channels frequently.

REMEMBER: Head for shore if the sky starts to look dark and cloudy.

# Caught in a Storm

If you get caught out on the water in bad weather or you feel there is an approaching storm, take the following steps to prepare:

- Ensure that all passengers are wearing a properly fitted lifejacket or PFD;
- Slow down to ensure you can maintain control of your pleasure craft;
- Always proceed with caution;
- Stay alert and keep a sharp look out for approaching boats and debris in the water;
- Prevent water from entering the boat by closing all hatches and ports;
- Make sure all passengers are sitting low and near the centerline in the boat;
- Secure loose gear but have emergency gear (anchor, bailers, and paddles) ready for use;
- Head for the nearest marina that you can approach safely to take shelter, especially when there is lightning present;
- If lightning is present, unplug all electrical items, remain low in the boat and away from metal objects;
- If your engine fails; prevent the current from carrying your vessel into shallow water or onto rocks by dropping your anchor;
- To keep smaller boats, such as kayaks, stable and prevent rolling in high waves, it is recommended to point the bow into the waves at a 90 degree angle;
- To keep larger boats, such as a cabin cruiser, stable and prevent rolling in high waves it is recommended to point the bow of the boat into the waves at a 45 degree angle; and
- Do not hesitate to contact a Coast Guard MCTS Center (i.e. VHF channel 16) if you become overcome by fog while operating near commercial traffic lanes.

REMEMBER: After a storm with heavy rain, always proceed with caution. Heavy rain can cause water levels to rise in streams and rivers, which can lead to more debris on the water's surface.

# Local Hazards

Being prepared goes beyond ensuring that your boat is properly equipped and maintained.

**Before you travel in a new area, you should:**

- Check nautical charts for overhead obstacles, bridges and underwater cables in your boating area;
- Read nautical charts with publications like Sailing Directions. Looking at tide tables and current atlases will also help you learn about water levels, times of low, slack and high tides, and the direction of water flow;
- Stay away from swimming areas – even canoes and kayaks can injure swimmers;
- Avoid boating too close to shore; and
- Talk to local residents who know the waters if you are in an area that is not covered by marine charts. They may be able to point out low-head dams, rapids and white water, and describe local wind conditions, currents and areas of rapid high-wave build-up.

# Rapids

Boaters should stay clear of rapids and strong currents if possible. Rapids have strong turbulent currents and can conceal rocks just below the surface. Rapids and fast flowing currents can:

- Easily swamp a vessel and/or cause it to overturn;
- Overpower the vessel - causing it to lose control;
- Make difficult to recover a man overboard in an emergency; and
- Easily result in personal injury or death.

REMEMBER: Rapids have strong turbulent currents, can conceal rocks just below the surface, can easily swamp a vessel and/or cause it to overturn, can overpower the vessel - causing it to lose control, and can easily cause personal injury or death to a person in the water.

# Trip Plan (Sail Plan)


TRIP PLAN

MYBOATCARD®

BOAT INFORMATION

BOAT NAME
REGISTRATION NUMBER
YEAR AND MAKE
COLOR(S)
TYPE OF BOAT (POWER OR SAIL)
TYPE OF ENGINE
BOAT SIZE (LENGTH)
FEATURES :

PASSENGER INFORMATION

OPERATOR NAME
ADDRESS
MEDICAL CONDITION(S)
AGE
GENDER
TELEPHONE NUMBER

NAME PASSENGERS | ADDRESS | AGE | MEDICAL CONDITION(S)
1
2
3
4
5

TRIP DESCRIPTION

DATE | TIME | LOCATION | CHECK-IN TIME
DEPART
ARRIVE
DEPART
ARRIVE
DEPART
ARRIVE

SAFETY EQUIPMENT

NUMBER PFDS ON BOARD | ANCHOR | RAFT OR DINGHY | EPIRB | FOOD | WATER
PADDLES | FLARES | SMOKE SIGNALS | FLASHLIGHT | CHARTS | OTHER

INSTRUCTIONS IN CASEOF EMERGENCY

LOCAL SEARCH AND RESCUE PHONE NUMBER
PERSON TO CONTACT IN CASE OF EMERGENCY
PHONE NUMBER :

MYBOATCARD®

A trip plan, also referred to as a float plan or a sail plan, is a voyage itinerary that should include the departure time, travel route, duration of the trip, and basic details about your vessel. These details are necessary to assist search and rescue personnel in the event you do not return from your trip.

Before heading out, all pleasure craft operators (especially vessels not equipped with a VHF radio) are encouraged to file a trip plan with a responsible and trusted person familiar with the instructions to follow in case of an emergency. If this is not possible, the trip plan can be filed with any Canadian Coast Guard Marine Communications and Traffic Services Center.

If you are taking a long trip over several days, it is highly recommended that you file a daily position report (especially if you change your route). If you extend your trip, be sure to update the plan with the person with whom it is filed, to avoid that person initiating an unnecessary search and rescue.

**Always deactivate your trip plan by reporting that you have returned from your trip. This will prevent an unnecessary search from being launched. The person holding your trip plan should be instructed to contact the nearest Rescue Coordination Center if you are overdue.**

**A good trip plan should include the following information:**

- Name and license number of your vessel;
- Your vessel's type (i.e. whether it is a sailboat or power-driven);
- Name, address, and telephone number of the operator;
- Number of persons on board;
- Size, type and colour of the craft;
- Type of engine (i.e. inboard, outboard);
- Distinguishing features of the vessel;
- Type of marine radio, if any, and channel being monitored;
- Safety equipment on board, including flares, lifejackets, and life rafts;
- Description of the trip, including time of departure, time of return, proposed route, and destination;
- Instructions in case of emergency.

REMEMBER: Always deactivate your sail plan upon completion of a trip.

# TRIP PLAN

MYBOATCARD®

## BOAT INFORMATION

BOAT NAME _____ TYPE OF BOAT (POWER OR SAIL) _____

REGISTRATION NUMBER _____ TYPE OF ENGINE _____

YEAR AND MAKE _____ BOAT SIZE (LENGTH) _____

COLOR(S) _____ FEATURES : _____

## PASSENGER INFORMATION

OPERATOR NAME _____ AGE _____

ADDRESS _____ GENDER _____

MEDICAL CONDITION(S) _____ TELEPHONE NUMBER _____

| NAME PASSENGERS | ADDRESS | AGE | MEDICAL CONDITION(S) |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

## TRIP DESCRIPTION

| | DATE | TIME | LOCATION | CHECK-IN TIME |
|---|---|---|---|---|
| DEPART | | | | |
| ARRIVE | | | | |
| DEPART | | | | |
| ARRIVE | | | | |
| DEPART | | | | |
| ARRIVE | | | | |

## SAFETY EQUIPMENT

____ NUMBER PFDS ON BOARD ☐ ANCHOR ☐ RAFT OR DINGHY ☐ EPIRB ☐ FOOD ☐ WATER

☐ PADDLES ☐ FLARES ☐ SMOKE SIGNALS ☐ FLASHLIGHT ☐ CHARTS OTHER _____

## INSTRUCTIONS IN CASEOF EMERGENCY

LOCAL SEARCH ANO RESCUE PHONE NUMBER _____

PERSON TO CONTACT IN CASE OF EMERGENCY _____ PHONE NUMBER : _____

MYBOATCARD®

# Regular Inspections and Maintenance

It is important for boat operators to remember that negligence of boat maintenance and inadequate preparation for boating trips can lead to unsafe boating experiences, resulting in injuries and loss of life.

An inspection of your boat, its engine and all safety equipment on board should be performed at the beginning of the boating season each year, and also before leaving the dock on every boating trip. Boat owners must ensure that all the boat parts and equipment are fit for their intended purpose and safe to operate.

## Engine Maintenance

- Change oil according to the owner's manual or at the start of each season;
- Before each trip, check to ensure everything is working properly and nothing is loose or worn (i.e. belts, bolts and hoses);
- Make sure to remove any corrosion or oxidation build-up on the engine and battery; and


- Check and service your boat according to the owner manual or as needed.

REMEMBER: The mechanical condition of a boat should be checked at the beginning of the boating season and before leaving the dock.

## Unseaworthy Vessel

It is an offence for an operator to knowingly operate or permit someone else to operate a vessel that is unseaworthy. Such an offence carries an imprisonment term of up to five years.

REMEMBER: Charges can be laid under Criminal Code if a person knowingly operates an unseaworthy vessel and puts other people's lives in danger.

## Pleasure Craft Courtesy Check Program

Transport Canada works with the Canadian Coast Guard Auxiliary, the Canadian Power and Sail Squadrons and other boating safety organizations to offer free courtesy checks for pleasure craft.

**If you agree to a courtesy check on your vessel, a trained boating safety volunteer will board your boat to:**

- Check out the safety equipment and other requirements;
- Identify any problems; and
- Discuss general boating safety issues.

Education and prevention are the keys to this program.
Since there are never any penalties involved, it's a great opportunity to learn more about boating safety and make sure that you are ready to head out on the water.

Visit Transport Canada's Office of Boating Safety website for more information :
https://tc.canada.ca/en/marine-transportation/marine-safety/office-boating-safety

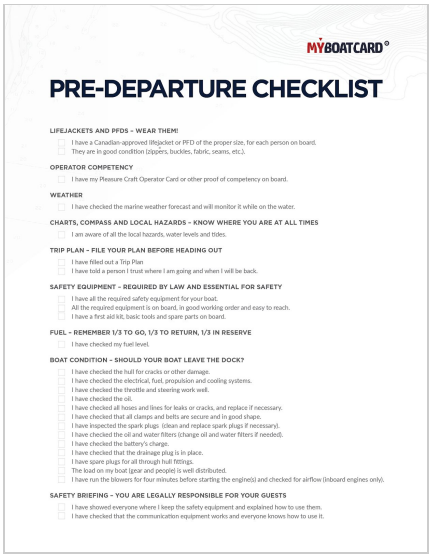
REMEMBER: The main purpose of a Pleasure Craft Courtesy Check is to review all safety equipment with a knowledgeable expert.

# Pre-departure Checklist

You should always complete a pre-departure checklist of all required equipment and supplies prior to leaving the dock to ensure your boat is in good working order and properly equipped.

Keeping in mind that it is illegal to operate a vessel that is not seaworthy. Always give the boat a quick once-over before departing; you never know what you might find that is in need of repair until you look!

According to the Canadian Coast Guard, more than 50% of calls received by Canadian Rescue Coordination Centers are from boaters who are in trouble as a result of a mechanical failure of their boat. The most common cause of a breakdown is running out of fuel.



MYBOATCARD®

PRE-DEPARTURE CHECKLIST

LIFEJACKETS AND PFDS – WEAR THEM!
- I have a Canadian-approved lifejacket or PFD of the proper size, for each person on board.
- They are in good condition (zippers, buckles, fabric, seams, etc.).

OPERATOR COMPETENCY
- I have my Pleasure Craft Operator Card or other proof of competency on board.

WEATHER
- I have checked the marine weather forecast and will monitor it while on the water.

CHARTS, COMPASS AND LOCAL HAZARDS – KNOW WHERE YOU ARE AT ALL TIMES
- I am aware of all the local hazards, water levels and tides.

TRIP PLAN – FILE YOUR PLAN BEFORE HEADING OUT
- I have filled out a Trip Plan
- I have told a person I trust where I am going and when I will be back.

SAFETY EQUIPMENT – REQUIRED BY LAW AND ESSENTIAL FOR SAFETY
- I have all the required safety equipment for your boat.
- All the required equipment is on board, in good working order and easy to reach.
- I have a first aid kit, basic tools and spare parts on board.

FUEL – REMEMBER 1/3 TO GO, 1/3 TO RETURN, 1/3 IN RESERVE
- I have checked my fuel level.

BOAT CONDITION – SHOULD YOUR BOAT LEAVE THE DOCK?
- I have checked the hull for cracks or other damage.
- I have checked the electrical, fuel, propulsion and cooling systems.
- I have checked the throttle and steering work well.
- I have checked the oil.
- I have checked all hoses and lines for leaks or cracks, and replace if necessary.
- I have checked that all clamps and bolts are secure and in good shape.
- I have inspected the spark plugs (clean and replace spark plugs if necessary).
- I have checked the oil and water filters (change oil and water filters if needed).
- I have checked the battery's charge.
- I have checked that the drainage plug is in place.
- I have spare plugs for all through hull fittings.
- The load on my boat (gear and people) is well distributed.
- I have run the blowers for four minutes before starting the engine(s) and checked for airflow (inboard engines only).

SAFETY BRIEFING – YOU ARE LEGALLY RESPONSIBLE FOR YOUR GUESTS
- I have showed everyone where I keep the safety equipment and explained how to use them.
- I have checked that the communication equipment works and everyone knows how to use it.

REMEMBER: Completing a pre-departure checklist is a good way to make sure all the necessary safety equipment is on board.

## The One-Third Rule on Fuel Use

It is always important to ensure you monitor your fuel supply and carry extra fuel. When operating a watercraft, always abide by the 1/3 rule: use 1/3 of your fuel to get to your destination; keep 1/3 of your fuel to get back to shore; and keep the other 1/3 as a reserve in case of emergency.


REMEMBER: The basic guideline for estimating the amount of fuel needed for a trip is one-third for the trip out, one-third for the return trip and one-third as reserve.

MYBOATCARD

# PRE-DEPARTURE CHECKLIST

### LIFEJACKETS AND PFDS – WEAR THEM!

- [ ] I have a Canadian-approved lifejacket or PFD of the proper size, for each person on board.
- [ ] They are in good condition (zippers, buckles, fabric, seams, etc.).

### OPERATOR COMPETENCY

- [ ] I have my Pleasure Craft Operator Card or other proof of competency on board.

### WEATHER

- [ ] I have checked the marine weather forecast and will monitor it while on the water.

### CHARTS, COMPASS AND LOCAL HAZARDS – KNOW WHERE YOU ARE AT ALL TIMES

- [ ] I am aware of all the local hazards, water levels and tides.

### TRIP PLAN – FILE YOUR PLAN BEFORE HEADING OUT

- [ ] I have filled out a Trip Plan
- [ ] I have told a person I trust where I am going and when I will be back.

### SAFETY EQUIPMENT – REQUIRED BY LAW AND ESSENTIAL FOR SAFETY

- [ ] I have all the required safety equipment for my boat.
- [ ] All the required equipment is on board, in good working order and easy to reach.
- [ ] I have a first aid kit, basic tools and spare parts on board.

### FUEL – REMEMBER 1/3 TO GO, 1/3 TO RETURN, 1/3 IN RESERVE

- [ ] I have checked my fuel level.

### BOAT CONDITION – SHOULD YOUR BOAT LEAVE THE DOCK?

- [ ] I have checked the hull for cracks or other damage.
- [ ] I have checked the electrical, fuel, propulsion and cooling systems.
- [ ] I have checked the throttle and steering work well.
- [ ] I have checked the oil.
- [ ] I have checked all hoses and lines for leaks or cracks, and replace if necessary.
- [ ] I have checked that all clamps and belts are secure and in good shape.
- [ ] I have inspected the spark plugs (clean and replace spark plugs if necessary).
- [ ] I have checked the oil and water filters (change oil and water filters if needed).
- [ ] I have checked the battery's charge.
- [ ] I have checked that the drainage plug is in place.
- [ ] I have spare plugs for all through hull fittings.
- [ ] The load on my boat (gear and people) is well distributed.
- [ ] I have run the blowers for four minutes before starting the engine(s) and checked for airflow (inboard engines only).

### SAFETY BRIEFING – YOU ARE LEGALLY RESPONSIBLE FOR YOUR GUESTS

- [ ] I have showed everyone where I keep the safety equipment and explained how to use them.
- [ ] I have checked that the communication equipment works and everyone knows how to use it.

# Safety Briefing

Before taking passengers out on the water, the operator of a pleasure craft should also conduct a pre-departure briefing with all passengers to provide them with the required safety information and emergency procedures.

**The safety briefing should include:**

- The location of personal flotation devices (PFD'S) and/or lifejackets;
- How to put on a personal flotation device or lifejacket;
- A technique for putting on a personal flotation device or a lifejacket when in the water;
- The importance of wearing personal flotation devices or lifejackets at all times;
- The location of the emergency kit;
- The location of fire fighting equipment and how to use it.
- The importance of keeping oneself low in the boat, on the boat's centerline, and holding onto a rigid part of the boat while moving around on board;
- The importance of keeping one's hands, arms, and legs inside the pleasure craft when approaching or leaving a dock;
- The effects that the motion of the pleasure craft, sunlight, waves, wind, sound, and alcohol can have on a person's reflexes and senses;
- The roles of all on board in the event of an emergency; and
- The procedure for a man overboard (MOB) scenario. Someone on board needs to always keep an eye on the person in water during a man overboard scenario.

REMEMBER: Make sure that at least one other person on board knows how to operate the boat in case something happens to you.

# Overloading

Most boating fatalities are the result of capsizing or falling overboard. Overloading, shifting of cargo, and passenger movement on smaller craft contribute to most of the capsizing or falls overboard.

Too much weight will make your boat unstable and allow waves to come on board and swamp your boat.

**To avoid this, the operator of a pleasure craft should:**

- Not overload the craft in excess of the recommended gross load capacity or the equivalent maximum number of adult persons;
- Position passengers and gear so as to distribute the weight evenly;
- Keep the cargo's center of gravity as low as possible on board the craft or stow it in lockers to prevent it from shifting; and
- Be familiar with your craft's limitations and handling.

REMEMBER: The Gross Load Capacity of your vessel can be found on the vessels Compliance Label.

Overloading is dangerous! The number of persons that can be carried safely depends on its type, the distribution of occupants, and the equipment carried. As the operator, you must obey the loading limits indicated on your vessel's capacity label.

These are indicated as either the recommended gross load capacity or the equivalent number of adult persons. The maximum load on a compliance label refers to the total weight of persons, gear, equipment, supplies, fuel and motor assembly. Keep in mind that the maximum load is calculated for fair weather conditions and should be reduced for poor weather conditions.

A vessel is less stable and more likely to capsize when it is overloaded or overpowered.

REMEMBER: Small fishing boats that are loaded with lots of fishing gear and sit low in the water are at serious risk of being swamped by a wave.

# Fuelling Procedures

Gasoline fuel and fumes are extremely hazardous! Fuel and fumes need only a single spark to cause an explosion or to start a blaze. Spilled fuel is also extremely harmful to marine life.

The following is a step-by-step guide that you should follow when refueling a boat:

**Before Fueling**

- Moor the boat securely;
- Shut down all engines;
- Ensure that all passengers are off the vessel during fueling;
- Extinguish all open flames;
- Do not smoke in the fueling area;
- Switch off all electrical equipment;
- Close all doors, windows, and ports;
- Place your on board fire extinguisher within easy reach; and
- Move all portable tanks ashore (never fuel a portable tank in the boat).

**During Fueling**

- Hold the fuel nozzle firmly against the boat's filler pipe to prevent a build-up of static electricity; and
- Know how much fuel your tank can hold and do not overfill it — you have a duty to prevent fuel spills.

**After Fueling**

- Clean up any spillage if necessary;
- Open doors, hatches and ports;
- Place your portable tanks back in the boat. All portable fuel tanks should be kept away from sparks and heat and stowed in a well-ventilated location;
- Operate your vessel's engine compartment blower for at **least four (4) minutes** immediately before starting up the engine (for inboard gasoline engine ony);
- Check for vapours from the engine compartment before you start up the engine; and
- Sniff for vapour odours in bilges and cabins.

REMEMBER: You should always run the blower for at least **4 minutes** before starting an inboard engine.

# Engine Start Up Procedure

Before starting your engine it is important to carry out a series of check:

- Check your fuel system for leaks;
- Check fuel shut off switch/valves;
- Check the flame arrester is clean, secure and undistorted;
- Check your battery is fully charged, connectors are tight and water level is correct;
- Check engine oil level is correct;
- Check engine oil color and smell;
- Sniff the air to check for fuel vapors and fumes (for gasoline engine); and
- Run the engine compartment blower for at **least four (4) minutes** immediately before starting up the engine  (for inboard gasoline engine ony).

# Fuel-Burning Appliances

The propane and butane often used in fuel-burning appliances on boats must be treated with utmost respect. These gases can be more dangerous than gasoline!

Propane and butane, like gasoline vapors, are heavier than air and will spread rapidly into the lower parts of the boat. These gases are extremely difficult to remove and are highly explosive.

To prevent accidents, always be sure to provide good ventilation when using a fuel-burning appliance.

**The following precautions should be taken when using fuel-burning appliances:**

- Use only in a well-ventilated area;
- Secure in a manner that prevents fuel leaks;
- Keep gas cylinders and tanks in a secure, well-ventilated area; and
- Follow all manufacturers' instructions.

While on a boat, you should check regularly the condition of any open-flame heating, cooking, or refrigeration system that uses gaseous fuel. Verify that the installation complies with the manufacturer's instructions.

## Ignition Protection

Every boat that has a gasoline engine or uses propane devices must use ignition-protected electrical devices. These parts are designed so that, under normal conditions, they will not ignite gasoline or propane fumes or vapour. Only use electrical components that are clearly labelled as ignition protected.

Many older boats, and even some new ones, have been fitted with converted car or truck engines. Car and boat engines are similar; car parts can and will work. However, if they are not of marine grade with ignition protection, they pose a risk for a potential explosion, serious injury or death. If you are not sure that your engine has ignition-protected parts, consult a marine mechanic.

# RESPONDING TO EMERGENCY SITUATIONS

## Rendering Assistance

All persons operating a pleasure craft in Canada, provided that he/she can do so without serious danger to his/her own craft and the persons on board, shall:

- Render assistance to all persons who are found at sea and in danger of being lost; and
- On receiving a distress signal, proceed with speed and render assistance.

If you cannot assist, make sure you immediately notify the nearest boaters or authorities who can.

# Emergency: Hull Leaks or Flooding

While operating a pleasure craft, you may strike a submerged object (such as a rock or a dead head) hard enough to cause the hull of your craft to leak.

The following set of actions should be taken in response to a hull leak or flooding (i.e. when water is seen to be rising in your pleasure craft or accumulating at the bottom of the craft):

- If the boat is moving, bring it to a complete stop - this will reduce water pressure against the hull and, thus, the amount of water entering the hull;
- Locate the source of the hull leak or flooding;
- Stop the leakage or the source of flooding if possible - some items that can be used to stop or to slow a leak include tapered soft wooden plugs, rags, foam sponges, towels, or some other soft material;
- Remove accumulations of water - water can be removed from the hold or other compartments of the pleasure craft by using either hand-held bailers, manual pumps, or bilge pumping systems as appropriate to the circumstances and the craft;
- Use or exhibit signals to indicate distress and need of assistance if necessary; and
- Ensure everyone is wearing a properly fitted lifejacket or PFD.

*Note:* The tools and materials necessary to stop hull leaks should be kept on board. Also ensure that all required safety equipment is easily accessible.

REMEMBER: If your boat springs a leak, you should: 1) locate the leak, 2) bail or pump, and 3) indicate distress.

# Emergency: Mechanical Breakdown

The following actions should be taken in the event of any breakdown during the operation of a pleasure craft:

- Ensure everyone is wearing a properly fitted lifejacket or PFD;
- Drop anchor if you have lost power and are drifting into a dangerous area;
- Investigate the problem and rectify it if possible (check the your fuel levels, fuel line and dead man switch etc.); and
- Use signals to indicate distress and need of assistance if necessary.

REMEMBER: If your engine has broken down and you are drifting to a rocky shore, you should first drop anchor.

# Emergency: Fires

If you have a fire on board, make sure everyone is wearing a lifejacket and use extinguishers to control the fire.

**Follow the procedures below if there is a small fire:**

- Stop the engine if it is safe to do so under the weather conditions;
- Position your boat so that the wind will blow the fire away from your boat;
- Pull the pin out of the extinguisher and squeeze the two levers together;
- Aim the extinguisher at the base of the flames from six feet away; and
- Sweep the discharge nozzle from side to side, continuing for a few seconds after the flames are completely out.

# Emergency: Collisions

*Collision Regulations* state that every vessel shall take all measures necessary to determine if risk of collision exists, and shall take all measures necessary to avoid a collision.

When there is a risk of collision, operators of both vessels are required to take whatever action is required to avoid contact, however if a collision is unavoidable you should reduce damage to 'sensitive' areas of both vessels.

*Note :* Every vessel should navigate at a speed that allows proper and effective action to avoid a collision.

**If you are involved in a boating accident you need to know what actions are required by law:**

- Stop your vessel;
- Immediately ensure that everyone is accounted for and check for injuries.
- Ensure that everyone is wearing a PFD or a lifejacket;
- Identify yourself and your boat, exchange ID/contact details if required;
- Provide assistance, if possible and warranted;
- Keep a record of pertinent information with dates, time, and conditions;
- Transmit distress call (i.e. VHF radio call or cellular phone) and/or visual signal if necessary; and
- File an accident report with the local law enforcement authority.

REMEMBER: Failure to stop at the scene of a collision is an offence which may result in imprisonment.

# Emergency: Capsizing, Swamping, Sinking or Grounding

The following actions should always be taken in the event that your craft should capsize, swamp, run aground, sink, or if you are involved in a collision:

- Ensure that everyone on board is wearing a PFD or a lifejacket;
- Stay with the craft when it is appropriate to do so;
- Check that all on board are accounted for and safe; and
- Use or exhibit signals to indicate distress and need of assistance as necessary.

REMEMBER: Priority must be given to persons overboard.

## Capsizing

Capsizing and falling overboard are the leading causes of boating fatalities. Overloading, shifting of loads, and passenger movement on smaller craft contribute to most of the capsizing/falls overboard accidents.

Boat operators must take action to prevent themselves and others on board from falling overboard.

If your boat capsizes but is in no danger of sinking, climb onto the overturned hull and signal for assistance.

Removing yourself from the water will prolong your survival time in cold water and make you more visible to potential rescuers. Do not leave a floating vessel to swim to shore; the shore is always more difficult to reach than it appears.

REMEMBER: If a boat capsizes in cold water, you should climb on top of the overturned boat and signal for help (do not swim to shore).

# Grounding

To free a vessel that has run aground, it may be necessary to move crew and equipment to one side to make the boat heel over.

The boat may have to be lightened by moving equipment and people to another boat. If the boat is small, it may be possible for crew members in the water to push the boat off.

**Take the following action if you are operating a powered pleasure craft and it runs aground:**

- Stop the engine to assess the situation and check to see if anyone on board is injured;
- If anyone is injured, call for assistance on VHF radio or cellular phone;
- If there are no injuries and you are not in immediate danger, assess the situation and check for any damage to your boat's hull, and for leaks or flooding;
- If yes – call for help as you may need to be towed to shore;
- If there is no damage or signs of leaks or flooding, try to get your boat loose;
- Shift the weight farthest away from point of impact/grounding;
- Try to shove off from the bottom, rock or shoal;
- If you cannot get loose or refloat, call for help on marine VHF radio or issue a distress call if necessary and consider a tow;
- Ensure everyone on board is wearing a lifejacket or PFD; and
- If grounded on a reef or uncertain location, it may be prudent to stay grounded until help arrives.

REMEMBER: The first step to take after running aground is to determine whether the passengers and the vessel are in danger.

# Emergency: Falls Overboard

Most boating fatalities are the result of drowning from falls overboard. This can be easily prevented by all boaters wearing their PFDs.

If someone falls overboard, you must be able to locate and retrieve them quickly, even at night or in rough weather, and especially in cold water. Boat operators need to provide instructions to their passengers on how to assist in the quick recovery of a person overboard.

**The following procedure should be used if someone does fall overboard:**

- Sound the alarm immediately;
- Slow down, stop if possible, and throw the person something buoyant to help stay afloat (it will serve as a marker if they become submerged);
- Assign one person to keep sight of the person overboard and to continuously point at their location;
- Manoeuver (carefully) to a position on the downwind side to recover the person (so that the person drifts toward the rescue vessel);
- As soon as you are close enough, throw the victim a buoyant heaving line or a lifebuoy secured to your boat with a line. Always try to recover the person over the windward side of the boat; and
- Be sure to turn off the propeller/engine on the vessel when retrieving from the stern.

# Emergency: Propeller Strikes

Boat engine propellers spin at very high speeds and have a lot of power. They will cause serious harm if you come in contact with one. Always operate your boat with caution to avoid any injuries from propellers; this is a common injury that can easily be avoided.

A typical three blade propeller running at 3,200 rpm can inflict 160 impacts in one second!

**To help reduce the risk of a propeller strike:**

- Turn off the engine when retrieving a person from the water;
- People in the water may not be visible from the helm. Before starting your engine, walk around the boat and look in the water to make certain that no one is in the water near the boat;
- Account for all your passengers prior to starting the engine;
- Never allow passengers to board or exit your boat from the water when engines are on – or idling (your propeller may continue to spin);
- Educate passengers about the location and danger of the propellers;
- Be especially alert when operating in congested areas and never enter swimming zones;
- Take extra precautions near boats that are towing skiers or inflatables;
- Always secure a lanyard (kill line); and
- Install a propeller cage or guard.

# Emergency: Cold Water Immersion

Capsizing and falling overboard into cold water (water temperature below 15°C) account for a high number of boating fatalities. Cold water can paralyze your muscles instantly.

**Always ensure :**

- Everyone on board is wearing a lifejacket or PFD, especially if boating in cold waters below 15°C;
- You have a functioning communication device on board;
- You are aware of situations that might lead to falling overboard to prevent them from happening (reaching overboard and improper loading).

Boaters' risk of dying increases with cold water temperatures, especially sports enthusiasts who hunt and fish from boats in cold weather. Exposure to low temperatures (such as cold water immersion or prolonged exposure to cold weather) will lead to hypothermia.

**Hypothermia** is a drop in core body temperature below the normal level. It weakens a person's muscles, reduces coordination, and slows mental functions. Hypothermia can lead to death.

## Phases of Cold Water Immersion

**1-10-1** is a simple way to remember the first three phases of cold water immersion and the approximate time each phase takes.

- **1 Minute: Cold Water Shock** - An initial deep and sudden gasp, followed by hyperventilation, muscle spasms and significant changes in heart rate and blood pressure.
- **10 Minute: Cold Incapacitation** - Over approximately the next 10 minutes, you will lose the effective use of your fingers, arms and legs for any meaningful movement. This will make it very difficult to swim (even for strong swimmers).The longer you remain in cold water, the harder it is to coordinate your movements.
- **1 Hour: Hypothermia** - Your body's temperature dips below 36 degrees Celsius, and you will experience weak, irregular or absent pulse or respiration. In the final stage, the victim will lose consciousness. Even in ice water it could take approximately 1 hour before becoming unconscious.

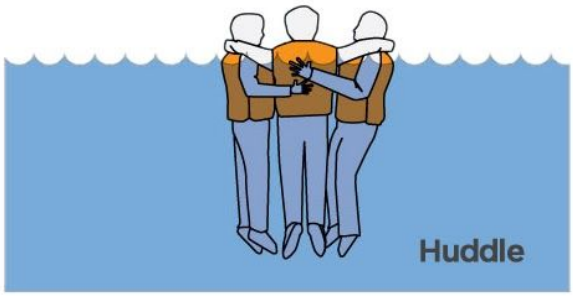
# Extend Your Survival Time

To extend your survival time in water as much as possible, you must do everything you can to conserve energy and body heat. Wearing a PFD or lifejacket delays the onset of hypothermia. The PFD helps insulate the body. In addition, energy is lost trying to stay afloat without it.

REMEMBER: Always wear a PFD or Lifejacket. Boaters often drown from cold incapacitation (swimming failure) long before hypothermia gets a chance to set in.

**While wearing a PFD or lifejacket, some positions can help persons overboard to survive longer in cold water:**

- If alone, climb onto a nearby floating object to get at least part of your body out of the water;
- If you cannot get out of the water and you are alone, adopt the **Heat Escape Lessening Position (H.E.L.P.)** by crossing your arms tightly across your chest and then drawing the knees up close; and
- If you cannot get out of the water and you are in a group, **huddle** with the other persons by getting the sides of everyone's chest close together, with arms around the mid to lower back, and legs intertwined.


If you have a warning that your boat may sink, protect yourself from the cold by wearing multiple light layers of dry clothing and a water- or wind-proof outer layer under a lifejacket or PFD.

**Extra protection from hypothermia includes:**

- Floater or survival suits (full nose-to-toes);
- Dry suits (to be used with a lifejacket or PFD and a thermal liner);
- Wet suits (to be used with a lifejacket or PFD – trap and heat water against the body); and
- Immersion suits (to be used in extreme conditions when abandoning a vessel).

# Treating Hyperthermia

Exposure to low temperatures such as immersion in cold water will lead to hypothermia. Hypothermia can be categorised into 3 stages: **Mild, Moderate and Severe.**

## Mild Hypothermia

**Mild symptoms:**

- Uncontrolled shivering;
- Slurred speech; and
- Conscious but withdrawn behaviour.

**If there is no way to get to a medical facility within 30 minutes, a mildly hypothermic person should be rewarmed by:**

- Shivering should be fueled by calorie replacement with fluids containing sugars. The sugar content is actually more important than the heat in warm liquids;
- Ensuring that the person is capable of ingesting liquids without aspirating;
- Not permitting alcohol and tobacco use, as these constrict blood flow;
- Applying external heat to high heat transfer areas such as the underarms and chest sides;
- Active heating of the skin is beneficial as it preserves energy and reduces cardiovascular stress; and
- Avoiding rubbing or massaging the surface of the victim's body or extremities as this can send cool blood to the body's core and can damage nerve endings at the skin.

## Moderate and Severe Hypothermia

This is a serious medical emergency requiring proper handling and treatment, and, in severe cases, immediate transport to a medical facility.

**Moderate symptoms:**

- Slow, weak pulse and respiration;
- Lack of coordination; and
- Confusion and fatigue.

**Severe symptoms:**

- Weak, irregular or absent pulse and respiration; and
- Lack of consciousness.

# Emergency: Carbon Monoxide Poisoning

Carbon monoxide (CO) is a **deadly** gas that we can't see, smell or taste.

CO is produced from anything that burns a carbon-based fuel (gasoline, propane, charcoal, oil, etc.) such as engines, gas generators, cooking ranges, heaters. CO acts a lot like air. It doesn't rise or fall but spreads evenly throughout an enclosed space.

Carbon monoxide is acutely toxic because it cripples the ability of the body's blood to absorb and transfer oxygen to body cells, leading to asphyxiation or suffocation. Prolonged exposure to low concentrations or very short exposure to high concentrations can lead to death.

Carbon monoxide poisoning should be taken very seriously.


**Do not confuse these symptoms as signs of seasickness or intoxication:**

- Headache;
- Nausea;
- Fatigue;
- Facial Redness;
- Irritated eyes;
- Shortness of breath; and
- Weakness or dizziness.

**Help protect yourself and others from CO poisoning:**

- Idle your engine only in well-ventilated areas. A tail wind can easily carry CO back on board;
- Only heat the cabin or cook when in a well-ventilated area;
- Make sure that cabin extensions and areas fitted with canvas tops are well-ventilated;
- Use only fuel-burning engines or appliances that are certified or designed for marine use and make sure they are only used in well-ventilated areas; and
- Use a marine-grade CO detector and check its batteries before every trip.

# Carbon Monoxide .. Continued

**Be aware that CO can build up when:**

- Two vessels are tied to each other;
- You are docked alongside a seawall;
- Under swim ladders and between pontoons;
- You are traveling at high speed with a high bow angle;
- A fuel-burning appliance or engine is running while your vessel is not moving.


If your boat has accommodations (houseboat, sailboat etc) and is fitted with an inboard engine, a generator, or a fuel-burning appliance, you should install a high-quality carbon monoxide detector close to where people will be sleeping.

REMEMBER: Do not confuse carbon monoxide poisoning symptoms (headache, nausea and fatigue) with seasickness or intoxication.

## Treatment of Carbon Monoxide Poisoning

Carbon monoxide poisoning is reversible. When exposure to carbon monoxide is discontinued, the gas is spontaneously released from the blood.

**If a person experiences the symptoms of CO poisoning, it is very important that you :**

- Remove them from the areas where the gas may be present;
- Investigate the source of carbon monoxide and correct it if possible;
- Use or exhibit signals to indicate distress and need of assistance if necessary; and
- Seek medical attention if necessary. In extreme cases, the person could be placed in hyperbaric oxygen therapy, which involves a full-body chamber that uses oxygen under pressure.

Although a person exposed to carbon monoxide poisoning may look and behave as normal, they may in fact be subtly but seriously affected. Anyone who has had exposure to carbon monoxide should seek medical attention.

# Carbon Monoxide : Swimming

Carbon monoxide is not just a risk to boaters. Swimmers, too, can be overcome by breathing in CO and drown in just minutes!

Carbon monoxide can build up near exhaust vents from inboard engines, outboard engines, and generators. Areas of high risk are under the back deck, swim platforms, or in between the pontoons on houseboats. Do not swim in these areas. Wait at least 15 minutes from when the motor or generator has been shut off before entering these areas.

There have been known cases of drowning attributed to carbon monoxide where swimmers have come up for air at the point of an exhaust pipe on a vessel.

REMEMBER: Carbon monoxide (CO) is a major drowning risk for swimmers. Areas of high risk are near exhaust vents, under swim platforms and between the pontoons of houseboats.

# Emergency: Heat Stroke

Heat stroke is a serious, life-threatening condition that occurs when the body loses its ability to control its temperature. Heat stroke is a true medical emergency that can be fatal if not properly and promptly treated.

Victims must receive immediate treatment to avoid permanent organ damage. Cool the victim and seek medical advice immediately.

**Common symptoms:**

- High body temperature (above 40 degrees Celsius);
- Flushed, hot skin (moist in initial stages, dry in later stages);
- Dizziness, confusion, or hallucinations;
- Elevated blood pressure (early stage);
- Shortness of breath or hyperventilating;
- Rapid pulse;
- Seizures;
- Unconsciousness or coma; and
- Core body temperature above 40 degrees Celsius.

**To treat heat stroke, you need to :**

- Move the person to a shady area;
- Remove clothing;
- Apply cool or tepid water to the skin (or use spray bottle);
- Fan the person to promote sweating and evaporation;
- Place ice packs under the armpits and groin if possible; and
- Monitor the body temperature until it drops to between 38.3 and 38.8°C (101 – 102 F); and
- Seek medical advice by using a VHF marine radio or cell phone.

REMEMBER: Persons suffering from heat stroke should always seek medical attention.

# Emergency: Heat Exhaustion

Heat exhaustion occurs when the body is unable to cool itself adequately. Usually this results from exercising in a hot, humid environment and is often brought on by dehydration.

Caution should be taken when trying to nourish dehydration. It should not be done quickly.

**Symptoms include:**

- Heavy sweating;
- Pale, cool, clammy skin;
- Muscle cramps/spasms;
- Dizziness or drowsiness
- Nausea or vomiting;
- Headache;
- Elevated pulse; and
- Elevated core body temperature (above 37 degrees Celsius).

**If you suspect someone is suffering from heat exhaustion:**

- Rehydrate the person with cool water, milk, soup or sports drinks. Caution should be taken if they are diabetic;
- Ensure they are  in a cool area out of direct sunlight;
- Loosen or remove clothing;
- Apply a cool compress to skin;
- Avoid giving alcohol or caffeinated beverages; and
- Seek medical advice by using a VHF marine radio or cell phone.

REMEMBER: It is recommended that all boaters have first aid training for all medical situations.

# Emergency: Seasickness

Seasickness is a form of motion sickness characterized by a feeling of nausea and, in extreme cases, vertigo.

It is typically brought on by the rocking motion of the vessel on the water. When at sea, our ears tell us that we are moving, however our sight (when focused on something) suggests that we are stationary.

Some people are more vulnerable to seasickness, while others seem to be immune.

**Common symptoms include:**

- Headache;
- Nausea and vomiting;
- Vertigo;
- Pale, cool, moist skin;
- Weakness or dizziness;
- Cold sweat; and
- Increased saliva.

**You can take the following steps to help minimize the symptoms of seasickness:**

- Consume over the counter prescription medications and ginger tablets for motion sickness, which are considered effective in preventing motion sickness. Though effective, drugs are not without potential side effects such as drowsiness and dry mouth;
- Stay cool and wear a hat, as heat and sun exposure can intensify the effects of seasickness; and
- Move to the boat's center of gravity, which may eliminate some of the motion.

Seasickness generally diminishes with time as the body's inner ear balance system gets used to the moving and rocking motion of the vessel. Seasickness is not a life threatening disease, and once the person is back on solid ground, it will go away quickly.

# Emergency: Operator Fatigue

Operator fatigue can be caused when a boater has been on the water for a long period of time, exposed to the sun and/or the motion of the boat. The operator may find it hard to keep a proper lookout and react slower in situations when fatigued.

Physical exercise such as tubing, water-skiing or operating a PWC will increase the rate at which fatigue sets in. The consumption of alcohol or lack of fluid intake, especially  water, will also increase the rate that fatigue sets in.

Many causes of fatigue can be treated with rest. To keep safe, always take turns at the helm while boating and keep well hydrated.

CHAPTER 5

# ON THE WATER

# CHAPTER 5

## Proper Lookout

There are many distractions on the water at any given time. As an operator it is important to constantly keep a proper lookout and share the waterways with common sense, care and attention.

***Collision Regulation (Rule 5)*** **states that all operators of a pleasure craft shall at all times :**

- Maintain a constant look-out for potential collision hazards;
- Use sight and hearing to detect and avoid any risk of collision with another vessel;
- Use any available means including sight, hearing, (radar and radio, if applicable) to make a full appraisal of whether a collision risk exists;
- Listen for sound signals from other vessels; and
- Watch for signals that indicate distress and need of assistance.

You should assign another person on board to act as a lookout at all times when a vessel is underway.

REMEMBER: Every vessel should maintain a proper lookout by using sight, hearing and all other appropriate means (including radar, radio etc. if available).

# Safe Speed

*Collision Regulation (Rule 6)* states that all boaters must operate at a safe speed at all times in order to avoid collision and/or adversely affecting any other vessel (i.e. dredging, towing, kayaking etc.).

A safe speed is a speed that allows the operator enough time to take proper and effective action to avoid a collision. The faster a boat travels, the greater the distance required for it to stop, and the less time available for the operator to react to a change in conditions.

Be very careful when boating where visibility is poor, such as when entering or exiting a fog bank.

**According to the *Collision Regulations*, to determine the safe speed for your vessel, you should take into account all of the following factors:**

- Your ability to see ahead – slow is the only safe speed in fog, mist, rain and darkness;
- Current, wind, and water conditions;
- How quickly your boat can change direction;
- How many and what types of vessels are near you; and
- The presence of navigational hazards such as rocks and tree stumps.

REMEMBER: All boats must be operated at a safe speed at all times in order to avoid collision.

# Vessel Operation Restriction Regulations

The ***Vessel Operation Restriction Regulations (VORR)*** regulate the operation of small vessels on specific bodies of water in Canada.

**These regulations may :**

- Impose shoreline speed zones (both posted and unposted);
- Restrict the maximum horsepower on powerboats; and
- Prohibit certain types of vessels from a body of water.

For instance, a body of water may be restricted to only non-powered boats, such as canoes and sailboats. It is the operator's responsibility to be familiar with the waterways in which they boat and know the location of these restrictions (posted and unposted) and follow them.

Some provinces have adopted speed limits of 10 km/h within 30m of the shoreline. This speed limit applies in Ontario, Manitoba, Saskatchewan, Alberta and the inland waters of British Columbia and Nova Scotia. This limit is in effect whether it is posted or not.

**Exceptions include:**

- Water skiing, where the towboat follows a course perpendicular to the shoreline when leaving or returning;
- Where buoys designate that another speed is permitted;
- In rivers less than 100m wide; and
- In waters where the regulations prescribe another speed limit.

REMEMBER: The maximum speed within 30 meters of shore in most Canadaian Provinces is 10km/h.

# Restriction Signs

Boaters should always be on the lookout for boating restriction signs. Failing to comply with a restriction (either posted or unposted) can result in substantial fines for the operator.

Vessel operation restriction signs may be green and orange or just orange in colour. The symbol on the sign indicates the type of restriction that applies. The signs come in five shapes, and the restriction applies in the direction indicated by the arrow. Signs that include the colour green contain special instructions such as time of day that the restriction applies to.

**Some boating restriction signs include:**

No motorized vessels (including power-driven and electric powered vessels)

No power-driven vessels (vessels propelled by an internal combustion engine or a steam engine)


No recreational towing activities north of the sign

No motorized vessels (including power-driven and electric powered vessels) between the hours and days in red


Speed limit


No sporting, recreational, or public event or activity


Combined symbol (no recreational towing activities and speed limit)

No vessels


Power limit (in public parks and controlled bodies of water only)


No towing activities

No motorized vessels (including power-driven and electric powered vessels) in the direction indicated by the arrow

# Rules of the Road

The *Collision Regulations* set out right-of-way rules, often referred to as the **"rules of the road"**, to help boaters determine who has the right of way; that is, which vessel maintains its course and speed (referred to as the stand-on vessel), and which vessel gives way (termed the give-way vessel).

This is not just a way to be polite – it is the law, which applies to every vessel on all navigable waterways – from canoes to supertankers. All vessel operators are obligated to take all necessary steps to avoid a collision. Know the "rules of the road" and boat by them!

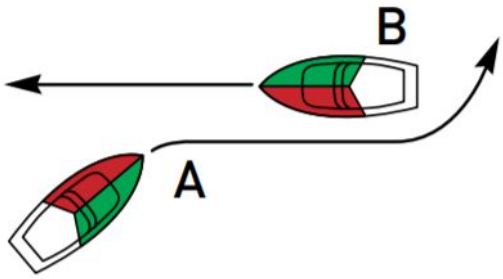
Failure to comply with these regulations can result in fines, imprisonment, or both.

REMEMBER: Boats in constant motion will meet quickly, so take early and substantial action to avoid collisions.

## Definitions Relevant to Navigation Rules

**Stand-on vessel** (B) is the vessel that maintains course while keeping a lookout to be sure that the other boat gives way.

If it becomes apparent that the give-way vessel is not altering course, then the stand-on vessel must take early and substantial action to avoid collision.




**Give-way vessel** (A) is the vessel that is required to keep out of the way of another vessel. Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar. A succession of small alterations of course and/or speed should be avoided.

REMEMBER: A give-way vessel is required by law to give early and substantial action to keep clear of a stand on vessel. Small alterations should be avoided.

# Rules of the Road .. Continued

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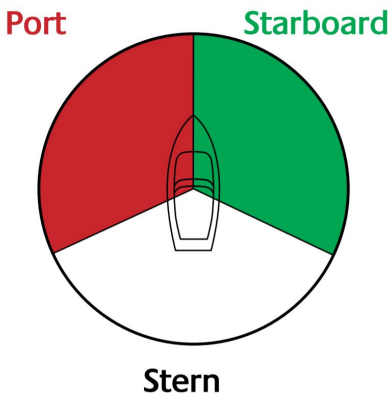
To understand how the *Collision Regulations* work, think of the space around a vessel as being divided into three Sectors:

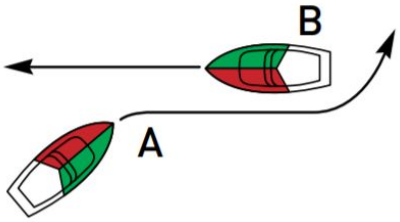
- **Port** Sector.
- **Starboard** Sector.
- Stern Sector.




REMEMBER: A sailboat propelled by an engine is classified as a power driven vessel. A sailboat with a motor but navigating under sail is not classified as a power driven vessel.

# Right of Way Rules

If a power-driven vessel (A) approaches your powered vessel (B) in your port sector, maintain your course and speed with caution and be ready to take evasive action quickly if the approaching vessel does not take action to stay clear of you.

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If a power-driven boat (A) approaches your power-driven vessel (B) from directly in front of you, then you should deliver one short-blast sound signal and alter your course to starboard so that your vessel passes the approaching vessel on your port side.


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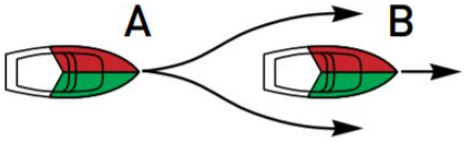
If any vessel (A) approaches your vessel (B) from within your stern sector (behind you), maintain your course and speed with caution. Any vessel overtaking another must take early and substantial action to keep well clear of the vessel being overtaken. This rule applies to both powered vessels and sailing vessels.

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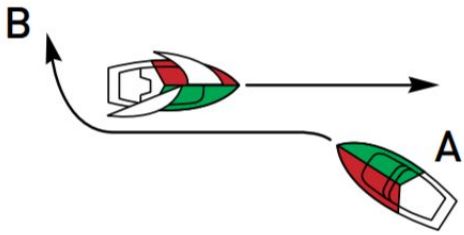
If your power-driven vessel (A) is on a crossing course with either a sailboat (B) or a vessel that is fishing with nets or trawls, you must take substantial action (alter your course and speed) to keep well clear of the other vessel. (Note: sailing vessels must take early and substantial action to keep clear of vessels fishing with nets or trawls. Just because a commercial fishing vessel with nets or trawls is a powered vessel does not mean that the sailboat has the right of way).




As a general rule, rowboats, sailing vessels, and canoes are less manoeuvrable and therefore have the right-of-way over power-driven boats. However, if one vessel is unable to manoeuvre as it normally would, the most manoeuvrable vessel gives way.

REMEMBER: When overtaking another vessel you should take early and substantial action to steer well clear of the vessel being overtaken.

# Operating near large vessels

According to the Canadian *Collision Regulations*, any vessel not under command (NUC), or vessel restricted in its ability to manoeuvre (RAM) - including fishing vessels, sailboats, paddle craft, canoes, and kayaks - has the right of way over power-driven vessels unless it is overtaking the power-driven vessel.

Thus, a vessel towing a barge or a vessel that is fishing (with its gear out) is restricted in its ability to maneuver and therefore has right of way over vessels under power; sailboats; and human-powered craft.

## Vessel Right Of Way Hierarchy

- Vessel Not Under Command (NUC), not making way (i.e. a vessel engaged in a diving operations, or a vessel with a mechanical problem);
- Vessel restricted in her ability to manoeuvre (the nature of her work restricts her ability to move) i.e. a vessel towing or pushing a barge;
- Vessel engaged in fishing (with trawls or nets);
- Sailing vessels; and
- Power vessel.

As shown in the hierarchy above, power vessels must stay clear of **ALL** other vessels.

Always keep clear of large vessels such as commercial vessels and vessels displaying NUC and RAM lights or shapes. These larger vessels take a long time to adjust course and speed. Respect their space, give them a wide berth and do not create another crossing situation.

REMEMBER: A sailboat must keep clear when on a collision course with a fishing boat hauling its nets.

## Ferries

Keep clear of docked ferries, ferries in transit, or vessels in tow. Exercise extreme caution near cable ferries as there is a submerged cable at the front and back of the ferry. Large ships departing the dock will sound one prolonged blast on their horn to indicate they are departing.


REMEMBER: A pleasure boat must keep clear when meeting a ferry or a towing vessel.

## Tug Boats

Stay clear of tug and tow operations and never pass between a tug and its tow. There are submerged tow lines that can hang underneath the water's surface, making it very difficult to see.

Attempting to pass between a tug and its tow could result in your vessel hitting the hidden line, causing injury or death. Many towed objects will also have a long trailing line behind them. Give the tug and its tow plenty of space in every direction.

REMEMBER: You should never pass between a tug and its tow.

## Seaplanes

Watch for aircraft when you are out on the water and give plenty of space to any aircraft that is landing or taking off from the water.

## Shipping Lanes

Shipping lanes are used by large commercial vessels. These vessels have limited visibility from the bridge (steering position) and may not be able to see or avoid smaller pleasure craft. They cannot quickly turn or stop, so they require more sea room.

Pleasure craft should exercise extreme caution when transiting near busy commercial shipping/traffic lanes.

Power driven vessels under 20m in length, including sail boats, are to steer clear and avoid shipping lanes whenever possible. If you must cross a shipping lane, do so at a 90-degree angle, and only when it is safe to do so.

REMEMBER: Operators of small recreational boats should stay in groups if possible when navigating in or near a shipping lane to increase their visibility.

## Narrow Channels

In narrow channels, a smaller vessel, even if it is the stand-on vessel, must give way to large vessels. Large vessels are less maneuverable and have restricted visibility; therefore pleasure craft should stay clear of them.

Additionally, if two vessels meet in a narrow channel where tide or river flow creates dangerous currents, the vessel that is moving down river automatically has the right of way.

When in a narrow channel, vessels must keep as near as is safe and practical to the **outer limit of a narrow channel on their starboard side**. Never anchor in a narrow channel unless you are in real danger or have broken down.

REMEMBER: When in a narrow channel, stay as far to the starboard side of the channel as is safe.

# Boat Manoeuvrability

Boat operators should take into account their own experience operating a boat and the limitations of the boat they are operating.

The maneuverability of any vessel will depend on many factors such as the size of the boat relative to the power of the motor and/or whether not one or two propellers are used.

Docking and mooring of boats in marinas or on boat ramps can lead to property damage and injury. Take extra care and proceed slowly when docking or mooring, especially in adverse weather conditions. Docking techniques, including the use of lines and fenders, vary depending on wind, current, location, degree of boat traffic in the harbor, type of boat, size of boat, and skills/abilities of the boater and crew.

REMEMBER: Boats don't have brakes. If you need to reduce speed quickly you should put the motor into reverse while applying power. Make sure you practise this in case of an emergency.

# Aids to Navigation

Aids to Navigation are devices or systems that are external to a vessel. Aids to Navigation can include buoys, day beacons, range markers, and lighthouses. They are to boaters what road signs are to drivers.

**Aids to Navigation are provided to :**

- Help the operator determine position and course;
- Warn of dangers or obstructions, or
- Indicate the location of the safest or preferred route.

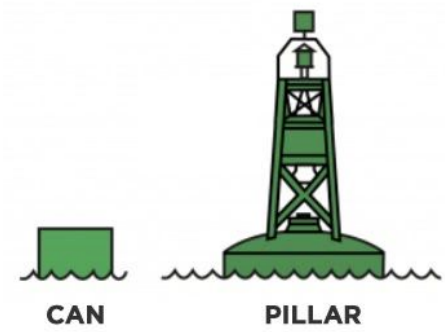
REMEMBER: It is important to be thoroughly familiar with the aids to navigation in your region.

# Lateral Buoy System

Lateral buoys indicate safe routes by marking the left and right sides of the deepest water. There are two main types of lateral buoys: port-hand buoys and starboard-hand buoys.

**Port-hand** buoys:

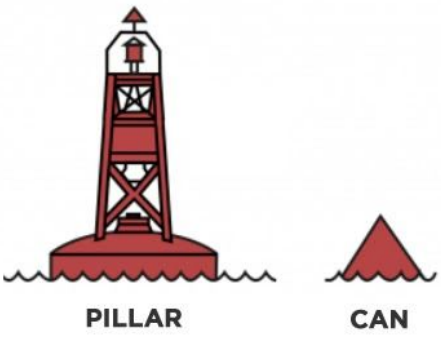
- Are green in colour;
- Are used to mark a danger or the left-hand side of a channel (when facing upstream);
- Should always be kept on the port side of the vessel when traveling upstream;
- May have a single green cylinder shaped topmark;
- May have a light that is green in colour;
- Are flat on top, if they do not carry a light; and
- Are identified by letters and odd-digit numbers.




REMEMBER: The upstream direction is the direction taken by a vessel when proceeding from seaward, toward the headwater of a river, into a harbor or with the flood tide. In lakes and rivers where this is difficult to determine, the use of cardinal buoys are preferred.

**Starboard-hand** buoys:

- Are red in colour;
- Are used to mark a danger or the right-hand side of a channel (when facing upstream);
- Should always be kept on the starboard side of the vessel when traveling upstream;
- May have a single single red cone shaped topmark pointing upward;
- May have a light that is red in colour;
- Have a pointed top, if they do not carry a light; and
- Are identified by letters and even-digit numbers.



### Red to the Right when Returning

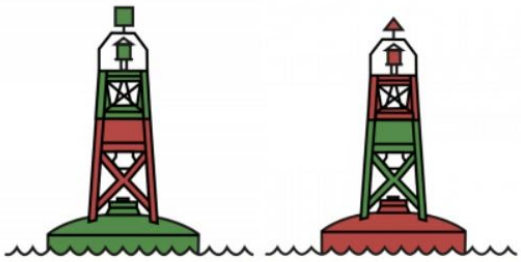
Red buoys must be kept on the right side of a craft when proceeding in the upstream direction.

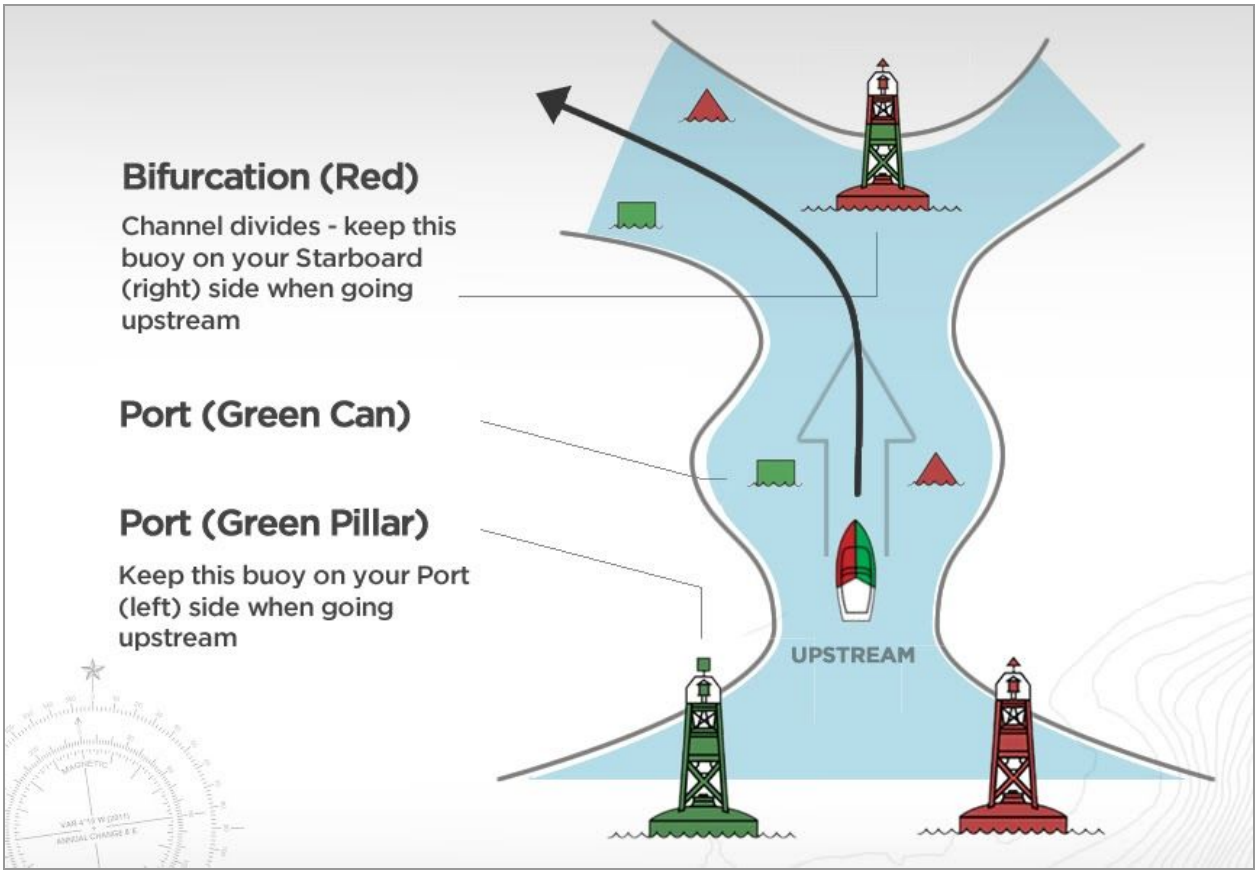
Here's a simple way to help remember these rules: think of three R's… **Red to the Right when Returning.**


### Bifurcation Buoys

A bifurcation buoy is used to mark the point where a channel divides.

You may pass buoys with red and green bands on either side in the upstream direction. The main or preferred channel, however, is shown by the colour of the top-most band. For example, if a green band is on top, then you should keep the buoy on your port (left) side.

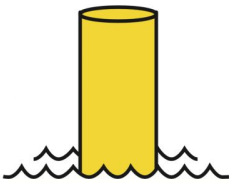




# Special Buoys

Special buoys serve a variety of purposes. The shapes of special purpose buoys have no significance. They are identified by their symbols, drawings, and colours.

**Cautionary Buoy** - Is a yellow-colored buoy that marks traffic separations as well as dangers such as firing ranges, underwater pipelines, race courses, seaplane bases, underwater structures, and areas where no through channel exists.



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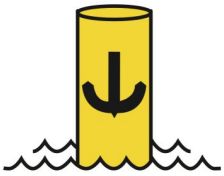
**Anchorage Buoy** - Marks the perimeter of designated anchorage areas. It is a yellow buoy with black anchor symbol. One should consult the chart for anchorage depths to ensure the anchorage can accept your vessel's draft.



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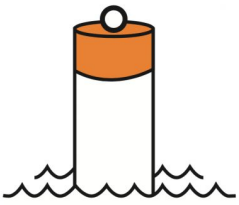
**Mooring Buoy** - Is used for mooring or securing vessels. Be aware that another vessel may be secured to this type of buoy. Remember, it is illegal to obstruct or tie up to any aid to navigation except for a mooring buoy.



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**Information Buoy** - Displays by means of words or symbols information such as locality, marina, or campsite. This type of buoy is white in colour and displays information within hollow orange square with two horizontal orange bands, one above the square and one below.

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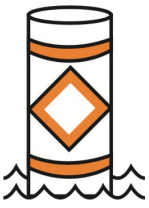
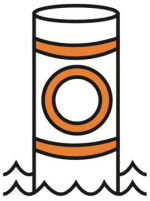
**Hazard Buoy** - Marks random hazards such as rocks and shoals. This type of buoy is white in colour and is marked with an orange diamond with two horizontal orange bands, one above the diamond and one below. Information concerning the hazard is indicated by a black symbol displayed inside the orange diamond.



**Control Buoy** - Marks an area where a restriction has been placed on boating. The restriction may be a speed limit or a wake and wash restriction. This type of buoy is white in colour and has a hollow orange circle with two horizontal orange bands, one above the circle and one below. A black symbol displayed inside the orange circle indicates the type of restriction that is in effect.



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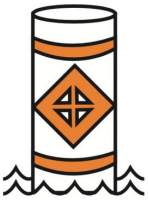
**Keep-Out Buoy** - Marks an area in which boats are prohibited. It is white in colour and is marked with an orange diamond, the interior points of which are joined by an orange cross. It also has two orange, horizontal bands, one above and one below the diamond-shaped symbol.



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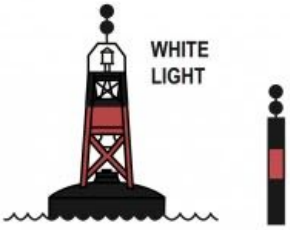
**Isolated Danger Buoy** - Is used to mark an isolated danger such as a rock, shoal, or a wreck. The buoy is moored on or above the danger and has navigable water all around it. To be safe, stay well away from this type of buoy. Consult the chart for information concerning the danger (dimensions, depth, etc). This buoy is black with a red band, and two black spherical top marks.

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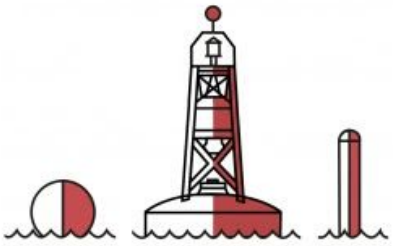
**Fairway Buoy** - Is used to mark safe water and is usually used to mark a channel entrance, the center of a shipping channel, or a landfall. This buoy indicates that there is safe water to pass on either side but it should be kept to the port (left) side of your vessel when proceeding upstream or downstream. It is painted half in red and half in white.



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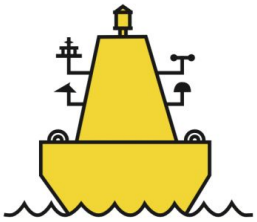
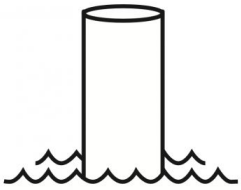
**Scientific Buoy** - Is also called an ODAS buoy (for ocean data acquisition system), and collects meteorological and other scientific data. The hazard represented is the buoy itself.



**Swimming Buoy -** Is used to mark the perimeter of a swimming area. It is white in colour and carries no markings.



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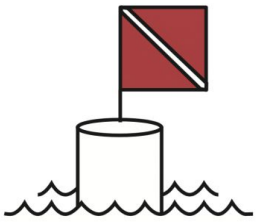
**Diving Buoy** - Is used to mark areas where scuba or other diving is in progress. This buoy is white in colour. It carries a red flag not less than 50 cm squared with a white diagonal stripe extending from the tip of the hoist to the bottom of the fly.



## Diving Flag

Special care must be taken when boating in waters where there are divers. All pleasure craft operators should be sure that they know what a "diver down" flag looks like.

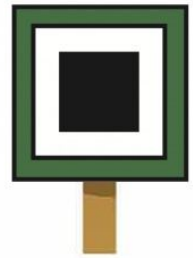
If a vessel is engaged in a diving operation, it must indicate that it has a diver down by displaying the **blue and white International Code Flag "A"**, which means "I have a diver down: keep well clear and proceed at slow speed".

Keep in mind that it is easy for divers to stray from the area marked by a diving buoy. When you see a diving flag, give divers plenty of room by keeping your boat at least 100m (328") from the flag. If you cannot stay that far away because of the size of the waterway, slow down as much as possible, move ahead with caution, and keep clear of the vessel and diving site.

# Day Beacons

Day beacons are usually fixed aids, meaning that they are erected either on land or on a pole or structure permanently erected in water. Day beacons are so named because they are unlighted and, thus, they are visible only during daylight hours.

**Port-Hand Day Beacon** - Is a fixed aid that marks the port (left) side of a channel or the location of a danger and must be kept on the vessel's port side when proceeding upstream or into a harbour. It is marked with a black or green coloured square centered on a white background surrounded by a square-shaped green reflecting border.



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**Starboard-Hand Day Beacon -** Is a fixed aid that marks the starboard (right) side of a channel or the location of a danger and must be kept on the vessel's starboard side when proceeding upstream or into a harbour. It is marked with a red coloured triangle centered on a white background surrounded by a triangle-shaped red reflecting border.

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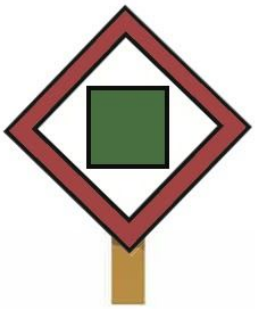
**Port-Junction (Bifurcation) Day Beacon** - Marks a point where a channel divides. This beacon may be safely passed on either side. If the preferred or main channel is desired, then this day beacon should be kept on the port (left) side of the boat.



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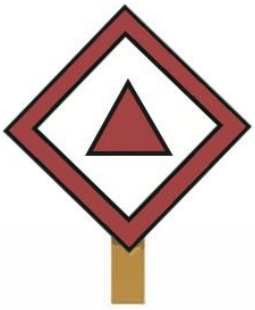
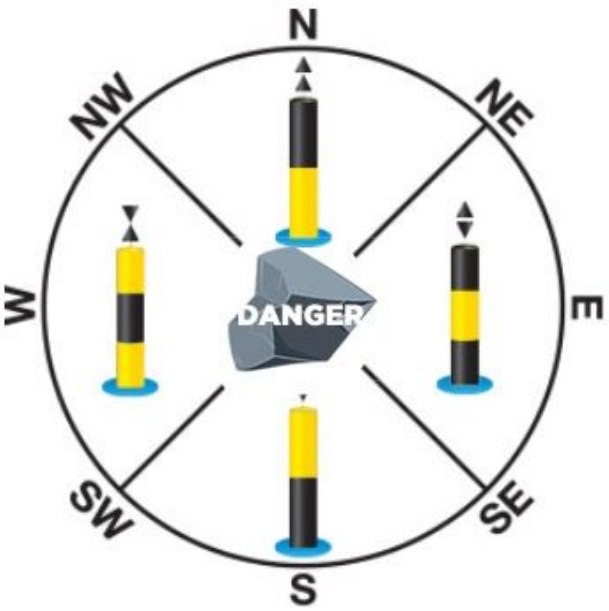
**Starboard-Junction (Bifurcation) Day Beacon** - Marks a point where a channel divides. This beacon may be safely passed on either side. If the preferred or main channel is desired, then this day beacon should be kept on the starboard (right) side of the boat.



# Cardinal Buoys

Cardinal buoys indicate a hazard by reference to the four cardinal directions (points) of the compass: north, east, west, and south. A cardinal buoy indicates that the safest water exists in the direction indicated by the cardinal point (direction) represented by the buoy. They can be in the form of buoys or fixed aids, but are predominantly buoys in Canada.

**North Cardinal Buoy** - Is positioned so that the safest water lies to the north. The top half of the visible portion is black and the bottom half is yellow. If present, the top mark is two stacked cones, black in colour, both pointing up. If the buoy does not carry a light, it is normally spar (tall and thin) shaped.




**South Cardinal Buoy** - Is positioned so that the safest water lies to the south. The top half is yellow and the bottom half is black. If present, the top mark is two stacked cones, black in colour, both pointing down. If the buoy does not carry a light, it is normally spar shaped.

**East Cardinal Buoy** - Is positioned so that the safest water lies to the east. This buoy is black in colour except for a broad horizontal yellow band around its midsection. Its top mark consists of two stacked black cones; the top one pointing up, the bottom one pointing down. If the buoy does not carry a light, it is normally spar shaped.

**West Cardinal Buoy -** Is positioned so that the safest water is located to the west. This buoy is yellow in colour except for a broad horizontal black band around its midsection. Its top mark consists of two stacked black cones; the top one pointing down, the bottom one pointing up. If the buoy does not carry a light, it is normally spar shaped.

# Interfering with Aids to Navigation

It is a **criminal offence** to interfere with Aids to Navigation, such as:

- Mooring the vessel to a buoy or other sea-mark used for navigation; or
- Wilfully altering, relocating, removing or concealing a buoy or other sea-mark.

REMEMBER: An operator of a pleasure craft can NEVER moor his vessel to a buoy or other sea-mark that is used for the purposes of navigation.

# Operating Responsibly

As an operator of a pleasure craft, you should take the following actions when sharing the waterways with others:

- Stay well clear of swimmers and swimming areas;
- Stay clear of properties;
- Adjust the speed of your pleasure craft so that the wake and wash created by your pleasure craft will not disturb others (such as swimmers and water-skiers), erode shorelines, disturb wildlife (such as nesting waterfowl), or damage property;
- Be aware of other smaller vessels around you, such as canoes, rowboats and kayaks, as waves produced from larger vessels can swamp these craft. Adjust your trim and reduce your wake;
- Follow the *Collision Regulations* requirements regarding maintaining a safe speed depending on visibility and water conditions; and
- Use common sense so as not to create a hazard, a threat, a stress, or an irritant to others or to the environment.

You are always responsible for the wake and wash created by your vessel.

You must at all times proceed with caution and at a speed such that wake and wash will not damage or adversely affect: other vessels, the shoreline, swimmers or divers and anchorage areas. This is especially true when rescuing someone who has fallen overboard, as the last thing you want to do is make the situation worse by having your wake wash over them.

REMEMBER: When operating a boat near anchored vessels, rowboats, swimmers, docks, floats and shorelines, adjust your speed to avoid damage due to wake and wash.

## Careless Operation

No person shall operate a vessel in a careless manner, without due care and attention or without reasonable consideration for other persons. Doing so could be a fineable offense under the Contraventions Act.

**Examples of careless operation include:**

- Jumping the waves of another vessel at an unreasonably close distance;
- Weaving through congested traffic at more than a slow speed;
- Swerving at the last possible moment (i.e. playing chicken ); and
- Operating a boat at a speed higher than necessary to maintain steerageway when near swimmers, non-powered vessels or cautionary buoys.

REMEMBER: If swimmers are in the waterways, the boat operator should stay well clear of swimmers and swimming areas.

## Dangerous Driving

Operating a vessel in a dangerous manner is not only unsafe; it is illegal. Under the Criminal code, dangerous driving offences that result in bodily harm or death can result in imprisonment of 10 years or more.

REMEMBER: Under the Criminal code of Canada, operating a boat at high speed near swimmers classifies as dangerous operation of a vessel.

# Towing a Water Skier

Under the *Small Vessel Regulations*, the rules governing water-skiing also apply to other towing activities such as barefoot skiing, tubing, kneeboarding, wakeboarding, and parasailing.

A boat operator must ensure that someone on board, other than the boat operator, is watching the person(s) being towed at all times (i.e. spotter). Towing a skier without a spotter on board is illegal.

**The regulations also require the following:**

- There must be a seat available for each person being towed (i.e. operator, spotter, person being towed);
- Towing activities are not allowed from one hour after sunset until sunrise;
- Towing activities are not allowed during periods of restricted visibility; and
- A vessel towing water skiers or others cannot be remotely controlled.

REMEMBER: If water skiing from a PWC, the PWC must be designed and recommended by the manufacturer to accommodate three persons (the operator, the observer, and the person being towed).

# Operating a Personal Watercraft (PWC)

Safe use of a Personal Watercraft (PWC) requires skill and experience. PWC operators must be at least 16 years old and have proof of competency and proof of age on board.

Before you let someone borrow your PWC, you must make sure that they know how to operate it safely and responsibly.

**Here are some other basic tips:**

- Always wear a Canadian-approved lifejacket or PFD (inflatable PFDs are not allowed). Choose a bright color for better visibility;
- Wear thermal protection when operating in cold water (water colder than 15°C);
- Read the owner's manual before setting out;
- Attach the engine shut-off line (kill chord) securely to your wrist or lifejacket or PFD;
- Respect speed limits and other vessel operation restrictions;
- Be cautious, courteous and respect your neighbours. Many people dislike the noise a PWC makes when it is operated for long periods of time at high speed in one place, especially when it is used to jump waves;
- Be aware of the impact your PWC can have on the environment. Avoid high speeds near shore;
- Stay alert! At high speeds, it is hard to see swimmers, water skiers, divers and other PWCs in time to avoid them;
- Do not operate your PWC after dark or when visibility is poor;
- Make sure your PWC is properly licensed and marked; and
- Do not start your PWC if you smell gasoline or fumes in the engine compartment. Have a qualified technician check it.

REMEMBER: Inflatable PFDs are not allowed to be used on a personal watercraft.

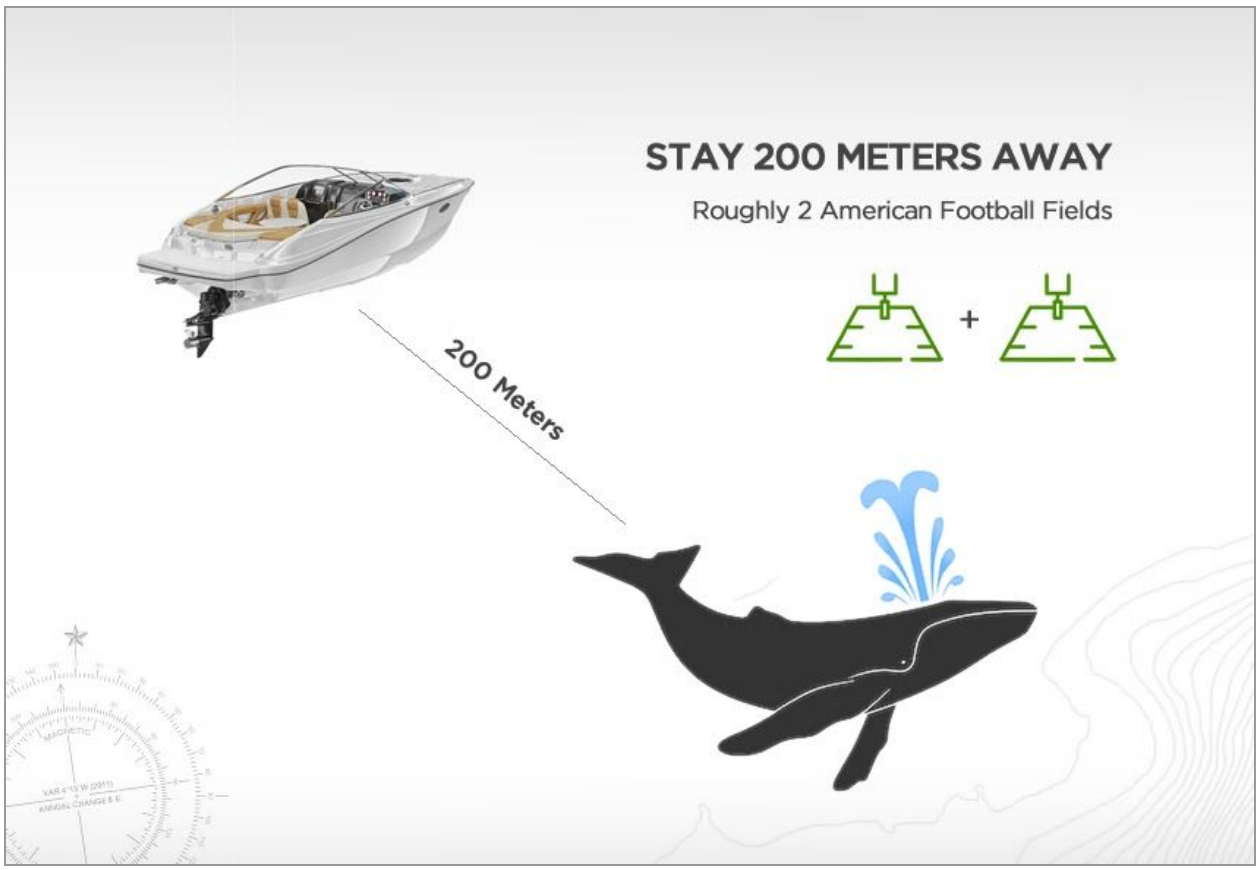
# Whale Safety

If you are operating your vessel in areas close to whale sightings or where whales may migrate, you must:

- Maintain your watch as a boat operator at all times;
- Be aware that whales can surface unexpectedly and may be unaware of boats;
- Keep a look-out at all times for blows, go slow if you see one; and
- Stay clear of whales by providing them with lots of space. Stay at least 200m away.

**Note:** The distance of 200m is the equivalent to approximately two (2) American Football fields.

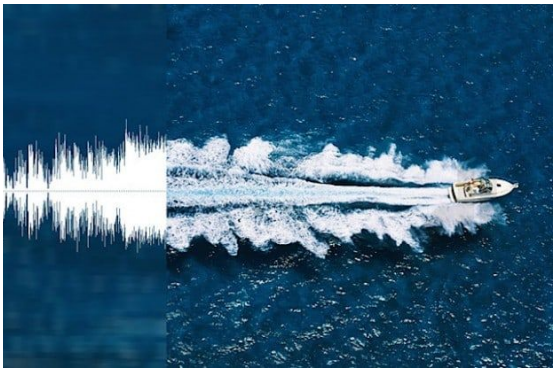
REMEMBER: Stay clear of whales by providing them with lots of space. Stay at least 200m away.



# Engine Noise Levels

All boat operators are responsible for their boat's noise.

To prevent excessive or unusual noise, no person shall operate a power-driven vessel other than a stock (unmodified) outboard engine, within five nautical miles (9.26 km) of shore unless it is equipped with a muffler system that is in good working order.



**This restriction does not apply if the boat:**

- Was built or constructed before 1960;
- Is used in a formal race or training exercise;
- Directs the exhaust gases under water through the propeller hub or below the cavitation plate;
- Is propelled by gas turbines or by an aircraft-type propeller operating in air; or
- Is operated at five or more nautical miles (9.26 km) from shore.

REMEMBER: Most powerboats require a muffler in good working order and it must be used within five (5) nautical miles offshore.

# Enforcement On The Water

Safety is a shared responsibility of Canadian waterway users and the organizations that govern them.

Boaters must operate their boats safely. This means you must learn and follow the rules that apply to your boat as well as to the waters where you will be boating.

An enforcement officer may inspect your boat and monitor your boating activities to make sure you meet the requirements that apply. An enforcement officer may also direct or prohibit vessel movement in the interest of public safety. An operator may face fines and/or imprisonment if they fail or refuse to stop and comply with law enforcement requests.

**Enforcement officers may:**

- Ask for ID;
- Ask for proof of competency (PCOC);
- Ask any pertinent questions;
- Board your vessel; and
- Examine a vessel and its equipment.

**A enforcement officer can be:**

- A member of the Royal Canadian Mounted Police (RCMP);
- A member of the harbor or river police;
- A member of provincial, county or municipal police force; and
- Any person designated by Transport Canada.

## Carry Your Documents

When heading out in your motorized boat, make sure to bring on board:

- Proof of competency;
- Personal identification; and
- Pleasure craft licence (for 10hp or more).

# Drugs and Alcohol

The consumption of alcohol, drugs, or other controlled substances can rapidly and significantly impair a person's ability to operate a boat.

Just as with automobiles, never hitch a ride with a boat operator who is impaired; instead, take action to prevent the impaired person from operating a vessel.

More than **40%** of boating deaths are caused by alcohol and/or drug consumption. It is unknown how many near-misses and injuries occur from operators under the influence of alcohol and drugs that impair judgment and take away all common sense.

Alcohol intensifies the effect of fatigue, sun, wind, and boat motion to adversely affect balance, judgment and reaction time. Even one drink will affect you, so please leave the booze out of the boat.

Operating a boat while impaired is illegal and punishable under the Criminal Code. Operating a boat (with or without a motor) is subject to the same laws which apply to driving a motor vehicle. Laws regarding transporting or consuming alcohol vary from province to province. For more information on alcohol and boating check with your local and provincial authorities.

REMEMBER: In some provinces, operating a pleasure craft while impaired could result in seizure of alcohol and/or drugs and the loss of your motor vehicle’s driver's license.

## Blood-Alcohol Levels

Throughout Canada it is a criminal offence to operate a motorized pleasure craft with a blood alcohol concentration of more than **0.08** (80.0 milligrams of alcohol in 100 millilitres of blood).

If you are found operating a vessel while disqualified/prohibited, you will be subject to arrest and to the same punishment as if you were operating a vehicle on the road. You could be fined, be given a jail term, or both.

REMEMBER: Approximately 40% of recreational boating deaths in Canada are caused by consuming alcoholic beverages and/or drugs.

# Entering U.S. Waters

Anyone entering U.S. waterways is required to follow a number of strict immigration and boat operation measures.

Before heading to the U.S. by water, it is a good idea to contact the U.S. immigration office or visit www.cbp.gov/travel/pleasure-boats-private-flyers for the latest updates regarding U.S. Homeland Security procedures.

**When in U.S. waters :**

- Carry a passport or other document that denotes identity and citizenship;
- Stay 100 yards away from all military, cruise lines and commercial shipping vessels;
- Operate at minimum speed (no wake) and proceed as directed by the Coast Guard or the Navy when within 500 yards of a U.S. Naval vessel;
- Avoid all military, cruise line and petroleum facilities;
- Avoid areas near dams, power plants and other facilities;
- Do not stop and anchor under bridges or in channels, as it is prohibited;
- Immediately report any suspicious activity to local authorities;
- Never approach, confront or challenge those acting in a suspicious manner; and
- Always lock, take your keys and secure your boat when leaving it unattended.

# Waste Disposal

It is unlawful to knowingly pollute the water, and all necessary steps should be taken to avoid polluting. Any kind of spill or release of oil into the water may have serious long-term effects on the environment.

Do not pollute the water with things like oil; fuel; anti-freeze; transmission fluids; garbage, hydrocarbons; and untreated sewage in inland waters.

Oil and other chemicals must be kept on board in a receptacle until they can be properly disposed of. If oil or other contaminants are discharged, this must be reported to the Coast Guard or government authorities as soon as possible.

## Responsibility To Report

Under the regulations, if boaters accidentally pollute; witness; or see the results of pollution that may have occurred, (i.e. oil or fuel spills) they must report it immediately.

If possible, take note of the type (i.e. oil, fuel) location; and approximate amount of the pollutant in the water. Report the above to a Government of Canada official such as a CCG/MCTS center by VHF Marine Radio Channel 16 or cellular phone using * 16 where available.

# Discharge of Sewage

The *Vessel Pollution and Dangerous Chemicals Regulations* require that boats fitted with toilets be equipped with either a holding tank, a marine sanitation device or temporary storage. The illegal discharge of untreated sewage can have devastating environmental effects and is a serious offence.

Discharge is NOT permitted on in-land waters (including Great Lakes) and in waters that have been "designated" under these regulations.

## Holding Tank

A holding tank collects and stores sewage or sewage sludge. Remember you must empty it at approved pump-out facilities on dry land only. Make sure to follow pumping instructions and avoid using disinfectants that may be harmful to the environment.


## Marine Sanitation Devices

A marine sanitation device is designed to receive and treat sewage on board.

Black water/sewage may be discharged under special provisions outside of inland waters providing the discharge is passed through a marine sanitation device and satisfies fecal count limits set under the regulations.

# Pollutants

The following is a list pollutants that cannot be discharged in Canadian waters:

- Oil, oil-waste or fuel;
- Hazardous chemicals (including toxic cleaning products);
- Pesticides, herbicides, paint, etc.;
- Black water (sewage) or gray water (dishwater, runoff from showers, bathtubs, etc.); and
- Garbage or waste.

## Reduce Pollution from Bilges

Oil, fuel and transmission fluid are a few examples of pollutants that harm the environment when pumped overboard – usually by automatic bilge pumps. Bilge cleaners, even the biodegradable ones, just break down the oil into tiny, less visible droplets – but it is still present. Absorbent bilge cloths are very useful because they are designed to absorb petroleum products and repel water.

**Here are a few tips to help keep bilge pollution at a minimum:**

- Make sure your bilge is clean before you turn on automatic bilge pumps. Only use them when needed and when the bilge contains only water; and
- Use towels or bilge cloths to absorb oils, fuel, antifreeze and transmission fluid. Dispose of used towels or bilge cloths in an approved garbage container.

# Green Boating Tips

Some green boating tips include :

- Make sure your engine is well maintained to reduce air pollution;
- Use only paints approved for marine use;
- When fuelling, do not top off tanks and clean up any spilled fuel;
- Keep your bilge clean and do not pump oily water overboard;
- Use bilge absorbents in place of detergents;
- Do not pump your sewage over the side – use a holding tank;
- Obey all sewage regulations;
- Bring your garbage home (including cigarette butts) – do not litter;
- Try not to use detergents – even biodegradable cleaners are hard on plants and animals that live in the water;
- Avoid shoreline erosion – watch your wake and propeller wash;
- Obey all speed limits for better fuel economy; and
- Report pollution when you see it.

# Wrecked, Abandoned or Hazardous Vessels

Boat owners are responsible and liable for the end-of-life management of their vessel(s).

Pollution from abandoned vessels has huge impacts on marine life.

Boat owners can be held responsible and liable for all pollution and clean-up related costs incurred, resulting from their boating activities, including abandoning a vessel.

If your boat is in bad condition, ensure that you dispose of it in a responsible manner before it impacts the environment or the safety of others.

Contact your local or regional boating association to know more on the best places to recycle or dispose of your boat.

**It is the boat owner's legal responsibility to dispose of an old boat responsibly:**

- Do not abandon, neglect or deliberately sink the boat;
- Ensure that ownership documentation is transferred properly; and
- Recycle or dispose of your boat legally and responsibly.

## Hazardous Wreck

The owner of a vessel involved in a maritime accident that results in a hazardous wreck must take all reasonable steps to mark the vessel without delay. This applies to all incidents in Canadian waters and Canada's Exclusive Economic Zone.

The operator of any vessel involved in a maritime accident that results in a wreck is required to report it, without delay to either:

- CCG /MCTS Center; or
- Transport Canada.

The owner of a vessel is liable for the costs of locating, marking and removing a hazardous wreck resulting from a maritime accident.

# Invasive Species

Non-native aquatic species, plants, fish, and animals are invading Canada's waterways.

Invasive exotic species of plants, fish, shellfish and even tiny algae or bacteria are invading Canada's waterways. They enter into waters that are not their natural home and then multiply and crowd out the plants and animals that do belong there.

Trailering a boat from one body of water to another increases the chances of spreading invasive species.

Zebra mussels, Quagga mussels, round goby, sea lamprey and a wide variety of other organisms can spread, wiping out fish stock and destroying the quality of the water.

**To help prevent the introduction and spread of non-native species:**

- Always clean your hull prior to leaving or entering a new body of water;
- Drain water from your bilge/live-well after use or before entering new waters to help remove spores and other organisms;
- Clean all fishing equipment; and
- Report new infestation of non-native aquatic species to Environment Canada.

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