

module 1



Boating in Canada: Rules and Regulations

In This Module You'll Learn:

- *The rules pertaining to age and horsepower restrictions*
- *The rules pertaining to operator competency*
- *How certain acts, regulations and code govern Canada's waterways*
- *Your legal responsibilities when operating on Canadian waterways*
- *That drugs, alcohol and boating don't mix*
- *Your responsibilities in assisting other boaters in distress*
- *How capacity plates specify the legal limits of your craft*
- *How to register your pleasure craft*



Boating in Canada

Recreational boating is a pastime that many of us enjoy. In fact, each year over 8 million boaters enjoy Canada's waterways. Unfortunately, not all survive. The Canadian Red Cross and the Lifesaving Society of Canada report approximately 200 boating fatalities per year. Sadly, most of these deaths are preventable. In addition, over 6000 unreported non-fatal incidents occur every year. Many of these accidents are caused by a lack of basic boating knowledge and skill.

By choosing to complete this study guide and obtain your **Pleasure Craft Operator Card** you have made the choice to increase safety and fun for all!

It's Everyone's Responsibility

As a boater in Canada, you are expected to understand and obey the rules and regulations that apply on Canadian waterways. By using common sense and operating your craft in a safe and responsible manner, you'll protect yourself, your passengers and your fellow boaters.

Operator Training and Certification

On **April 1, 1999** the Canadian Coast Guard enacted the *Competency of Operators Pleasure Craft Regulations*. These regulations phase in mandatory operator competency standards over a ten year period and require that operators obtain a **Pleasure Craft Operator Card**. This system affects operators of powered vessels and PWCs only, and involves operator competency training and age and horsepower restrictions.

For more information on the *Competency of Operators Pleasure Craft Regulations*, please contact:

Canadian Coast Guard

Office of Boating Safety
www.ccg-gcc.gc.ca
1-800-267-6687

BOATsmart! Canada

www.boatsmartcanada.ca
1-877-792-3926

Operator Competency |



It's the Law

The *Competency of Operators Pleasure Craft Regulations* require operators of pleasure craft fitted with a motor and used for recreational purposes to carry proof of competency onboard at all times. These requirements are being phased in over ten years.

The *Competency of Operators Pleasure Craft Regulations* were established on 15 January 1999, pursuant to Section 562 of the *Canada Shipping Act*.

The *Regulations* were set into force on 01 April 1999.



Dates to Remember

01 April 1983

Under the regulations, any operator born after 01 April 1983 must obtain a Pleasure Craft Operator Card no matter which type of craft they operate.

15 September 2002

Any **youth or adult** operating a PWC or powerboat under 4 m (13 feet) in length must obtain and carry a Pleasure Craft Operator Card. In addition, youths under the age of 16 are not permitted to operate a PWC (regardless of whether they are accompanied by an adult or have obtained their Pleasure Craft Operator Card).

15 September 2009

As of 15 September 2009, **all operators of power-driven craft** will be required to carry a Pleasure Craft Operator Card.

Non-Residents

Pleasure craft operator competency requirements apply to all non-residents operating their craft in Canadian waters for more than forty five consecutive days.



Safe Boater Training

Boaters lacking in experience should take a boating safety course from an accredited provider. A boating safety course is a valuable, life-saving tool that will:

- 1) Teach you to be aware of the acts, code and regulations that govern actions on Canadian waterways
- 2) Teach you how to respond in emergency situations
- 3) Ensure you understand your responsibilities as a pleasure craft or PWC operator
- 4) Teach you how to properly and safely operate your pleasure craft or PWC

The BOATsmart! Canada Safe Boating Program is a Canadian Coast Guard accredited course. Visit www.boatsmartcanada.ca or call 1-877-792-EXAM for more details.

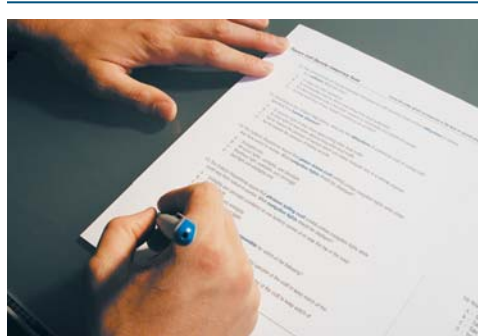


Proof of Competency

You may be asked to provide proof of competency to local law enforcement agencies when operating on your local waterway. Proof of competency can take three forms:

- 1) Proof of having taken a **boating safety course** prior to 01 April 1999*
- 2) A Pleasure Craft Operator Card issued following the successful completion of a Canadian Coast Guard accredited proficiency exam such as the **BOATsmart! Canada Challenge Exam**
- 3) A completed **rental-boat safety checklist** (for power-driven rental boats and PWCs)

*If you have completed a boating safety course before April 1, 1999 and have proof, then your course certificate or card may be accepted as proof of competency. Contact BOATsmart! Canada at 1-877-792-EXAM for more information concerning recognition of past training.



Obtaining a Pleasure Craft Operator Card

Boaters can obtain their Operator Card by achieving a mark of at least **75 percent** on a Canadian Coast Guard approved Operator Proficiency Exam. Once obtained, the Pleasure Craft Operator Card is good for life.



The Operator Proficiency Exam

A Canadian Coast Guard accredited operator proficiency exam consists of multiple choice questions that are designed to test your boating knowledge and skill. The exam must be completed within the prescribed 45 minute time period and can be challenged by persons of any age. Although it is strongly recommended, operators are not required to attend a boating safety course or study a safe boating manual before attempting an operator proficiency exam.

The **BOATsmart! Canada Challenge Exam** is Canadian Coast Guard accredited. For more information on testing locations in your community please contact BOATsmart! Canada at 1-877-792-EXAM or visit www.boatsmartcanada.ca

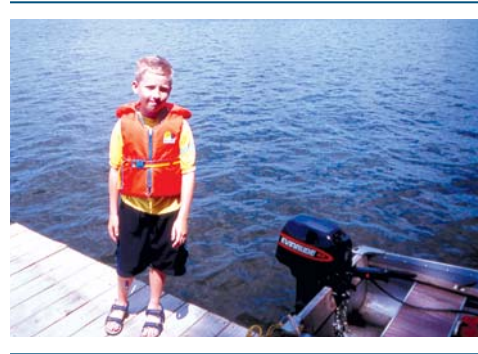
Age and Horsepower Restrictions |



Age and Horsepower Restrictions

Age and horsepower restrictions prohibit operators under 16 years of age from operating craft with horsepower exceeding specified limits. Age and horsepower restrictions apply to three age categories:

- Under 12 years of age
- 12 to 15 years of age and not supervised
- 16 years of age and older



Age Categories

Under 12 Years of Age

Operators under 12 years of age that have obtained their Pleasure Craft Operator Card can operate a boat without supervision so long as the engine is not more than 10 hp (7.5 KW). Operators under 12 years of age are NOT allowed to operate a PWC under any conditions.

12 to 15 Years of Age

Operators 12 to 15 years of age that have obtained a Pleasure Craft Operator Card can operate a vessel without supervision as long as the engine is not more than 40 hp (30KW). Operators 12 to 15 years of age are NOT allowed to operate a PWC under any conditions.

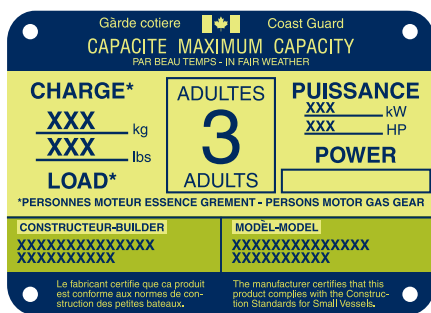
16 Years of Age and Older

Operators 16 years of age or older can operate a vessel without supervision and there are no horsepower restrictions. Operators 16 years of age and older are allowed to operate PWCs so long as they have obtained a Pleasure Craft Operator Card.



Supervision Provisions

Operators under 16 years of age may operate a power boat if accompanied and directly supervised in the powerboat by a person 16 years of age and older. However, both the operator and supervisor must obtain and carry proof of competency onboard at all times. Operators under 16 years of age are prohibited to operate a PWC even if they are accompanied by an adult.



What is a Capacity Plate?

A vessel Capacity Plate is a small metal plate that is permanently affixed to the hull of a pleasure craft. It verifies that your vessel meets Canada Construction Standards and indicates the various capacities of your vessel.

Do I Need One?

The *Small Vessel Regulations* stipulate that a Standards Decal and Capacity Plate, or a Combined Capacity / Construction Plate must be affixed to all vessels that can be powered by an engine of 10 hp (7.5 KW) or more. You also need a Capacity Plate in order to license or register your boat.

A Capacity Plate may also be required for home built boats. If your boat does not have a Capacity Plate, contact the original manufacturer and request a replacement. If you are unable to obtain a replacement plate or if you have constructed a home built boat, contact The Department of Transport, Canada and apply for a Single Vessel Plate.



What Information is on a Capacity Plate?

Capacity Plates provide three important pieces of information:

- **Recommended Gross Load Capacity:** The maximum weight your boat is designed to carry including persons, motor, steering assembly, fuel, all equipment and gear.
- **Recommended Safe Limits of Engine Power:** Indicates the maximum limit of engine horsepower based on the vessel's gross load capacity. The outboard engine size is indicated on the Capacity Plate which, if fitted, is permanently attached to the Pleasure Craft.
- **Adults:** Indicates the maximum number of "equivalent adult persons" that your vessel can safely carry.

The Capacity Plate sets a maximum limit for each of these capacities based on safe operation in fair weather conditions. Loading your craft to maximum capacity may increase the likelihood of injury or emergency if you are forced to operate during adverse conditions. You should be aware of and respect the limitations and handling characteristics of your craft. It is extremely hazardous to overload your boat.



Registering Your Pleasure Craft

Pleasure craft operators in Canada are required to license their craft as governed by the *Small Vessel Regulations*. All boats under 15 tons gross tonnage powered by 10 hp (7.5 KW) or more must be registered. This includes all Personal Watercraft (PWCs).

You can register your new or used powerboat by contacting the Canadian Coast Guard or the Canada Customs and Revenue Agency and acquiring an **Application for Vessel License**. Once you complete and submit the application, Canada Customs will either re-issue an existing license number (in the case of a used vessel) or issue a new license number. You must carry a copy of the Vessel License in a watertight envelope onboard at all times.

You must affix the vessel license number to both sides of your boat near the bow. The license number must appear in block characters no less than 75mm (7.5cm) in height and be in contrast to the color of the hull. Script, italic and other lettering styles are not permitted.



What Are My Responsibilities?

As a Canadian pleasure craft operator, you are expected to know the rules and regulations that govern Canada's waterways. You are responsible for equipping yourself and for operating your boat in a safe and courteous manner. You are also responsible for ensuring the safety of your passengers and other boaters.



Drugs, Alcohol and Boating

If you drink – don't drive. The same applies whether you're driving a car, a boat, a PWC or any other type of motorized vehicle. Consuming alcohol, drugs or other controlled substances can significantly impair your ability to safely operate your pleasure craft. Doing so will not only put your own life at risk, but will also risk the lives of your fellow boaters.

Operating a pleasure craft anywhere in Canada while impaired is an offence under Section 253 of the *Criminal Code of Canada*. Charges result in a criminal record and, even for the first offence, will result in significant fines. Most provinces have fines from \$300 to \$2,000 and can restrict your operation of any motorized vehicle for 6 months to 3 years. Offenders can also be sent to prison. Remember: **Alcohol, drugs and boating don't mix.**

Provinces and territories enforce their own rules and conditions on when alcohol can be consumed and how it can be transported on a boat. For more information operators should contact their local authorities.



Using Common Sense

You are **required by law** to operate your craft in a **safe** and **courteous** manner. You should always choose a safe operating speed and use common sense, especially when operating close to shore. Consider the following when operating your craft:

- Your distance from shore
- Water and wind speed conditions
- Visibility conditions
- Local hazards and obstructions
- The amount of boat traffic in the vicinity
- Posted speed limits
- The performance and capabilities of your craft
- Your level of skill and experience



Instructing Your Passengers

As a pleasure craft operator you are responsible for the safety of your passengers. You should explain what their responsibilities and duties are in the event of an emergency, and instruct them on safe behavior while underway.

Instruct your passengers on the following:

- How to operate the craft in case of emergency
- The location of the craft's emergency kit
- How to rescue a person overboard
- How to properly use an approved PFD or Lifejacket

Be sure that your passengers understand they should:

- Always wear an approved PFD or Lifejacket
- Be aware that the effects of sunlight, motion, waves, wind and sound can impair judgement
- Keep close to the centreline and as low as possible when moving around in the craft
- Keep hands and feet inside the craft when departing or returning to the dock
- Refrain from consuming alcohol while onboard



Assisting Fellow Boaters in Distress

Pleasure craft operators are **required by law** to come to the aid of fellow boaters in distress:

- When operating your craft you should always maintain a **look-out** for signals that indicate distress and need of assistance
- If you are involved in a collision you are obligated by the *Criminal Code of Canada* to stop and offer assistance
- If you identify any persons found at sea and in danger of being lost, you are required by the *Canada Shipping Act* to render assistance in so long as it doesn't put your own craft and/or passengers at risk



Lending Your Pleasure Craft or PWC

As a pleasure craft owner, you are responsible any time you lend your pleasure craft or PWC. Ensure that:

- The person borrowing your craft understands boating rules and is a responsible person
- The person borrowing your craft has a Pleasure Craft Operator Card
- He or she is wearing an approved PFD or Lifejacket

You should also review the following:

- Any local hazards or obstructions
- Navigation and right-of-way rules
- The location of all required safety equipment onboard your craft
- The handling characteristics of your craft



Code, Acts and Regulations

Several major acts and regulations govern pleasure craft operators in Canada and ensure the safe use and enjoyment of Canada's waterways. **Marine acts, regulations and code have the force of law and apply to all pleasure craft operators.** Violating them could not only cause personal and public injury, but could result in fines, penalties and imprisonment.

They are:

- *The Criminal Code of Canada*
- *The Canada Shipping Act including the:*
 - *Small Vessel Regulations*
 - *Collision Regulations*
 - *Boating Restriction Regulations*
 - *Charts & Nautical Publications Regulations*
 - *Competency of Operators of Pleasure Craft Regulations*
- *The Contraventions Act*



The main provisions for recreational boating in Canada are contained in the *Canada Shipping Act* and the *Criminal Code of Canada*. Additional boating regulations are issued under the authority of the *Canada Shipping Act*.

Persons visiting from outside Canada and operating power-driven vessels licensed or rented in Canada are required to follow Canadian laws and regulations. When traveling abroad and operating pleasure craft licensed or registered in another country, Canadian citizens are required to obey the laws in the host country.



Canada Shipping Act

The *Canada Shipping Act* is the "umbrella" act under which all boating regulations are developed in Canada. It incorporates international and federal laws and regulates all vessels operating on Canadian waterways.

For Example

One of the main provisions of the act is to call on every pleasure craft operator, in so far as he/she can do so without serious danger to their craft or passengers, to render assistance to other boaters in distress.



Small Vessel Regulations

The *Small Vessel Regulations* outline the power limits and licensing requirements for all recreational vessels. The regulations also stipulate the minimum mandatory safety equipment required onboard at all times (as determined by the size of the craft). In all, the *Small Vessel Regulations* govern five key areas:

- Construction Standards
- Safe Operating Rules
- Required Safety Equipment
- Required Maintenance
- Registration and Licensing



Charts & Nautical Publications Regulations

Charts and nautical publications provide the information necessary in order to safely navigate Canada's lakes, rivers and waterways. The *Charts and Nautical Publications Regulations* require pleasure craft operators to have onboard at all times the most recent editions of:

- The largest scale charts for the area that they navigate
- The required publications for the area that they navigate
- The required documents for the area that they navigate

Marine Charts are published by the Canadian Hydrographic Service, Department of Fisheries and Oceans and are available for purchase at your local marine dealer or on the internet.



Boating Restrictions Regulations

The *Boating Restrictions Regulations* impose standardized speed limits, shoreline speed zones and horsepower limits. The regulations also limit where certain types of boats may or may not be permitted to operate in Canada. Many of the regulations contained within the *Boating Restrictions Regulations* are local in nature.



Contraventions Act

The *Contraventions Act* enables local authorities to write tickets for offences that result in a fine but not a criminal record. Examples include:

- Disregarding speed limits
- Careless operation
- Operating without the prescribed safety equipment

Typically, fines under the *Contraventions Act* range between \$100 and \$200. Fines depend on the type of infraction and the number of violations. You should check with local authorities to determine how the *Contraventions Act* is applied in your province.

For Example

Most local law enforcement agencies have adopted a zero tolerance policy when determining fines for those operating without the proper type or number of PFDs and/or Lifejackets. In participating provinces, this contravention could cost you over \$200 for each violation.



Collision Regulations

The *Collision Regulations* stipulate the rules preventing collisions on the high seas and inland waterways. As such, the *Collision Regulations* govern the following:

- Navigation
- Speed restrictions
- Right-of-way rules
- Look-out rules

For Example

The operator of a pleasure craft must always maintain a proper look-out by sight and hearing at all times as described in the *Collision Regulations*, Rule 5.



Criminal Code of Canada

The *Criminal Code of Canada* enables law enforcement authorities to charge boat operators for criminal offences. The *Criminal Code*:

- Stipulates that a pleasure craft operator is required to stop and offer assistance when the operator has been involved in a collision.
- Stipulates that vessels are prohibited from being operated in a manner that is dangerous to the public
- Prohibits false emergency signals or messages
- Prohibits operators from interfering with marine signals and navigation aids
- Requires that a person other than the operator must keep watch of any person being towed (such as a water-skier)
- Prohibits the towing of water-skiers after dark
- Prohibits the operation of a vessel which is known to be in unseaworthy condition
- Prohibits the operation of a vessel while under the influence of drugs, alcohol or controlled substances



Protecting the Aquatic Environment

Boating is a privilege – not a right. As a boater you should do your part to respect Canada's waterways and protect our natural aquatic environments.

Canada's aquatic environment is protected by several laws, including the *Fisheries Act*. It is an offence to deposit or permit the deposit of any material that can have a negative effect on fish and their habitat. Canadian boaters are also required by law to report incidents and evidence of pollution.

Green Boating Tips

Protecting the environment isn't difficult – it only takes your attention and commitment. As an environmentally responsible boater always be sure to:

1) Keep Your Bilge Clean

Bilge water can contain fuel, lubricants and other chemicals that can be harmful to the environment. Never empty your bilge into the water. Use bagged sorbent materials that absorb fuel and oil and properly dispose of waste at a licensed facility.

2) Do Not Pump Sewage Into Confined Waterways

Use a holding tank to store sewage until it can be properly disposed of at an approved facility. It is against the law to pump sewage into confined waterways.

3) Dispose of Garbage Ashore

Never throw your garbage overboard. Stow your garbage for disposal on your return home. Man-made materials such as plastic kills thousands of aquatic animals every year and takes decades to decompose.

4) Take Care When Refueling

Use caution when fueling your craft. Never spill gas or oil into the water. Wipe up any spilled fuel with a rag. Use a funnel when filling your engine's oil tank or when filling a portable gas tank.

5) Use Environmentally Friendly Cleaning Products

Never use detergents that contain phosphate when cleaning your boat. Phosphate is a nutrient that promotes extreme growth of aquatic micro-organisms. Choose biodegradable cleaning products and use sparingly.

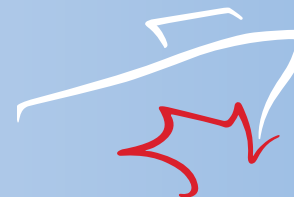
6) Minimize The Effects Of Your Wake and Wash

Be aware that your boat's wake and propeller wash can damage shoreline environments and cause shoreline erosion. Reduce operating speed near shore and when close to natural habitats.

7) Report Incidents of Pollution

Incidents and evidence of pollution should be reported to the Canadian Coast Guard:

- Newfoundland
(800) 563-2444
- P.E.I., Nova Scotia and New Brunswick
(800) 565-1633
- Quebec
(800) 363-4735
- Ontario, Manitoba, Saskatchewan, Alberta, N.W.T. and Nunavit
(800) 265-0237
- British Columbia, Yukon
(800) 889-8852



Module 1 | Summary |

Canadian boating rules and regulations have been implemented to protect the safety of pleasure craft operators and to establish operating and navigation standards to which all boaters must comply. The rules and regulations are also designed to protect Canada's natural aquatic environments.

All pleasure craft operators in Canada are obligated to learn and abide by Canadian boating rules and regulations. Remember, you should always use courtesy and common sense when operating your craft and come to the aid of fellow boaters in distress. By taking the time and care to operate your craft in a safe and responsible manner you'll reduce the burden on Canada's search and rescue organizations and increase safe and enjoyable boating for all!

For in-depth information on Canadian boating rules and regulations and text copies of each of legislation, please contact the Boating Safety Information line at 1-800-267-6687 or visit www.ccg-gcc.gc.ca

- 1) All operators of Personal Watercraft (PWCs) will need to obtain their **Pleasure Craft Operator Card** by 15 September 2002.
True or False?
- 2) You should maintain a look out for **distress signals** only during periods of poor weather.
True of False?
- 3) **Personal Watercraft** (PWCs) do not need to be **registered**.
True of False?
- 4) What type or size of vessels must be equipped with a **Capacity Plate**?
A - All vessels that can be powered by an engine of 10 hp or more
B - All vessels that can be fitted with an engine
C - All vessels over 10 m that can be powered by an engine of 10 hp or more
D - All vessels over 10 tons
- 5) Which act, code or regulation requires that **safety equipment** be carried on board at all times?
A - The Criminal Code of Canada
B - The Small Vessel Regulations
C - The Boating Restriction Regulations
D - The Collision Regulations
- 6) Who is responsible if you **lend** your boat to a friend?
A - Both you and the person who borrowed your craft
B - You alone
C - The person who borrowed your craft
D - Neither you nor the person who borrowed your craft
- 7) The Small Vessel Regulations require that certain pleasure crafts be **licensed**. Which are they?
A - All craft over 6 m in length
B - All craft over 10 m in length that are power-driven
C - All craft that are able to transport passengers
D - All craft regardless of their type or length
- 8) The Canada Shipping Act requires all operators to offer **assistance** to other boaters in distress. Under what circumstances are you required to help?
A - Only if you are operating a larger craft than the one in distress
B - Only if you can do so without placing yourself or your passengers in danger
C - Only if you have a marine radio
D - Only if the other boater is in danger of serious injury
- 9) Which of the following governs **navigation rules** on Canadian waterways?
A - The Small Vessel Regulations
B - The Collision Regulations
C - The Charts and Nautical Publications Regulations
D - The Contraventions Act
- 10) When do operators of **personal watercraft** (PWCs) need to obtain their Pleasure Craft Operator Card?
A - Only if under 16 years of age
B - As of 15 September 2002
C - As of 15 September 2009
D - You do not require a Pleasure Craft Operator Card to operate a PWC

module 2

Boating Basics: Terminology and Equipment

In This Module You'll Learn:

- *The different types of pleasure craft*
- *Vessel and equipment terminology*
- *Personal safety equipment requirements including PFDs and Lifejackets*
- *Boat safety equipment requirements for different types and size of craft*
- *Distress equipment requirements*
- *Navigation equipment requirements*



Who is an Operator?

An “operator” is considered to be the person who is in effective control of the pleasure craft and who is responsible for its operation. As a pleasure craft operator you are responsible for yourself, your passengers, your vessel and for the safety of your fellow boaters.



What is a Pleasure Craft?

A “pleasure craft” is any vessel, ship, boat or other type of watercraft that is used **exclusively** for pleasure or recreation. If the craft carries goods or passengers for hire, payment, reward or profit it is considered a commercial craft. Crafts used for commercial purposes are subject to alternative rules and regulations for operation on Canadian waterways.



What is a Power-Driven Craft?

Any vessel propelled by a motor or propelling machinery is considered to be a power-driven craft. This definition includes pleasure sailing craft operating under the power of a motor. It is important to know the distinction between power-driven craft and sail-powered craft. Different navigation and equipment rules apply for each type of craft.



What is a Sailing Vessel?

The *Small Vessel Regulations* defines a pleasure sailing craft (sailboat) as any vessel that is under the power of sail. Sailboats operating with an engine or propelling machinery (if so equipped) are considered to be power-driven vessels and are subject to the rules and regulations that govern powered craft.



What is a Personal Watercraft?

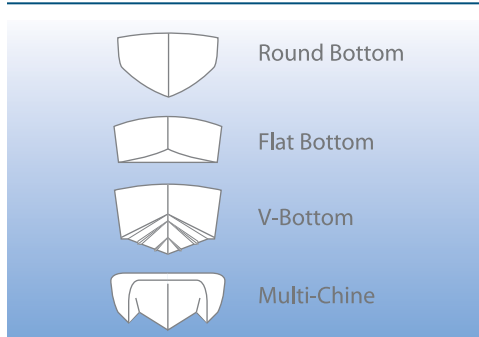
Personal Watercraft (PWCs) are equipped with an inboard engine and are propelled by an internal jet-propulsion system. Because of their size and method of propulsion, PWCs have unique handling characteristics compared to traditional power-driven craft. For example, PWCs cannot steer unless throttle power is applied by the operator.



The Hull

The “hull” of a boat is the portion of the craft that rides in, or on top of the water. The hull does not include any masts, sails, rigging, machinery or equipment. Several types of hulls can be found on both power-driven and sailing craft:

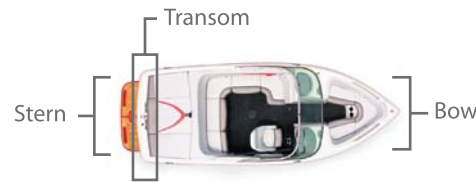
- A **Planing Hull** is designed to *lift (or plane)* onto the top of the water as the boat gains speed. Most small powerboats utilize planing type hulls
- A **Displacement Hull** is designed to travel *through* the water using an efficient amount of propulsion. Larger vessels are typically designed with displacement hulls because of their large size and drafts
- A **Pontoon Hull** utilizes two or more pontoons to create *lift and flotation*. Pontoon hulls typically have flat decks and may be fitted with or without a cabin



Hull Configurations

The shape or configuration of a boat's hull greatly affects its performance. Operators should be able to identify the design of a hull and understand its unique handling characteristics:

- **Round-Bottom:** Typical to sailboats, round-bottom hulls are not as stable and tend to roll in waves and rough water conditions
- **Flat-Bottom:** Typical to some ski-boats or smaller craft like rowboats, flat-bottom hulls offer a more stable platform but tend to “bounce” or “slap” the water in rough conditions
- **Vee-Bottom:** The most common type of power-boat hull, a vee-bottom hull is shaped like a “v” and can cut through rough water
- **Multi-Chine Hull:** Multi-hull craft, such as catamarans, are very stable but can be more difficult to manoeuvre



Definitions

Bow

The forward part or front section of a pleasure craft is defined as the bow.

Stern

The rearward part or rear section of a pleasure craft is defined as the stern.

Transom

The stern cross-section of a boat. The transom forms the back of the boat.

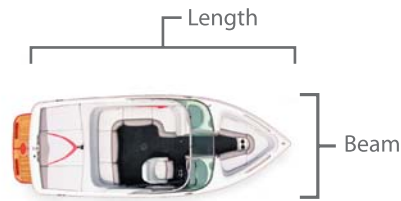


Draft

Draft is defined as the depth of water that a boat needs in order to float freely. A boat's draft is measured as the distance from the vessel's waterline to the lowest point of the hull. If a vessel is equipped with an outboard motor or stern drive, the draft is the distance from the waterline to the lowest point on the engine.

Freeboard

Freeboard is considered to be the distance from the top of the deck to the waterline.



Length

A boat's length is defined as the distance from the tip of the bow to the farthest point on the stern (measured in a straight line). If the boat is equipped with a swim platform it is not considered as part of the boat's overall length.

Beam

A boat's beam is defined as the width of a boat at its widest point.



Outboard Engine

An outboard engine is fixed to the transom (stern) of a boat. The operator steers the craft by moving the entire engine and drive assembly. Outboard engines come in a variety of engine sizes and configurations.

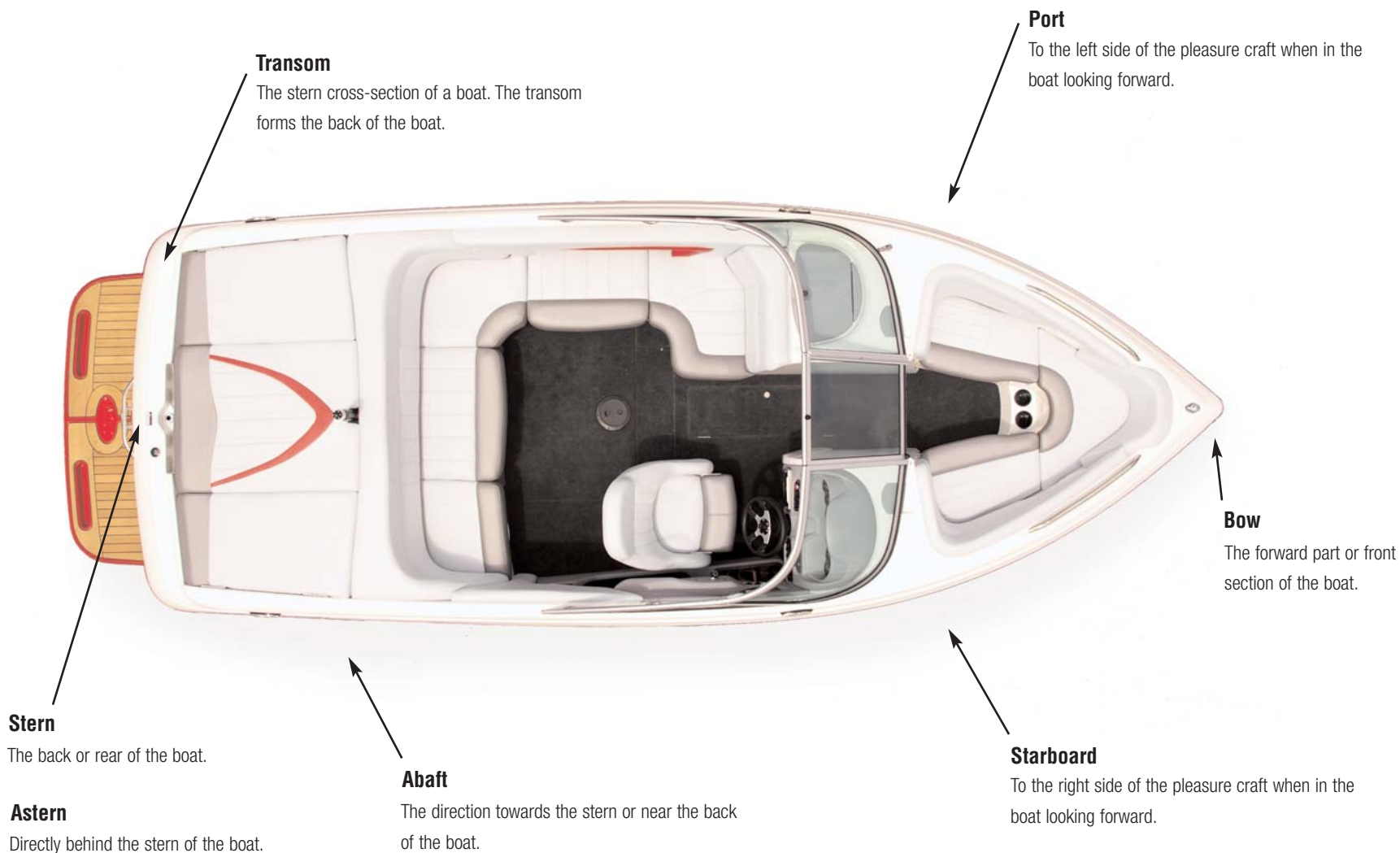


Inboard/Outboard Engine

An "inboard/outboard" engine is mounted within the hull of the craft. The lower unit, which consists of the propeller and drive assembly, is mounted on the transom at the stern of the craft. In an inboard/outboard configuration, the operator steers the craft by moving the lower unit left or right.

Inboard Engines

An "inboard" engine is one where the motor and a significant portion of the drive assembly are mounted within the hull of the craft. In an inboard engine configuration, only the propeller and propeller shaft extend outside the hull. The operator steers the craft by moving a rudder which is affixed at the stern of the craft behind the propeller.



Handlebars & Throttle

Steer the PWC by turning the handlebars and applying throttle.

Safety Lanyard & On/Off Switch

The safety lanyard is attached to the on/off switch at one end and to the operator at the other end. If you fall of the PWC, the lanyard will release and the engine will shut down immediately.

Seat

The driver and passengers should be seated at all times.

Jet Intake

Water enters the Jet Intake where it passes through a high-speed impeller to propel the PWC. Use caution when near the intake - Loose items such as clothing and hair can be ingested through the intake by the force of the water and rotating impeller.

Jet Thrust Nozzle

High-powered water propels the PWC through the Jet Thrust Nozzle. Never start the engine or operate the PWC if a passenger is positioned behind the nozzle.





Safety Equipment

The *Small Vessel Regulations* require that certain safety equipment be carried onboard at all times. The type of equipment necessary varies according to the type and size of craft being operated (specific requirements are listed in Appendix A, pages 44 & 45).

The *Small Vessel Regulations* also require that safety equipment be **maintained** so that it functions properly when needed. All safety equipment should be stored in a location onboard the craft where it is **readily accessible** to both the operator and passengers.

There are four types of safety equipment required for operation on Canadian waterways:

- 1) **Personal Safety Equipment**
- 2) **Boat Safety Equipment**
- 3) **Distress Equipment**
- 4) **Navigation Equipment**



Personal Safety Equipment

Boaters are required to carry personal safety equipment onboard at all times. This equipment includes:

- Personal Flotation Devices / Lifejackets
- Buoyant Heaving Line
- Emergency Kit



Approved Flotation Devices

Wearing an approved, properly fitted flotation device greatly reduces the risk of accidental drowning. In fact, Canadian Coast Guard statistics show that boaters wearing an approved flotation device are 5.5 times less likely to drown. Pleasure craft operators and their passengers should wear an approved personal flotation device or lifejacket **at all times** while onboard a boat.

There are three main types of flotation devices approved for use in Canada:

- 1) Lifejackets
- 2) Personal Flotation Devices (PFDs)
- 3) Inflatable PFDs

Lifejackets or PFDs bear a label or stamp indicating approval by the Department of Transport, Canada. PFDs can also bear approval by the Canadian Coast Guard. The approved status of Lifejackets and PFDs is void if the flotation device has been damaged, altered, or repaired or if the label or stamp indicating approval is illegible.



Lifejackets

Approved Lifejackets can be found in both Standard and Small Vessel configurations and are designed to turn an unconscious person face up in the water.

Standard Lifejackets feature a high degree of buoyancy and turning ability but are typically uncomfortable. Similar in design, **Small Vessel Lifejackets** are also designed to turn an unconscious person but are not as buoyant and have less turning ability.

All Lifejackets must be **red, orange or yellow** in color and are available in both adult and youth sizes. Lifejackets should be fitted to the size of person wearing the device. Both Standard and Small Vessel Lifejackets are reversible and feature a “keyhole” or “vest” design.

Lifejackets should fit snugly but not restrict the free movement of arms and legs. All zippers, fasteners, buckles and straps should be adjusted to ensure a proper fit.



Personal Flotation Devices

Personal Flotation Devices (PFDs) offer a more comfortable and less restrictive fit than Lifejackets. However, PFDs are designed only to keep you afloat while in the water and do not provide turning ability. As such, they are not as safe as Lifejackets.

PFDs come in keyhole, vest, coat and coverall designs. Child, youth and adult sizes are available and should be fitted to the size of the person wearing the device.

PFDs should fit snugly but not restrict the free movement of arms and legs. All zippers, fasteners, buckles and straps should be adjusted to ensure a proper fit.

PFDs are available in a variety of approved colors.



Inflatable PFDs

Some PFDs are inflatable – A carbon dioxide cartridge is used to inflate the PFD. Once inflated, the PFD is able to keep a person afloat. Inflatable PFDs are only approved for use by persons 16 years or older that weigh more than 36 kilograms. To meet the *Small Vessel Regulations*, inflatable PFDs must be worn at all times while on deck or in the cockpit of an open vessel. If the carbon dioxide cartridge has been used it must be replaced in order for the PFD to be considered legal for use.

Inflatable PFDs are approved for certain uses only. For example, inflatable PFDs are not approved for use on PWCs. If you are planning to purchase an inflatable PFD, choose one that is approved for your specific uses and needs.



Making the Right Choice

When choosing a PFD or Lifejacket, you should consider the following:

- Choose a PFD or Lifejacket that suits the activities that you plan to use it for
- Check the label or stamp and confirm the PFD or Lifejacket has been approved for use in Canada
- Verify that the PFD or Lifejacket is appropriate for your size and weight
- Check that it fits snugly but allows for freedom of movement
- If purchasing a PFD or Lifejacket for another person, ensure that it meets the criteria for that person



Children's PFDs and Lifejackets

Many Lifejackets, although certified for use, may not properly protect a child and/or float them face up. Choose a PFD or Lifejacket that has been specifically designed for use by children to ensure their safety.

A children's PFD / Lifejacket should have the following:

- A label or stamp indicating that it has been approved for use in Canada
- An extra large collar to support the child's head
- A safety strap that fastens between the legs to prevent the jacket from slipping over the child's head
- A grab strap located on the collar
- Reflective material and safety whistle



Children should be encouraged to wear a PFD or Lifejacket at all times. Be sure that children understand how to properly fit and use their PFD or Lifejacket.

The PFD or Lifejacket should always be properly fitted to the child. Never purchase an oversized PFD or Lifejacket or "make do" with one that is close to the right size. Never purchase a larger size than appropriate in the hope that the child will "grow into it".

Remember

The weight distribution in a child's body (the head is heavier than the body) means they do not float well in a face-up position and may panic easily. A PFD or Lifejacket should never be used as a substitute for adult supervision.



Testing PFDs and Lifejackets

PFDs and Lifejackets should be **tested for buoyancy** at the start of each season and on a regular basis throughout the season. To test a PFD and/or Lifejacket, perform the following procedure:

- 1) Put on and properly fit the PFD or Lifejacket
- 2) Wade into chest deep water
- 3) Bend your knees and float onto your back
- 4) Ensure the PFD or Lifejacket keeps your chin above the water and permits proper breathing

Children should also test their PFDs and/or Lifejackets to ensure proper fit and buoyancy. Have your child follow the same procedures as above in a controlled environment under parental supervision.



Proper Care and Maintenance

Lifejackets and PFDs are designed to save lives. As one of the most important pieces of safety equipment onboard your craft, they should be maintained and cared for as follows:

- PFDs/Lifejackets should never be used as cushions or fenders - They may become damaged and less effective, thus voiding their approved status
- PFDs/Lifejackets should be air dried out of direct sunlight and away from a direct heat source
- When not in use PFDs/Lifejackets should be stowed onboard your craft in a dry, well ventilated area
- Ensure the storage location is readily accessible by both the operator and passengers on the craft and never in the proximity of gasoline or chemicals
- Inspect regularly. If ripped or damaged, PFDs/Lifejackets should be replaced immediately



Cleaning PFDs and Lifejackets

To clean a PFD or Lifejacket:

- 1) Use mild soap and water
- 2) Rinse thoroughly
- 3) Never dry-clean or use strong detergents, gasoline, or chemicals/solvents
- 4) Air dry out of direct sunlight and away from direct heat sources



Putting on a Flotation Device in the Water

Practice the following procedure for putting on your Lifejacket or PFD while in the water:

- 1) Find a supervised area to practice the procedure
- 2) Spread the flotation device open with the inside facing up and out of the water and the neck facing towards you
- 3) Extend your arms through the arm openings
- 4) Lift your arms above your head
- 5) Lie backwards and pull the flotation device around your upper body
- 6) Fasten the zipper, straps, buckles and/or ties to ensure a snug fit

Remember

It is recommended that you wear an approved PFD or Lifejacket at all times while onboard your pleasure craft. If you find yourself in an emergency situation while not wearing a PFD or Lifejacket, you may be putting yourself at risk of injury or death.



Buoyant Heaving Line

A buoyant heaving line is equipped with a buoy or float at one end. It is designed to be thrown to a person in the water who is in need of assistance:

- The *Small Vessel Regulations* require that heaving lines be at least 15 m in length
- Some heaving lines are light and therefore can be difficult to throw longer distances. You should practice throwing a heaving line before an emergency situation arises
- Using a heaving line equipped with a throw bag (a weighted canvas or nylon bag at one end) will enable you to throw the bag with less difficulty and ensure the line does not become tangled



Emergency Kit

Pleasure craft operators should carry an emergency safety kit onboard at all times. The kit should be stored in a watertight plastic bag and be easily accessible in case of emergency. The kit should include:

- Emergency rations
- Drinking water
- A First Aid kit
- Waterproof matches
- A waterproof flashlight
- A knife
- A whistle
- Dry clothing

Boat Safety Equipment |



Boat Safety Equipment

You are required to carry boat safety equipment on your vessel at all times. Different sizes and types of boats are required to carry different equipment. Refer to Appendix A (pages 44 & 45) for a complete list of required equipment for your craft.

Boat safety equipment includes:

- Bailing Devices
- Manual and Electric Bilge Pumps
- Anchor
- Manual Propelling Devices (Oars / Paddles)
- Axe
- Repair Kit
- Life Ring
- Fire Extinguisher
- Re-boarding Device



Bailing Device

A bailing device is used to remove water from inside a boat:

- Bailing devices are usually home-made plastic or metal scoops
- A bailing device can be made from cutting the top of a bleach bottle
- The *Small Vessel Regulations* require that bailers must have a volume of at least 750 ml and an opening that is at least 65 cm² in area
- Purpose-built bailing devices can also be purchased from your local marine retailer



Manual and Electric Bilge Pumps

Manual Bilge Pumps

Similar in look to a bicycle pump, a manual bilge pump utilizes a pumping chamber, a water intake hose (or chamber) and a discharge hose to dispel water. If using a manual pump, ensure the discharge hose is long enough to reach over the side of the boat.

Electric Bilge Pumps

Some pleasure craft are fitted with electric bilge pumps. Typically located in the engine compartment and controlled from the pleasure craft's cockpit, electric bilge pumps are designed to remove water from the hull of a vessel. Certain models are equipped with an automatic switch and turn on automatically if the water level in the bilge begins to rise.



Anchor

If operating a pleasure craft 8 m in length or greater you are required to carry an anchor. An anchor can be used to secure your boat in case of a breakdown or non-operation due to poor weather.

The *Small Vessel Regulations* require that an anchor be fitted with at least 15, 30 or 50 m of cable, rope or chain in any combination. The length depends on the size of your vessel.

Remember

The inboard end of the anchor line should be securely fastened to the bow of your craft. The outboard end of the anchor line should be securely fastened to the anchor.



Manual Propelling Device

Manual propelling devices, such as oars or paddles, can be used to manoeuvre your craft in the case of a breakdown. Most vessels are required to carry paddles or oars with oar locks. If operating a vessel less than 8 m in length you may use an anchor with a minimum of 15 m of rope, cable or chain in place of a manual propelling device.



Axe

Those operating large vessels (over 12 m in length) must carry at least one axe onboard at all times. An effective fire-fighting tool, an axe can be used to chop into a wall that is concealing open flames.



Repair Kit

Operators should always carry a repair kit including essential tools and spare parts. Tapered wooden plugs, underwater sealing compounds, patch kits and duct tape can all be used to stop hull leaks. A basic toolset including wrenches, sockets and driver, spare nuts and bolts, cotter-pins, and spare spark plugs should be carried onboard at all times. Ensure that tools and spark plugs are the appropriate size for your craft.



Life Ring

A life ring (sometimes called a life buoy) is a circular shaped device that can be used to rescue a person who has fallen overboard.

The ring must be circular in shape, have an outside diameter of either 610 mm or 762 mm, and carry a sticker indicating that it has been approved for use by the Department of Transport, Canada. A life ring must be attached to a line of at least 15 m in length.



Re-boarding Equipment

A re-boarding device, such as a ladder, is designed to allow easy re-boarding of the vessel from the water. The *Small Vessel Regulations* require that all craft greater than 6 m in length must carry an appropriate re-boarding device if the freeboard of the craft is greater than 0.5 m.

Suitable re-boarding devices include:

- A portable ladder
- A built-in transom or swim platform ladder
- A sling
- A rope



Fire Extinguisher

When properly used a fire extinguisher can save your life and the lives of your passengers. You may be required to carry a fire extinguisher onboard your craft at all times (depending on the size and type of craft being operated). For example, a Class 5 BC fire extinguisher is required on any boat that has either an inboard motor, a fixed fuel tank or an appliance that burns fuel.

Extinguisher Rating System:

Fire extinguishers are rated using a system of letters and numbers:

- **Class A:** Designed for use on combustible solid materials such as wood and paper
- **Class B:** Designed for use on combustible liquid fires including gas, oil and grease
- **Class C:** Designed for use on electrical fires

The number preceding the letter designation identifies the size of fire the extinguisher is capable of putting out. For example, a Class 3 extinguisher can extinguish a larger fire than a Class 2 extinguisher, and so on.



Requirements

The *Small Vessel Regulations* require that Class BC extinguishers be used on pleasure craft in Canada. However, the use of a Class ABC fire extinguisher is recommended. Ensure that the fire extinguisher you choose meets the requirements for the size and type of your craft. (See Appendix A, pages 44 & 45)

Even if your craft is equipped with a fire suppression system, you may still be required to carry a portable fire extinguisher that is suitable for your craft.

All fire extinguishers used for marine purposes in Canada must be approved by the Department of Transport, Canada, the Underwriters Laboratories of Canada (ULC), the British Board of Trade for Marine Use, or the United States Coast Guard.



Flares

Flares and pyrotechnic devices are used to signal distress and/or need of assistance.

You may be required to carry certain types of flares onboard depending on the size and type of craft and the body of water in which you are operating. For example, you are required to carry flares if operating in any ocean or if operating in a waterway where you may operate at any distance farther than 1 mile from shore. Vessels that are 6 m to 12 m in length are not required to carry flares if they are operating in a river, canal, or lake within 1 mile of the shore. Please see Appendix A for your craft's requirements.

Flares should always be stored in a watertight container and located in a cool, dry area easily accessible in case of emergency.



Proper Use

All flares and pyrotechnic distress signals must be approved for use by the Department of Transport, Canada and are valid for only **four years** from their date of manufacture. Flares or other pyrotechnic devices are explosive – they should always be used with caution and kept out of the reach of children. Always follow the **manufacturer's instructions** located on the packaging or casing **before** using a flare or pyrotechnic device.

It is illegal to test or discharge a flare if not used for an emergency situation. Only dispose of flares in an approved manner – contact your local law enforcement agency, fire department or the Canadian Coast Guard for proper disposal procedures.



Types of Approved Flares

There are four types of flares approved to signal distress:

- 1) **Type A:** Parachute Flare
 - Easily seen from water, land and air
 - Must emit a red light
- 2) **Type B:** Multi-Star Flare
 - Easily seen from water, land and air
 - Must emit a red light
- 3) **Type C:** Hand-Held Flare
 - Not as easily seen from afar but effective for marking your position
 - Must emit a red light
- 4) **Type D:** Smoke Flare
 - Highly visible during daylight hours
 - Must give off orange smoke



Watertight Flashlight

Most vessels are required to carry at least one watertight flashlight onboard at all times. In an emergency, a flashlight can be used as an illuminating device or to send a distress signal.

You can signal distress or need for assistance by flashing **SOS** - three short flashes, then three long flashes, followed by three short flashes.



Sound-Signalling Devices and Appliances

Sound-signalling devices serve several important functions:

- To signal distress or need of assistance
- To alert other boats of your position in poor visibility
- For navigation purposes

The *Small Vessel Regulations* require that **all vessels** carry some form of sound-signalling device and/or appliance. Approved sound-signalling devices and appliances must be audible for a minimum of 0.93 km.

Types of sound signalling devices and appliances include:

- Mechanical (floatless) whistle
- Horn
- Portable compressed-air horns
- Bell



Pleasure craft less than 12 m in length are required to carry at least one sound-signalling device or other means of making an efficient sound signal. Pleasure craft longer than 12 m are required to carry at least two sound-signalling devices, such as a mechanical whistle or bell.

Remember

It is also good practice to attach a floatless whistle to your PFD or Lifejacket and those of your passengers. Doing so will enable the person to signal for help if stranded in the water.



Navigation Lights

Navigation lights are essential for operating during periods of restricted visibility or at night. Navigation lights make your craft visible from all angles and must be displayed one hour prior to sunset and remain on until one hour after sunrise.

Watertight Flashlight

If your craft is unable to display navigation lights and you are operating during nighttime (or during a period of reduced visibility), then you must have a watertight flashlight, lantern, or spotlight emitting a white light to prevent a collision.



Passive Radar Reflector

A passive radar reflector is a metallic device that is used to identify the position of your boat to other vessels equipped with radar. A radar reflector must be mounted or suspended at least 4 m above the waterline on all vessels that are less than 20 m in length and constructed of non-metallic materials.

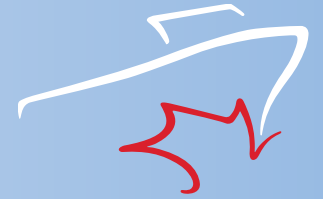
However, the use of a passive radar reflector is not required if:

- You are operating on a waterway where no other vessels are using radar
- It is impractical to mount on your vessel
- Traffic conditions are limited
- Operating during daylight hours
- Operating in good weather conditions and calm waters
- If the use of radar reflector is not essential for safe operation of your craft

Required Safety Equipment |

	Sailboards	Paddleboats & Watercycles	Canoes, Kayaks, Rowboats and Rowing Shells (not over 6 m in length)	Unpowered Pleasure Craft (not over 6 m in length)	Personal Watercraft (PWC)
Personal Safety Equipment	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard</p> <p>Buoyant Heaving Line at least 15 m in length (exempt if all people on board wear an approved flotation device)</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard</p> <p>Buoyant Heaving Line at least 15 m in length (exempt if all people on board wear an approved flotation device)</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard</p> <p>Buoyant Heaving Line at least 15 m in length</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard</p> <p>Buoyant Heaving Line at least 15 m in length</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard</p> <p>Buoyant Heaving Line at least 15 m in length</p>
Boat Safety Equipment	<p>Manual Propelling Device (exempt if all people on the sailboard wear an approved flotation device)</p>	<p>None required</p>	<p>Manual Propelling Device or Anchor with 15 m line</p> <p>Bailer or Manual Water Pump</p>	<p>Manual Propelling Device or Anchor with 15 m line</p> <p>Bailer or Manual Water Pump (not required for any multi-hull craft that has subdivided multiple-sealed hull construction)</p>	<p>Manual Propelling Device or Anchor with 15 m line</p> <p>Bailer or Manual Water Pump</p> <p>One Class 5BC Fire Extinguisher</p> <p>(all the above not required if all people onboard wear an approved flotation device)</p>
Navigation Equipment	<p>Sound-Signalling Device</p>	<p>Sound-Signalling Device</p> <p>Navigation lights or Watertight Flashlight (if operated at night or during periods of poor visibility)</p>	<p>Sound-Signalling Device</p> <p>Navigation lights or Watertight Flashlight (if operated at night or during periods of poor visibility)</p>	<p>Sound-Signalling Device</p> <p>Navigation Lights or Watertight Flashlight (if operated at night or during periods of poor visibility)</p>	<p>Sound-Signalling Device</p>
Distress Equipment	<p>Watertight Flashlight or three Flares (Type A, B or C) (exempt if all people on the sailboard wear a PFD)</p>	<p>Watertight Flashlight or three Flares (Type A, B or C) (exempt if all people onboard wear a PFD)</p>	<p>None required</p>	<p>None required</p>	<p>Watertight Flashlight or three Flares (Type A, B or C)</p>

	Powered Craft (not over 6 m in length)	Powered Craft (Over 6 m and up to 8 m in length)	Powered Craft (Over 8 m and up to 12 m in length)	Powered Craft (Over 12 m and up to 20 m in length)	Powered Craft (Over 20 m in length)
Personal Safety Equipment	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard (except for any infant who weighs less than 9 kg or person whose chest size exceeds 140 cm)</p> <p>Buoyant Heaving Line at least 15 m in length</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard (except for any infant who weighs less than 9 kg or person whose chest size exceeds 140 cm)</p> <p>Buoyant Heaving Line at least 15 m in length or an approved Life Buoy with 15 m buoyant line</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard (except for any infant who weighs less than 9 kg or person whose chest size exceeds 140 cm)</p> <p>Buoyant Heaving Line at least 15 m in length</p> <p>Approved Life Buoy with 15 m buoyant line</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard (except for any infant who weighs less than 9 kg or person whose chest size exceeds 140 cm)</p> <p>Buoyant Heaving Line at least 15 m in length</p> <p>Approved Life Buoy with 15 m buoyant line and self-igniting light</p>	<p>One Canadian approved PFD or Lifejacket of appropriate size for each person onboard (except for any infant who weighs less than 9 kg or person whose chest size exceeds 140 cm)</p> <p>Buoyant Heaving Line at least 30 m in length</p> <p>Two approved Life Buoys (must be of 762 mm) attached to 30 m of buoyant heaving line, one with self igniting light</p>
Boat Safety Equipment	<p>Manual Propelling Device or Anchor with 15 m line</p> <p>Bailer or Manual Water Pump with sufficient hose</p> <p>One Class 5BC Fire Extinguisher (if equipped with an inboard engine, a fixed fuel tank of any size, or fuel-burning appliance)</p>	<p>Manual Propelling Device or Anchor with 15 m line</p> <p>Bailer or Manual Water Pump with sufficient hose</p> <p>One Class 5 BC Fire Extinguisher if power driven and One Class 5 BC if equipped with a fuel burning appliance</p> <p>Re-boarding Device (If the vessel's freeboard is greater than 0.5 m)</p>	<p>Anchor with a cable, rope or chain of not less than 30 m</p> <p>Bailer (with an opening of 65m² and volume 750 ml)</p> <p>Manual Water Pump with sufficient hose</p> <p>One Class 10 BC Fire Extinguisher if power driven and One Class 10 BC if equipped with a fuel burning appliance</p> <p>Re-boarding Device (If the vessel's freeboard is greater than 0.5 m)</p>	<p>Anchor with 50 m line</p> <p>Mechanical Bilge Pump</p> <p>Class 10 BC Fire Extinguisher at each of the following: -entrance to any space where a fuel burning appliance is present -entrance to any accommodation space -entrance to the engine room</p> <p>Axe</p> <p>2 Buckets (each with a capacity of 10L or more)</p> <p>A Re-boarding Device</p>	<p>Anchor with 50 m line</p> <p>Mechanical Bilge Pump</p> <p>Class 10 BC Fire Extinguisher at each of the following: -entrance to any space where a fuel burning appliance is present -entrance to any accommodation space -entrance to the engine room</p> <p>2 Axes</p> <p>4 buckets with minimum 10L capacity</p> <p>Firefighting Hose, Nozzle, and Pump located outside mechanical area</p> <p>One lifting harness with appropriate rigging</p> <p>A Re-boarding Device</p>
Navigation Equipment	<p>One Sound-Signalling Device or one Sound-Signaling Appliance</p> <p>Navigation Lights or Watertight Flashlight (if operated at night or during periods of poor visibility)</p>	<p>One Sound-Signalling Device or one Sound-Signaling Appliance</p> <p>Navigation Lights or Watertight Flashlight (if operated at night or during periods of poor visibility)</p>	<p>One Sound-Signalling Device or one Sound-Signaling Appliance</p> <p>Navigation Lights (as per the <i>Collision Regulations</i>)</p>	<p>Two Sound-Signalling Appliances (Bell or Mechanical Whistle)</p> <p>Navigation Lights (as per the <i>Collision Regulations</i>)</p>	<p>Two Sound-Signalling Appliances (Bell or Mechanical Whistle)</p> <p>Navigation Lights (as per the <i>Collision Regulations</i>)</p>
Distress Equipment	<p>Watertight Flashlight or three Flares (Type A, B or C)</p>	<p>Watertight Flashlight</p> <p>6 Flares (Type A, B, or C)</p>	<p>Watertight Flashlight</p> <p>12 Flares (Type A, B, C or D - maximum of 6 type D)</p>	<p>Watertight Flashlight</p> <p>12 Flares (Type A, B, C or D - maximum of 6 type D)</p>	<p>Watertight Flashlight</p> <p>12 Flares (Type A, B, C or D - maximum of 6 type D)</p>



Module 2 | Summary |

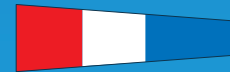
Knowing your equipment and understanding how to use it properly is the first step in achieving boating safety. You should be able to recognize the different types of craft that operate on Canada's waterways and understand the limits and handling characteristics of each.

Having the required safety equipment onboard at all times will enable you to respond effectively in emergency situations. Be sure to maintain and store safety equipment properly so it is readily accessible and functioning properly when you most need it. Always wear an approved PFD or Lifejacket and ensure your passengers do the same.

Remember: Carrying the right safety equipment is not only the law, it can save your life!

- 1) Your flotation device should fit **snugly** but allow for the **free movement** of your arms and legs.
True or False?
- 2) You should only wear an **approved flotation device** in case of emergency.
True or False?
- 3) A **planing hull** is designed to cut through the water rather than gliding on top of it.
True or False?
- 4) Flotation devices must be **approved** by which of the following organizations?
 - A - The Canadian Coast Guard College
 - B - The Canadian Standards Association
 - C - The Department of Transport and the Canadian Coast Guard
 - D - The Canadian Coast Guard and the Canadian Standards Association
- 5) Which pleasure crafts are required to carry an **anchor**?
 - A - Those over 6 m in length
 - B - Those over 8 m in length
 - C - Those equipped with an engine
 - D - Those equipped with sleeping quarters
- 6) Which of the following is the correct **definition** of a **pleasure craft**?
 - A - Any vessel, ship, boat or other type of craft that is used exclusively for pleasure or recreation
 - B - Any vessel, ship, boat or other type of craft
 - C - Any vessel, ship, boat or other type of craft that is primarily used for pleasure or recreation
 - D - Any vessel, ship, boat or other type of craft that can carry passengers
- 7) What is the **back** of a boat called?
 - A - Astern
 - B - Freeboard
 - C - Bow
 - D - Stern
- 8) What is the **front** of a boat called?
 - A - Beam
 - B - Bow
 - C - Gunwale
 - D - Bilge
- 9) What type of cleaner or solvent should you use to **clean** an approved flotation device?
 - A - Gasoline
 - B - Chemical solvents
 - C - Mild soap and water
 - D - Colour safe bleach
- 10) Which of the following is the correct definition of a boat's **hull**?
 - A - The portion of the boat in the water
 - B - The portion of the boat both in and above the water
 - C - The body of the pleasure craft excluding masts, sails, rigging, equipment or machinery
 - D - The body of the pleasure craft excluding machinery

module 3



Before Heading Out

In This Module You'll Learn:

- *How to properly maintain your boat and equipment*
- *How to transport your boat*
- *The importance of understanding local hazards*
- *The importance of using Marine Charts and Nautical Publications*
- *How to properly assess the weather, including wind speed definitions*
- *How to prepare and file a Trip Plan*
- *How to prepare and file a Pre-Departure Checklist*
- *The proper procedures for refueling your craft*



Maintaining Your Craft

There's nothing better than an enjoyable day on the water. Don't let it get spoiled by a breakdown. As a responsible operator, you should always plan ahead. Take care to properly maintain your vessel and equipment, plan your trip and make use of a Pre-Departure Checklist. Doing so will ensure your safety and that of your passengers.

Being properly prepared and maintaining your equipment will also alleviate unnecessary burden on search and rescue organizations such as the Canadian Coast Guard.

Regular maintenance reduces the likelihood of costly breakdowns and saves lives. You should inspect your boat and equipment on a regular basis and become familiar with basic repairs.

Remember

The *Criminal Code of Canada* requires that you keep your boat and equipment in seaworthy condition. **It's the law.**



Pre-Season Maintenance

Use the following as a checklist for **pre-season** maintenance:

- 1) Check the hull and bilge for any damage including cracks and leaks
- 2) Check the condition and operation of the outdrive, including:
 - Shafts
 - Propellers
 - Prop
 - Nuts and pins
- 3) Check the operation and condition of all systems including:
 - Fuel, electrical and cooling systems
- 4) Check the condition of hoses and lines and replace worn, broken or cracked lines
- 5) Check the condition the throttle control
- 6) Check all electrical connections. Clean and tighten any corroded or loose connections
- 7) Check the condition of all navigation lights



- 8) Inspect and clean the engine's flame arrestor with soap and water
- 9) Check and replace engine oil if necessary
- 10) Check and replace air and fuel filters if necessary
- 11) With the engine running, check the operation of all gauges and alternator for charging capacity
- 12) Check the condition of the battery. (A fully charged battery should hold its charge for 24 hours)

Module 3 | Regular Maintenance

For complete Pre-Season and Regular Maintenance Checklists please visit www.boatsmartcanada.ca

1) Maintain a “Dry” Craft

You should always keep the inside of your vessel dry. Use a bailer or manual pump to remove water from the bilge of your craft. When the boat is on a trailer, remove the drain plug at the stern and allow the bilge to drain.

2) Clean and Inspect the Hull

Clean the hull of your craft on a regular basis using an environmentally-friendly marine detergent. Once cleaned, inspect the hull for any signs of damage or unusual wear (if possible, remove your boat from the water and clean and inspect the hull while on a trailer). Any cracks, leaks or potential problem areas should be fixed immediately.

3) Inspect the Steering System

Examine the vessel's steering system on a regular basis. The steering system should allow the operator to steer the boat freely and smoothly. Replace any worn or damaged steering components. Ensure that any hydraulics are functioning properly.

PWC operators should ensure steering cable mounting brackets are securely fastened and should lubricate steering and throttle cables on a regular basis.

Remember

Your owner's manual contains valuable tips for maintaining the operating condition of your craft and its engine. You should always refer to the manufacturer's suggested maintenance schedule and follow it accordingly.

4) Inspect the Engine

Check oil and fluid levels before every use. Engines equipped with oil injection units should be inspected to ensure the water separator is functioning properly. Lubricate moving parts on a regular basis.

5) Inspect the Fuel System

Perform a visual inspection of the fuel system on a regular basis. Check for any leaks, loose connections, or cracked hoses. Check the fuel filter for the presence of dirt and/or water and clean or replace if necessary.

6) Inspect the Battery

Check the condition of the battery before each trip. If the battery has difficulty starting the motor it should be charged or replaced. Ensure that battery connections are tight and free of corrosion. Clean battery terminals and terminal connections with a steel brush if necessary.

7) Inspect Navigation Lights

Check the condition of all navigation lights before each trip and ensure that all lights are functioning properly. Replace any worn out bulbs. Make certain all connections are tight and free of corrosion. Carry spare bulbs (appropriate for your craft) onboard at all times.

8) Inspect the Outdrive and Propeller

Check the condition of the lower unit. Ensure the bottom portion (skeg) is undamaged. Gear case oil should be changed at least once per season (or more often with additional use). Check the propeller for damage or excessive wear. A damaged propeller will cause vibration, loss of fuel economy and could damage internal parts including the gear case. A damaged propeller should be refurbished or replaced as soon as possible.

PWC operators should check the condition of the craft's impeller. If it shows signs of damage (such as dings, and curled or broken edges) or excessive wear it should be replaced immediately. Check the condition of the wear ring that houses the impeller and replace it if worn or damaged. Change the gear case oil every 25-50 hours of use.

9) Fill Up After Each Use

You should fill the fuel tank after each use to prevent condensation. Doing so will also ensure your craft is prepared for your next trip on the water.



Winterization and Storage

When preparing to winterize your craft be certain to read your owner's manual. If unsure of the proper winterization procedure for your type of boat or PWC, visit your local marine dealer for advice and service.

The following is an overview of winterization and storage procedures:

- 1) Use an environmentally-friendly marine detergent or algae remover to clean the hull of your craft. Empty the bilge of any excess water and clean it using soap and water (or a marine-grade bilge cleaner). Cleaning the hull and bilge will remove any dirt, oil, fuel or marine life that may damage the hull over prolonged exposure
- 2) Drain and flush the engine's cooling system
- 3) Drain the engine's fuel system
- 4) Clean (or replace) the fuel filter
- 5) Remove the spark plugs and fog the engine cylinders with a rust inhibitor
- 6) Lubricate all moving parts
- 7) Clean off any excess grease, lubrication, dirt or marine life



Transporting Your Craft

Transporting your craft safely isn't difficult. Be sure to choose the right towing equipment and use common sense when loading and unloading your craft.

When choosing a trailer there a few things you should consider. Be sure to select a trailer that will properly support the weight and size of your boat. Your trailer must also meet provincial and local laws with respect to licensing, registration and operating lights.



Choosing a Trailer

First asses which style of trailer best suits your needs:

Bunk Style

A bunk style trailer uses two or more bunks (typically constructed from wood) to hold and support the weight of the craft. Bunk style trailers are best used for small boats and PWCs. However, bunk style trailers can be difficult to use on shallow boat ramps. The bunks must be fully submerged in order to properly launch or retrieve your craft.

Roller Style

A roller style trailer uses a series of rollers to hold and support the weight of the craft. Roller style trailers can be used for all types and sizes of craft with well constructed, deep-V fiberglass or welded aluminum hulls. Roller style trailers are easier to use on shallow boat ramps.



The Right Choice

Once you have determined which style of trailer is right for your needs, consider the following:

- Is the width and length of the trailer suitable for the width and length of your craft?
- Is the weight capacity of the trailer suitable for the weight of your craft? The weight of the boat (including engine and all fixed equipment) should not exceed 80% of the trailer's weight capacity. The remaining 20% of load capacity should be reserved for equipment and fuel
- Do all operating lights function properly?
- Are the wheel bearings properly greased and able to operate smoothly?
- Does the coupler (located at the front-end of the trailer) match the size of your vehicle's hitch ball?
- Is the trailer equipped with the required "closed-loop" safety chains?



Additional Considerations

Vehicle Capacity

The towing capacity of your vehicle should be considered before trailering any craft. Check your owner's manual to determine the manufacturer's recommended gross towing weight for your vehicle. The gross towing weight includes the weight of the craft, the engine, the trailer, and all fuel and equipment. The maximum gross trailer weight and the tongue load should not exceed that specified by the vehicle's manufacturer.

Trailer Brakes

Every provincial jurisdiction has its own laws pertaining to trailer brake requirements. For example, some provinces allow towing up to 50% of the net weight of the tow vehicle before brakes are required. Check with local and provincial authorities to determine if your trailer needs to be fitted with trailer brakes.



Trailer Hitch

In order to use a trailer, your vehicle must be fitted with a trailer hitch. The hitch should be installed by a reputable dealer and should be suitable for both your vehicle and size and type of trailer. The hitch should be equipped with a ball that matches the size of the coupler on your trailer.



Towing Your Craft

Attaching the trailer to your vehicle:

- 1) Before attaching the trailer to the vehicle, ensure that the trailer is properly balanced (See "Weight Distribution and Driving" this page)
- 2) Position the vehicle or trailer so that the hitch ball is directly below the trailer's coupler and lower the trailer
- 3) Securely fasten the tongue latch and lock the trailer coupler using a cotter pin
- 4) Using tie down straps, securely fasten the boat to the trailer
- 5) Attach the winch cable and/or winch safety chain to the bow eye of the boat (if so equipped)
- 6) Ensure that the trailer's safety chains are securely fastened to the hitch. Chains should be long enough to accommodate tight turns but short enough so that the tongue of the trailer cannot touch the road if it becomes dislodged from the hitch
- 7) Fasten the trailer's lighting harness to your vehicle



Weight Distribution and Driving

Establishing a proper hitch weight is essential for safe trailering. As a rule of thumb, **5-10%** of the total loaded weight should be on the tongue. Too light of weight will result in "fish-tailing" (swaying from side to side). Too much tongue weight could exceed the trailer hitch specifications and may affect the handling or your vehicle. Adjust the tongue weight by shifting equipment in the boat, or moving the position of the winch on the trailer. Depending on the trailer, the axles may also be moved to adjust weight distribution.

Always be aware of the added length and weight of the trailer **when driving:**

- Accelerate slowly
- Turn using a wider radius to allow for the trailer
- Drive at a slower speed than normal
- Allow greater braking distance



Launching Your Craft

When launching your boat:

- 1) Make a visual check of the launch area:
 - Is the ramp deep enough to launch your craft?
 - Are there any overhead wires or obstructions?
- 3) Remove all tie-down straps and unplug the trailer lights from your vehicle
- 4) Ensure the bilge drain plug is properly installed
- 5) Put all gear and safety equipment onboard the craft
- 6) Ensure the winch is connected to the bow of the craft
- 7) Attach a bow and stern line to the craft
- 8) Slowly back the trailer into the water until the motor becomes submerged
- 9) Test the operation of the motor by starting it and allowing it to warm up
- 10) Shut down the motor and continue backing the trailer into the water until the boat begins to float
- 11) Use the bow and stern lines to guide the boat off the trailer. Remove the vehicle from the ramp



Loading Your Craft

- 1) Secure the boat at the dock
- 2) Back the trailer into the water until it is two-thirds submerged
- 3) Turn off your vehicle and engage the emergency brake
- 4) Position the boat on the trailer using the bow and stern lines - Do not drive your boat onto the trailer
- 6) Attach the winch line to the bow-eye of your boat
- 7) Pull the boat up onto the trailer using the winch
- 8) Ensure the boat is properly seated and balanced on the bunks or rollers
- 9) Once the boat is in position, lock the winch and attach the winch's safety chain (if so equipped)
- 10) Remove your vehicle and trailer from the ramp
- 11) Once parked, attach the trailers lights and ensure they are functioning properly
- 12) Remove the boat's bilge drain plug
- 13) Secure the boat using tie-down straps before departing

Trailer Maintenance

Proper maintenance will ensure safe towing and extend the life of your trailer:

1) **Wheel Bearings**

Most new trailers are equipped with "Bearing Buddies" which act as replacements for traditional dust caps. Bearing Buddies enable you to grease the wheel bearings without having to disassemble the bearing assembly. Bearing Buddies are fitted with a filling "piston" and should be greased when the piston is in the "in" position.

2) **Brakes**

You should flush the brake system (if so equipped) with fresh brake fluid on an annual basis. Failure to properly flush the braking system can result in improper breaking and wheel lock-up.

3) **Rollers**

Roller assemblies should be greased regularly. Properly greased rollers will rotate smoothly under the weight of the boat. Greasing rollers regularly will also alleviate premature wear.

4) **Winch and Jack**

Its not uncommon for the trailer jack to seize during winter months. Apply a small amount of grease on winch and jack gears before the trailer is stored for the winter.

5) **Lights**

Ensure that all lights are working properly before each use. Replace bulbs when necessary. Although

most new trailers are fitted with submersible lights, it is recommended that you disconnect the lights from your vehicle before submerging the trailer.

Always carry spare bulbs for your trailer lights in your vehicle and/or boat.

6) **Tires**

Regularly check the condition of the tires and ensure that they are inflated to the recommended pressure.

Spring Maintenance

Every spring you should visually check the condition of the trailer. Check tire wear and operation of all components including the trailer lights. It is also recommended that leaf springs be sprayed with penetrating oil to block the formation of rust between the leaves.



Knowledge of Local Waterways

Safe boating is more than just a matter of operating your craft in a responsible manner. Knowing the waterways on which you're traveling and being able to locate potential hazards is also vital for your safety.

You can refer to a Marine Chart or Nautical Publication to determine the location of waterway hazards for the area in which you will be operating. You can also talk to local operators and marinas who are familiar with the waters to gain valuable insight. Ask about specific hazards that you may encounter and any dangers that should be avoided. You should also determine the location of any ports of assistance in case of emergency.

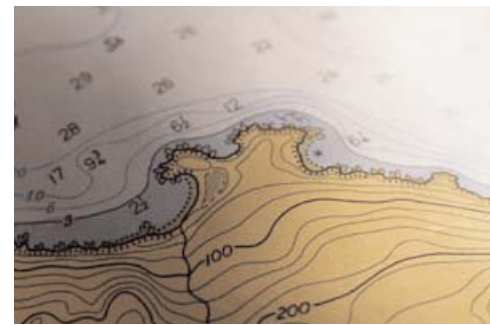


Understanding Local Hazards

Before heading out on the water you should familiarize yourself with any local water hazards or dangerous conditions that may impede the safe operation of your craft. Failing to do so could increase your risk of injury or loss of life to you or your passengers.

Local water hazards can include:

- Low head dams
- Rapids
- Currents
- White water
- Tides
- Sudden winds
- Overhead cables
- Underwater cables
- Bridges
- Rapid build-up of high wave conditions



Charts and Nautical Publications

A marine chart is a map of a body of water. Charts are primarily used to aid in navigation. Charts depict:

- Depth
- Underwater hazards
- Traffic routes
- Aids to Navigation (such as marker buoys)
- Adjacent coastal areas and landmarks around a body of water

The *Charts and Nautical Publications Regulations* require that operators carry the latest and largest scale versions of the following onboard at all times:

- **Local Marine Charts**
- **The Required Publications**
- **The Required Documents**

You may be exempt from these requirements if your vessel is under 100 tons and powered by oars, or if you have substantial knowledge of the local waterway. Charts and Nautical Publications are published by the Canadian Hydrographic Service, Department of Fisheries and Oceans, Canada.



Topographic Maps

In some cases, topographic maps can be useful to pleasure craft operators. Topographic maps depict natural and artificial features of the land and include illustrations of shoreline contours, rocks, elevations and land features or hazards near or above the waterline.

In some instances, such as when a nautical chart or publication is unavailable for a body of water, topographic maps may aid in the navigation of local waterways. However, topographic maps are intended primarily for use on land by the general public. They do not depict underwater hazards, marine aids to navigation, channels, or anchorage areas. Topographic maps are published by Natural Resources Canada and other provincial authorities.



Using a Compass

You can use a magnetic compass to determine direction and your position on a marine chart. Be wary when using a compass – A magnetic compass can be affected when in the proximity of **metallic** and **electrical devices** and may provide the operator with **false information**.



Using a GPS Device

GPS (Global Positioning System) devices can be used to identify your location. Some of today's systems are able to pinpoint your position to within several feet. GPS devices are becoming a popular tool amongst boating enthusiasts.

Marine charts and nautical publications now available in electronic format can be used in conjunction GPS systems to offer the boater an extremely high degree of navigation certainty. Be sure to familiarize yourself with your GPS system and practice using it before heading out on the water.



Local Forecasts

You should always check the local weather forecast **before heading out** on the water. Operating your vessel without knowledge of potential weather hazards may put your vessel and passengers at risk. Local forecasts are available from:

- Local newspaper
- Local radio
- Television weather forecast
- Radiotelephone
- The Meteorological Service of Canada

Personal Observations

Personal observations are also useful in predicting potential weather hazards. Before you head out (and while you're underway) you should watch for changes in temperature, wind speed and direction, sky colour and types of cloud patterns. Sudden or distinct changes in these conditions may signal an approaching storm or the onset of poor weather conditions.



Wind

The **Meteorological Service of Canada** classifies all wind speed and weather warnings in Canada. The service has identified five categories of wind conditions that are defined in terms of their wind speed and the water conditions they create. Wind speed is measured in knots – One knot is equivalent to 1.85 km/h.



Light Winds

Light winds are defined as “Winds with a wind speed less than **12 knots** (22 km/h)” and water surface conditions that are **calm** or have waves up to 1.5 m. Light wind conditions are suitable for most vessels and those operators with a moderate level of boating experience.



Moderate Winds

Moderate winds are defined as “Winds with a wind speed of **12 to 19 knots** (22 to 35 km/h)” and water surface conditions that are **rough** with waves from 1 to 3 m in height. Inexperienced operators or vessels under 6 m in length should not operate during such conditions.

Small vessels caught in a moderate winds advisory should attempt to cross waves at a 45 degree angle until sheltered waters are found. Ensure all passengers are wearing approved flotation devices.



Strong Winds and Small Craft Warnings

Strong winds are defined as “Winds with sustained wind speeds in the range of **20 to 33 knots** (37 to 61 km/h).” Water surface conditions during a strong winds advisory are **very rough** with waves 3 to 6 m in height. Environment Canada issues a **Small Craft Warning** when winds reach such levels. It is not safe to operate a pleasure craft under such conditions.

Vessels caught in a strong winds advisory or small craft warning should take immediate action to ensure their safety. Turn on all navigation lights and attempt to cross waves at a 45 degree angle until sheltered waters are found. If wind and wave conditions make it difficult to proceed, attempt to anchor your vessel until the storm subsides. Ensure all passengers are wearing approved flotation devices.



Gale Warning

Gale winds are defined as “Winds with a continuous speed of **34 to 47 knots** (63 to 87 km/h)”. Water surface conditions during a gale warning are **extremely rough** with waves 6 to 9 m in height. During such conditions, Environment Canada will issue a **Gale Warning**.

Vessels caught in a gale warning advisory should take immediate action to ensure their safety. Turn on all navigation lights and attempt to cross waves at a 45 degree angle until sheltered waters are found. If wind and wave conditions make it difficult to proceed, attempt to anchor your vessel until the storm subsides. Ensure all passengers are wearing approved flotation devices. Use an appropriate distress signal to exhibit your need for assistance if you are unable to make safe passage.



Storm Warning

Storm winds are defined as “Winds with a continuous speed of **48 to 63 knots** (89 to 117 km/h). Water surface conditions during a storm warning are **extremely rough** with waves over 8 m in height. During such conditions, Environment Canada will issue a **Storm Warning**. Vessels caught in storm warning conditions should immediately signal distress and need of assistance.



What Is A Trip Plan?

A trip plan is a document that outlines your expected travel itinerary while on the water. In the event that you do not return on time from your trip, the trip plan can be used by search and rescue organizations to help pinpoint your whereabouts.



Preparing a Trip Plan

A trip plan should include:

- The name of your pleasure craft
- License number of your pleasure craft
- Type of craft (Power or Sail)
- Size and colour of your pleasure craft
- Type of engine
- Distinguishing features of the pleasure craft
- Your name, address and telephone number
- Number of persons onboard
- Trip description including:
 - Time of departure
 - Time of return
 - Proposed route
- Type of radiophone and channel monitored (if so equipped)
- List of safety equipment onboard including flares, lifejackets and life rafts
- Instructions in case of emergency

Filing a Trip Plan

Where to File

A trip plan should be filed with a responsible person, a marina, or with the local Canadian Coast Guard detachment. The person you file your trip plan with should know what to do in case of emergency.

Changing A Trip Plan

If you change plans during your trip you should notify the person with whom you've filed the plan. Doing so will inform the person of your correct whereabouts and avoid a possible false alarm or unnecessary emergency actions.

On Return

On your return, you must remember to notify the person or organization with whom you filed the plan. Failing to do so may result in a false alarm and the launch of a search and rescue operation.

A sample trip plan has been included on page 141 of this manual. You can also download a free trip plan at www.boatsmartcanada.ca



Trip Plan

Personal Information

Owner's Name: _____
Address: _____
Phone Number: _____

Vessel Information

Vessel Name and License Number: _____
Vessel Type: Sail Power PWC Canoe/Kayak Other
Colour: _____ Hull: _____ Deck: _____
Size: _____
Type of Engine (if applicable): _____
Other distinguishing features: _____
Type of Radiotelephone: HF VHF MF
Channel Monitored: _____
Number and Type of Flares: _____
Type of safety equipment carried on board: _____

Trip Details

Number of persons on board: _____
Launch Point: _____ Date and Time: _____
Proposed Route: _____
Stop-Over Location(s): _____ Date and Time: _____
Arrival Point: _____ Date and Time: _____

Emergency Contacts

Local Search and Rescue Phone Number: _____
Person to contact in case of emergency: _____
Phone Number: _____

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Planning Ahead

Running out of fuel is the number one cause of boater distress. You should always be sure to plan your requirements and carry enough fuel.

As a general practice you should use the rule of thirds:

- One third **out**
- One third **back**
- One third in **reserve**



Safety Precautions When Fueling

Follow these simple common sense rules:

- Always use caution
- Do not overfill or spill fuel. Spilling fuel into the engine or passenger compartment can increase the risk of explosion or fire
- Refuel during daylight hours when an artificial light source is not needed (the electrical current from the light source can ignite fuel vapours)
- Never smoke while refueling

Remember

Gasoline is highly explosive when mixed with air. Gas vapours will ignite when exposed to flame or spark resulting in destruction of property, serious injury and death.



Fueling a Boat

The following procedure is not only recommended for safety – it's the law. When fueling a pleasure craft equipped with a gasoline or diesel engine, perform the following:

- 1) Ensure your pleasure craft is securely moored to the dock
- 2) Shut down all motors
- 3) Ask all passengers to disembark the craft and remain on shore
- 4) Extinguish any open flames, including cigarettes and pilot lights
- 5) Close all doors, windows, ports and hatches
- 6) Shut down all electrical equipment
- 7) Always have a fire extinguisher available in case of emergency
- 8) Check for leaks and fuel vapours/odors
- 9) When fuelling at a pump, keep the gas nozzle against the rim of the filler pipe. This will ensure the pump is grounded and will reduce the risk of ignition due to static electricity



- 10) Never overfill the fuel tank. Be sure to clean up any spillage and securely tighten the filler cap
- 11) Open all doors, windows, hatches and portholes once refueling is complete
- 12) If your pleasure craft is equipped with an enclosed engine compartment, you must operate the ventilation system (blower) for at least four minutes prior to engine start-up
- 13) Re-check for the smell of fuel vapours/odors (do not re-start your engine if excessive fuel vapours are detected)
- 14) Start the motor



Refueling a Portable Tank

When refueling a portable container:

- 1) Ensure your pleasure craft is securely moored to the dock
- 2) Shut down all motors
- 3) Extinguish any open flames, including cigarettes
- 4) Disconnect the fuel line and move the tank to the dock
- 5) Always use a tank that has been approved for use in Canada
- 6) Check the fuel system (including the tank, fuel line, and connectors) for any leaks
- 7) For mixed gasoline: Alternate the addition of gas and oil as the tank is filled. Ensure gas and oil are thoroughly mixed before reconnecting the fuel system to the motor
- 8) Once filled, place the tank back in the craft
- 9) Reconnect the fuel line and re-check for leaks
- 10) Start the motor



Fueling a PWC

Some additional considerations should be taken when fueling a PWC:

- 1) Shut down the engine
- 2) Ask all passengers to disembark the craft and remain on shore
- 3) Extinguish any open flames, including cigarettes
- 4) Visually check the gas separator for the presence of water. Remove any traces of water before refueling
- 5) Ensure the fuel selector switch is turned to the "OFF" position
- 6) For PWCs requiring mixed gasoline: Always pre-mix gas and oil in an approved portable container
- 7) For PWCs equipped with an oil injection system: Ensure the oil tank is full with the approved oil for your craft
- 8) Fill the tank
- 9) Tighten fuel filler cap, check for fuel vapours
- 10) Turn the fuel selector switch to the "ON" position and restart the engine



Pre-Departure Checklist

The use of a pre-departure checklist is an excellent way to avoid unsuitable operating conditions, reduce the risk of breakdown and ensure that you have the right equipment onboard in case of emergency. You should always use a pre-departure checklist to help avoid situations which could lead to potential emergencies.

A sample pre-departure checklist has been included on page 142 of this manual. You can also download a free pre-departure checklist at www.boatsmartcanada.ca.



Pre-Departure Checklist

Equipment

- I have properly maintained my pleasure craft and its components
- I have all required safety equipment on board and in good working condition
- I have enough approved flotation devices of the correct size for each person on board
- I have an emergency repair kit on board with spare parts suitable for my type and size of craft/engine
- I have a first aid kit on board including dry clothing, water, sun protection, and emergency rations
- I have all required distress equipment on board and know how to use it properly
- I have an effective, properly functioning means of communication (such as a cell phone or VHF radio)
- I have stowed equipment in appropriate, accessible locations on board my craft

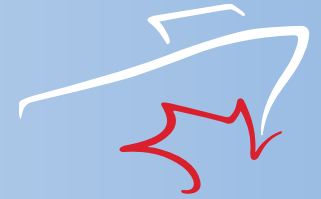
Preparation

- I have enough fuel for the trip - 1/3 out, 1/3 back, 1/3 in reserve
- I have thoroughly checked the condition of my craft, its engine and fittings
- I have completed a trip plan and filed it with a responsible individual
- I have reviewed emergency and safety procedures and practiced the proper techniques
- I have reviewed each passenger's responsibilities before departing
- I have explained the location and correct use of required safety equipment with each passenger

Waterways and Weather Conditions

- I have the marine charts and/or nautical publications for the area in which I'll be boating
- I have researched and know the location of any local hazards
- I know of any boating restrictions that may apply in the area in which I'll be boating
- I have checked the weather forecast
- I know of or have marked the location of safe harbours/marinas

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Module 3 | Summary |

Maintaining your equipment in proper working order will help you avoid emergency situations and reduce your operating costs. You should perform maintenance on your craft and equipment at the beginning of each season and at regular intervals throughout the season. The use of a maintenance checklist is recommended.

Understanding local water hazards and determining local weather conditions before you depart will help you avoid emergency situations and unsuitable operating conditions. Consult marine charts for the waterway in which you plan to operate, and/or talk to local boaters and marine operators to gain valuable insight.

The Canadian Coast Guard recommends the use of a Trip Plan before heading out. A Trip Plan is used to identify your vessel and proposed route, and can be a significant aid to search and rescue organizations in an emergency.

Module 3 Review | Before Heading Out

Answers on Page 129

- 1) **Bunk-style** trailers are suitable for towing **large** pleasure craft.
True or False?
- 2) You should always **load** safety equipment onboard **before** launching a boat from a trailer.
True or False?
- 3) A magnetic compass can be **affected** when in the **proximity** of **metallic** and **electrical devices** and may provide false information.
True or False?
- 4) **Marine charts** are primarily used by boaters for which **purpose**?
 - A - To aid in navigation
 - B - To determine the position of waterway attractions
 - C - To mark the fastest route
 - D - To locate a marina
- 5) When should you determine the **local weather forecast**?
 - A - Immediately after you head out
 - B - Before you head out
 - C - As long as its not storming, you don't need to worry
 - D - 7 days prior to your departure
- 6) The Meteorological Service of Canada classifies all wind speeds and warnings in Canada. What warning is issued when winds reach **20 to 33 knots**?
 - A - Small Craft Warning
 - B - Storm Warning
 - C - Weather Advisory
 - D - No warning is issued
- 7) The Canadian Coast Guard recommends the use of a **document** that gives information about your vessel, where you plan to go, and when you plan to return. What is it called?
 - A - Pre-Departure Checklist
 - B - Trip Plan
 - C - Nautical Publication
 - D - Pleasure Craft Operator Card
- 8) How long should you **operate** the **engine ventilation system** (blower) before starting the engine?
 - A - 2 minutes
 - B - At least 6 minutes
 - C - At least 4 minutes
 - D - It's not always necessary
- 9) What percentage of overall **weight** should be on the **tongue** of a trailer once a craft has been loaded?
 - A - 5-10%
 - B - 20%
 - C - 60%
 - D - 40%
- 10) Which act, code or regulation requires that you **maintain** your craft in seaworthy condition?
 - A - The Small Vessel Regulations
 - B - The Criminal Code of Canada
 - C - The Canada Shipping Act
 - D - The Boating Restriction Regulations

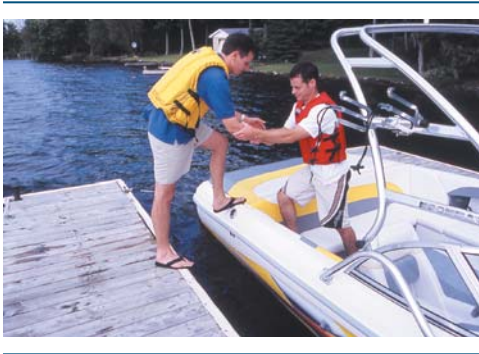
module 4

Operating a Boat: Safety Underway

In This Module You'll Learn:

- *The correct procedures for loading people and equipment*
- *Casting off and returning to the dock*
- *How to adjust for the effects of being on the water*
- *Choosing a safe speed and handling rough water conditions*
- *How to steer your pleasure craft or PWC*
- *Your responsibilities in sharing Canada's waterways with others*
- *Anchoring your pleasure craft*
- *Exiting and boarding your craft from deep water*
- *Towing a water-skier safely*

Loading People and Equipment |



Loading People and Equipment

Failing to properly load equipment and passengers can result in unsafe operation your craft and increase the risk of serious injury or death.

When loading a pleasure craft:

- 1) Consult the pleasure craft's capacity plate and ensure that:
 - Equipment and people do not exceed the "recommended gross load capacity" of the craft
 - The number of people onboard does not exceed "the equivalent number of adult persons" the craft is capable of safely carrying
- 2) Every person should be wearing a properly fitted approved PFD or Lifejacket
- 3) The operator should board first and then assist each passenger aboard
- 4) Position equipment and people so that weight is **equally distributed** throughout the craft



- 5) Each person should be properly seated and positioned before the next person comes aboard
- 6) Ensure all equipment is **securely fastened** and stored properly to prevent uncontrolled shifting once the craft is underway. You should stow gear in lockers that are **easily accessible** in case of emergency and as low as possible to help stabilize the craft



Instructing Your Passengers

Passengers falling while underway is the leading cause of injury on pleasure craft. In order to maintain a safe operating environment for yourself and your guests, you should instruct your passengers before heading out.

Familiarize your passengers with the craft and it's safety equipment:

- Passengers should be informed of the location PFDs/Lifejackets and their importance for safety
- Each passenger should wear a properly fitted, approved PFD or Lifejacket. Instruct passengers on the correct way to put on a PFD/Lifejacket while in the water or on the craft
- Instruct your passengers to keep their weight as low as possible at all times and hold onto solid objects when moving about the craft. Passengers should always remain as close to the centreline as possible when moving around the craft
- Show your passengers the location of your craft's Emergency Kit
- Emergency situations may require your passenger's co-operation and assistance. Advise passengers



that they may have to react in the event of an emergency

- Instruct passengers to keep hands, arms and legs inside the craft at all times, particularly when approaching or leaving the dock
- Remind passengers that many factors can affect their reflexes, judgment and sense of balance while underway. These include the motion of the craft on the water, sunlight, waves, reflections, wind, sound and/or alcohol. Passengers may not be familiar with the effects of these influences and should be advised to take them into consideration
- Advise passengers of their responsibilities during refueling. Passengers must disembark the craft and extinguish any cigarettes before refueling begins



Instructions for PWC Passengers

- Advise passengers as to the location of the PWC's safety equipment
- Passengers should read and understand the warning labels on the craft
- Instruct passengers that the PWC will become more unstable as each passenger boards the craft
- Passengers should keep their weight stable and evenly distributed
- Advise passengers to keep legs and arms within the craft at all times
- Remind passengers to keep away from the PWC's intake grate while the engine is running. Items such as long hair, loose clothing, or PFD straps can become entangled in the moving parts of the jet intake system resulting in severe injury or death
- Advise passengers that the jet propulsion system is powerful and water and/or debris exiting the jet thrust nozzle can cause severe injury. Operators and passengers should avoid being close to the jet thrust nozzle at the rear of the machine



- Remind passengers to never place their feet or legs in the water to aid turning
- Advise passengers that they should hold onto the seat strap while underway



Casting Off

Use the following precautions when casting off:

- 1) All passengers should be seated properly with their hands and feet inside the boat
- 2) For crafts equipped with enclosed engine compartments, operate the ventilation system (blower) for at least 4 minutes before starting the engine
- 3) Start the engine:
 - PWC operators should ensure the watercraft's engine shut-off cord (safety lanyard) is securely attached to their wrist or Lifejacket at all times. The engine shut-off chord must be kept free from the handlebars and be free to release if the operator falls off the PWC
- 4) Untie all mooring lines and push the craft away from the dock
- 5) Check your surroundings and take into account any obstacles or other craft



- 6) As you leave the dock, the stern of your vessel will likely swing back towards the dock. Ensure that you push your craft well clear of the dock at both the bow and stern
- 7) Proceed slowly from the dock until it is safe to increase your speed
- 8) Fast acceleration may cause passengers to lose their balance. Ensure all passengers and crew are informed before any rapid acceleration occurs



Returning to the Dock

When returning to the dock:

- 1) Ensure all passengers are seated securely with their feet and hands inside the craft
- 2) Approach the dock at a manageable speed
- 3) Turn your craft slowly as you approach the dock in order to come to a parallel resting position. If necessary, use reverse to control the position of your craft

Remember

Your boat does not have brakes and requires a minimum distance to stop. Stopping distance will vary depending on initial speed, load, wind and water conditions.

PWC operators should remember that as the throttle lever is released to idle position, less directional control is available. You must **apply throttle to steer**. PWC's not equipped with neutral and reverse must be shut down when close to the dock, or forward thrust will continue to propel the PWC into the dock.



Disembarking Your Craft

When disembarking:

- 1) Secure the craft
- 2) Shut down the motor:
 - PWC operators should remove the engine shut-off chord from the PWC to avoid accidental starting
- 4) Securely fasten the craft to the dock
- 3) Unload passengers one at a time:
 - PWC operators should be aware that as each passenger exits the watercraft it may become unstable. Passengers should attempt to keep their weight distributed as they disembark from the PWC
- 4) Never jump from the boat to the dock



Safety Underway

Enjoying Canada's waterways is one of our greatest summer pastimes. While we all want to have fun and enjoy a day on the water, sharing the waterways with others means operating in a safe and courteous manner.

Safety underway means:

- Understanding and taking into the account the effects of being on the water
- Choosing a safe and appropriate speed
- Knowing the proper techniques for reducing risk while operating at high speeds
- Knowing how to operate safely amongst other boat traffic during the day or night



Effects of Being on the Water

You should remember that certain effects of being on the water can **impair your judgement** and ability to operate your craft safely. These effects include:

- The motion of your pleasure craft
- Sunlight
- Wind
- Waves
- Sound
- Alcohol and/or controlled substances

These effects (individually or in combination with each other) may impair your balance, sense of coordination, reflexes, response time, eyesight, hearing and judgment. If you find that any of your senses are impaired you should immediately seek safe harbour and shade yourself from direct sunlight.



Effects of Being on the Water

Be aware of the effects of being on the water - both on yourself and your passengers. Take steps to reduce these effects by ensuring that you wear appropriate protection from the elements including sunglasses, sunscreen and a visor or hat.

Be well rested when planning to operate your craft for extended periods and ensure that you consume ample liquids (such as water or juice) to keep hydrated. You should never consume alcohol or controlled substances when operating a pleasure craft.



Choosing a Safe Speed

Choosing an appropriate speed is vital to maintaining on-water safety and avoiding collisions. You should always gauge your speed relative to the following:

- The location of hazards
- Your distance from shore
- Your distance from other boats including concentrations of fishing vessels
- Activities of others on the water including other vessel traffic
- Water currents and wind conditions
- Other weather, water and visibility conditions

Remember

Always operate at a speed that **allows you to take effective action** to avoid collisions.



High Speed Operation

Pleasure crafts operating at high speeds require a greater stopping distance. Operators driving their boats at high speeds should ensure they are able to **react effectively** in emergency situations including sudden changes in water, weather and visibility conditions.

Be aware that high-speed operation reduces the amount of time you have to react in an emergency. You should always use caution and be more attentive when operating at high speeds.



Trim

Your boat's trim is a description of the relative angle of the boat in the water. Too much weight towards the bow of the boat will cause the boat to plow down into the water. Too much weight towards the stern of the boat will cause the boat to bounce on the water. Either condition can result in poor and uncontrollable handling.

When properly "trimmed", the gunwales of the craft should be parallel to the water. Trim can be controlled by altering the position of equipment and people in the craft. For craft equipped with power trim, the operator can adjust the trim of the boat by changing the angle of the motor/outdrive.



Controlling A Pleasure Craft

Steering

You should look in all directions (including behind to the stern) before turning your craft. Take note of the position of other craft and their relative speed. Once a safe direction has been established, turn your boat in a predictable manner. You should avoid rapid unexpected manoeuvres as other boaters will not be able to predict your movements.

Traditional craft steer by water passing over the rudder or outdrive and being forced astern by the propeller. If power to the propeller is cut, the operator can still steer the craft as long as the boat is still moving (coasting) through the water.

Stopping

To stop your craft, pull back on the throttle using a smooth even motion. Your craft will slow to idle speed. To stop your craft completely, move the throttle lever to the neutral position.



Steering a Personal Watercraft

Personal watercraft steer as high-pressure water passes through the craft's jet-propulsion system. Water is forced through the steering nozzle at the stern of the PWC. The steering nozzle is controlled by the handlebars which the operator can turn left or right.

Remember

As the throttle lever is released to idle position, less water is forced through the system, and therefore less directional control is available. If the engine is shut off, all directional control is lost. **You need throttle to steer.**



Stopping a Personal Watercraft

You can stop a PWC by releasing the throttle lever, pressing the stop button, or disconnecting the safety lanyard.

PWCs coast farther and require more distance to stop than traditional pleasure craft. PWC operators should remember that a **minimum of 75 m** is required to stop from full throttle - Exact stopping distance depends on the type and size of PWC being operated and the prevailing water and wind conditions.

Never use the PWC's reverse (if so equipped) to stop. You or your passenger(s) could be unexpectedly ejected towards the handlebars or thrown from the craft.

Remember

Become familiar with the stopping operations of your PWC by practicing in a safe, controlled area. Always leave ample distance between yourself and other craft.



Handling Rough Water Conditions

Operators should adjust their speed as suitable to water conditions. When operating your boat in rough water, you should slow down and use caution. Adjust your speed so that the bow of your craft does not become buried in a wave. You should never attempt to jump waves.

If you find yourself in increasingly high seas, you should make way to a sheltered mooring such as a protected bay, cove or breakwater. If wave and water conditions make it unsuitable to operate safely, immediately set anchor and signal your need for assistance.



Crossing a Wake

When attempting to cross a wake, you should reduce your speed and alter your course to cross the wake at a 45-degree angle. Be aware of traffic that may be in your path as you cross to the other side of the wake. Once you have crossed the wake, resume your speed and course.

PWC operators should cross the wake at a 90-degree angle. Doing so will help maintain lateral stability. You should never attempt to jump a wake.

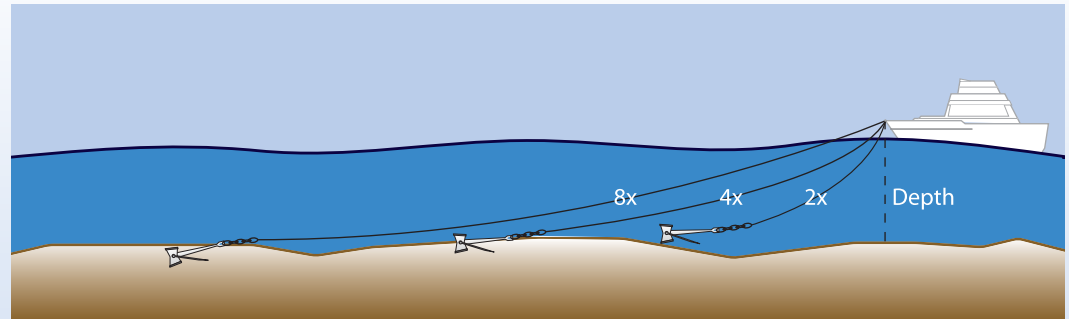


Operating in Bad Weather

When operating in bad weather slow down and operate according to prevailing environmental conditions. Operate with caution during high wave conditions when other craft may not be easily visible. Choose a slow speed and use your craft's navigation lights during periods of restricted visibility such as fog and heavy rain.

Operating at a safe speed appropriate for weather and wave conditions will reduce the risk of serious injury or death to you and your passengers.

Anchoring Your Craft



You can make use of an anchor:

- In the event of a breakdown
- During severe weather conditions
- An anchor is also useful in non-emergency situations (such as when swimming from the stern or securing for an overnight stay)

Setting the Anchor

To set an anchor:

- 1) Ensure the inboard end of the anchor line is securely attached to the pleasure craft.
- 2) Ensure the outboard end of the anchor line is securely fastened to the anchor.
- 3) Slowly lower the anchor over the bow or side of the craft until it reaches bottom. Note the distance to the bottom and/or note the length of rope used for the anchor to reach bottom. Never throw the anchor over the side the boat.
- 4) Let the boat drift rearward or operate the engines astern:
 - Let out an additional eight to ten times more anchor line than the depth of the water and securely fasten the desired length to the boat.

- At only 2x and 4x depth, the anchor can dig in but there is too much upward pull on the anchor line (rode). At 8x to 10x depth, the rode lies flat on the bottom and pulls the anchor in deeper

- 5) Once the anchor is set, chose two fixed landmarks on the horizon and occasionally check your relative position to ensure that you craft is not drifting. If anchoring overnight display your craft's all-round white light.
- 6) To retrieve the anchor, slowly pull on the anchor line, moving the boat forward until the anchor frees itself from the bottom. Bring the anchor onto the craft and fasten securely.

Never secure the anchor to the stern of the craft. Smaller boats can be easily swamped by waves crashing over the transom.

If your are preparing to set anchor in an anchorage among other boats, remember that the first craft into anchorage has the "right of swing". Always allow for another craft's right of swing.

Sharing the Waterways |



Sharing the Waterways

Over 8 million boaters enjoy Canada's waterways each year. All boaters should be knowledgeable of and abide by the *Collision Regulations* and use common sense and courtesy while underway.

You should never create a hazard or stress to yourself, to your fellow operators, or to the local habitat:

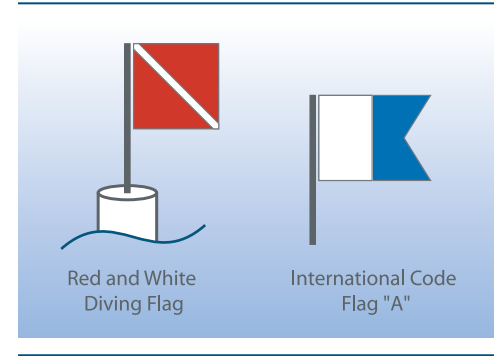
- Never operate close to swimmers and the personal property of others
- Ensure that your wake and wash will not cause personal injury, erosion of the shoreline, or damage to personal property
- Use common sense and courtesy when operating close to non-powered craft



Operating Near Swimmers

Operating a power boat near swimmers is extremely dangerous and **against the law**. Always keep away from designated swimming areas when operating your craft.

When operating near shore, keep a look out for swimmers, including those persons engaged in underwater activities such as snorkeling or diving. Remember that the sun's glare can make it difficult to spot swimmers in the water.



Staying Clear of Divers

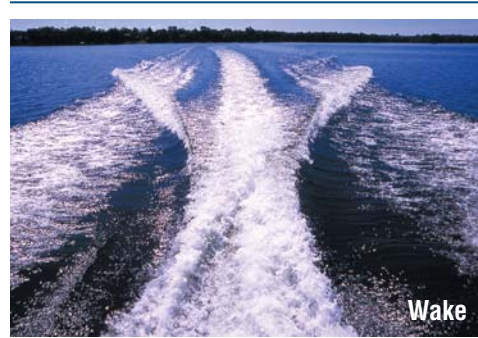
Vessels engaged in diving activities are required to display flags indicating their activities. The blue and white International Code Flag "A" indicates "I have a diver down: keep well clear at slow speed." The *Collision Regulations* Rules 18 and 27 require that all operators take early and substantial action to steer well clear of any vessel that displays a Code Flag "A".

A "red and white" diving buoy marks an area where diving is in progress. Always be sure to keep a look-out and steer clear of diving buoys.



Operating close to Non-Powerboats

Non-powered craft such as canoes, sailboats, rowboats and sailboards have the right of way – It's the law. Reduce your speed when operating near unpowered craft and ensure your wake does not create a hazard or irritation to them.



Wake and Wash

Operators are responsible for the wake and wash of their craft:

- **Wake** is caused by the boat moving through the water and displacing it
- **Wash** is the disrupted water following from the stern of the boat and is caused by the motion of the propeller

Your craft's wake and wash can cause damage to the shoreline and can be a danger to smaller craft.



Reducing the Effects of Wake and Wash

When operating your craft be aware of the effects of your wake and wash on the following:

- Swimmers and bathing areas
- Docks
- Wildlife
- Shoreline erosion
- Smaller craft such as fishing boats and canoes
- Unpowered craft
- Water-skiers
- Divers
- Areas of anchorage
- Other anchored or grounded vessels

If operating near such areas you should adjust the speed of your craft to reduce the effects of wake and wash. Doing so will ensure that you avoid the risk of personal injury, shoreline erosion and damage to personal property.

Exiting & Boarding from Deep Water |



Environmental Responsibility

It is illegal to pollute Canadian waterways. Always use caution when refueling and be sure not to spill excess fuel into the water.

Do not dump oil, litter or waste overboard. Waste from marine toilets must be held in a holding tank and pumped out at an approved marine facility.

Bilge water containing oil or other chemicals must not be dumped overboard. You should check your bilge on a regular basis to ensure it's free of oil, grease and chemicals. If chemical pollutants are found in the bilge use an appropriate absorbent product to soak up chemical waste.



Noise Pollution

Pleasure craft are not permitted within 8 km of any Canadian shore unless their craft is fitted with a noise-muffling device. A “wet exhaust”, where noise is muffled by cooling water discharged through the exhaust pipe, is not considered a noise muffling device. Operators should check with their local Canadian Coast Guard for any exemptions to this rule.

Operators should remember that sound travels further on water than on land. Operating continuously in one area may disturb both those on shore and on the water. PWC riders should be aware that the unique characteristics of their craft may result in increased noise and disturbance to those on shore – Ride appropriately when close to others.



Exiting Into Deep Water

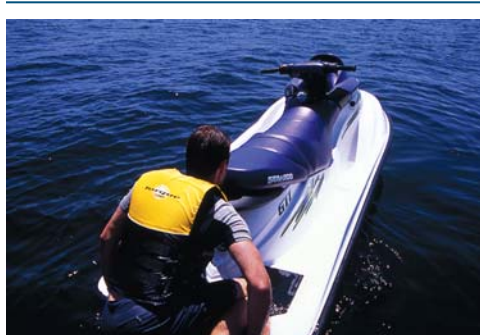
You or your passenger(s) should never exit the craft into the water while underway. To enter the water from your craft, first shut off the engine. Take note of all possible hazards such as rocks or shallow underwater features. If you are unsure of the area in which you are operating, take caution and enter the water slowly with feet first. Do not dive or jump headfirst unless you are certain there are no hazards or shallow water.



Boarding a Boat from Deep Water

Follow these common sense guidelines when boarding your vessel from the water:

- 1) Ensure the engine is shut off
- 2) If the craft is equipped with a ladder swim to it and pull yourself out of the water onto the boat
- 3) If the craft is not equipped with a ladder swim or move to the stern of your boat
- 4) Position yourself beside the motor and locate the flat cavitation plate just above the propeller
- 5) Place one hand on the shroud of the motor and one hand on the gunwale of the boat. Place one foot on the cavitation plate. Use the plate as a step and your arms to help pull yourself up
- 6) When boarding in this manner be surefooted and ask for assistance if necessary. The edges of the cavitation plate are sharp and can cause injury



Boarding a PWC from Deep Water

If the PWC has been flipped and is upside down in the water, right it according to the manufacturer's instructions. (A PWC will not self-right if capsized). PWCs should be righted in one direction only – check with your owner's manual and/or warning sticker on the stern of the PWC to determine the proper direction.

To board a PWC first swim to the stern of the craft. Use the grab handle on the transom or seat to help pull yourself onto the craft. Slowly pull yourself up, placing your knees on the rear boarding platform. Once aboard, move forward onto the seat and attach the safety lanyard.

Always remember the following when boarding a PWC:

- Never attempt to board the PWC from the side. You may cause the craft to flip over on top of you
- Never attempt to board the PWC when the engine is running. The powerful suction from the jet thrust system may ingest loose items such as long hair, clothing, or the straps of your PFD/Lifejacket resulting in serious injury or death



- Do not attempt to grab, kneel or stand on the reverse gate (if so equipped) when re-boarding the craft. Damage to the PWC and personal injury may result
- If waiting for a passenger to board the PWC, never start the engine prematurely. The force of the water exiting the jet thrust nozzle may cause serious injury or death to the passenger
- Remember that boarding a PWC in deep water can be strenuous. Always practice in chest-deep water and ensure passengers understand proper re-boarding techniques

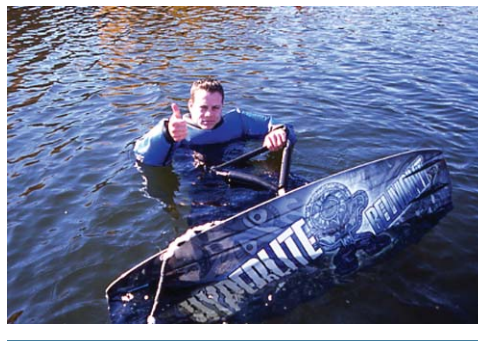
Towing Actions |



Towing

Towing a water-skier, wakeboarder, kneeboarder, or other towable device requires the use of a spotter. A spotter is a person who observes the person being towed at all times. The spotter notifies the driver if there is a need for a change in speed and/or direction as indicated by the skier's hand signals. The spotter can also notify the driver in case of emergency.

The driver should never watch the skier. The driver should always concentrate on driving the boat in a safe manner, keeping well clear of other boats, skiers, swimmers and hazards.



Rules and Regulations

Obey the following when towing a water-skier - It's the law:

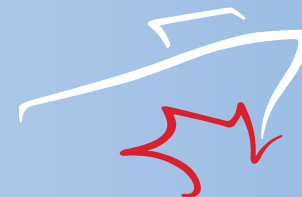
- A driver and spotter must be in the boat at all times
- The craft used for towing must be equipped to carry a minimum of three people. This includes PWCs. (The third seat is used to accommodate the skier if he or she becomes injured)
- The person being towed must wear an approved flotation device. A ski belt is not considered to be an approved flotation device
- The towing vessel cannot be operated by remote control
- Only tow skiers one hour after sunrise until one hour before sunset. It is a criminal offence, as governed by the *Criminal Code of Canada*, to tow a person after dark



Hand Signals

Both the spotter and the person being towed must understand and be able to communicate using the following hand signals:

- **“Go Home”** - Skier pats his/her head with one hand
- **“Speed Up”** - Skier holds one thumb up
- **“Slow Down”** - Skier holds one thumb down
- **“Turn Around”** - Skier rotates an upwards pointed finger in a circular motion
- **“I'm OK”** - After the skier falls, skier extends both arms overhead and clasps his/her hands. This alerts the spotter that the skier is “OK” and also makes the skier visible to other boaters
- **“Cut the Engine”** - With hand outstretched and palm facing down, skier makes a slicing motion across his/her neck



Module 4 | Summary |

Operating in a safe and responsible manner is every boater's obligation. Be sure that you understand how to properly control your type of craft and are aware of its unique handling characteristics.

After studying this module you should understand the proper procedures for casting off and returning to the dock. You should also be aware of the effects of being on the water and how to adjust for them. Remember to always choose a safe speed when operating your craft, and minimize the effects of your wake and wash when operating close to shore and unpowered craft.

Knowing how to anchor your craft correctly is useful when stopping for an overnight stay or when swimming from the stern of your craft. It's also a valuable technique that can be used in an emergency situation, such as a storm or mechanical failure.

Be sure that you understand the rules and regulations for towing water-skiers. Always use a spotter and operate with caution when towing a skier.

- 1) Passengers should keep their arms and legs **inside the craft** while underway.
True or False?
- 2) You should never operate close to a designated **swimming area**
True or False?
- 3) **Remote controlled** towing vessels can be used to tow water skiers
True or False?
- 4) When **loading passengers** onto your craft, where should you best position them?
 - A - Near the bow of the craft
 - B - So that weight is equally distributed throughout the craft
 - C - Near the stern of the craft
 - D - Doesn't matter
- 5) Certain **effects** of being on the water can **impair your judgment** and ability to safely operate your craft. What are they?
 - A - The sun, wind, waves and sound
 - B - The speed at which you are operating
 - C - The number of passengers onboard your craft
 - D - The number of hours you have operated the craft
- 6) Some boats and PWCs can travel at very high speeds. What should you consider when **operating at high speeds**?
 - A - You have the right-of-way if traveling faster than other boats
 - B - You do not have as much time to react or stop in an emergency
 - C - You can steer quickly in an emergency
 - D - You can stop quickly in an emergency
- 7) You should always ensure which of the following when **anchoring** your craft?
 - A - Ensure the inboard end of the anchor line is securely attached to the anchor
 - B - Ensure the outboard end of the anchor line is securely attached to the craft
 - C - Ensure the inboard end of the anchor line is securely attached to the craft
 - D - Ensure the anchor line is 10 times the length of your craft
- 8) What does the blue and white **International Code Flag "A"** indicate?
 - A - "I have broken down: please get help."
 - B - "I am engaged in fishing activities: keep well clear at slow speed."
 - C - "I have a diver down: keep well clear at slow speed."
 - D - Is used to identify search and rescue vessels
- 9) A boat's "**wake**" is primarily caused by which of the following?
 - A - Displacement
 - B - The boat's propeller
 - C - Wind
 - D - When operating at full throttle
- 10) When is it **legal** to tow a **water skier**?
 - A - One hour before sunrise
 - B - Only when there is no other boat traffic
 - C - When you are the only person in the boat
 - D - From one hour after sunrise to one hour before sunset

module 5

Navigation and Right-of-Way Rules

In This Module You'll Learn:

- *How the Collision Regulations regulate navigation on Canadian waterways*
- *Right-of-Way rules*
- *Pleasure craft navigation*
- *Sailboat navigation*
- *Aids to Navigation including markers and buoys*
- *Requirements for navigation lights*
- *Navigating at night and during periods of restricted visibility*
- *How to navigate unique waterways such as rivers, canals and locks*



The Collision Regulations

The *Collision Regulations* govern navigation rules on Canadian waterways and help boaters determine which craft has the right-of-way. These rules apply to all vessels and to all navigable waters in Canada.

Avoiding Collisions

You must use all available means, appropriate to prevailing circumstances and conditions, to make a full appraisal of navigation situations and determine if the risk of collision exists.



Right-of-Way Actions

Stand-On Craft

Craft with the right-of-way are called stand-on craft. These craft are able to maintain their speed and course when approaching another vessel.

Give-Way Craft

Craft that do not have the right-of-way are called give-way craft. These craft must take early and substantial action to steer clear of the stand-on craft, altering their speed and direction to avoid a collision.



Determining Right-of-Way

You must recognize several factors when determining right-of-way, including:

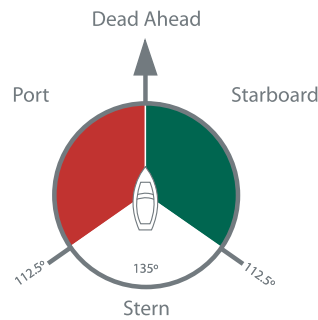
- The **type of craft** you're **operating**
- The **type(s) of craft(s)** you're **approaching**
- The **position and direction** from which other craft are approaching
- The **type of waterway** in which you're operating



Type of Craft

The types of craft approaching each other determine which operator has the right of way:

- **Emergency craft** always have the right-of-way. All pleasure craft operators should steer clear and yield to emergency craft
- **Non-powered craft** including sailboats, canoes, paddleboats, sailboards and racing shells have the right-of-way over power-driven crafts
- **Large vessels** and those vessels engaged in fishing activities have the right-of-way. All power-driven craft under 20 m must steer clear of these less manoeuvrable vessels



Position and Direction

Power-driven vessels approaching each other establish right-of-way by determining each boat's position relative to the other. To properly understand how the *Collision Regulations* regulate right-of-way, the operator must recognize the "sectors" of navigation relative to their craft:

- **Port sector**
- **Starboard sector**
- **Stern sector**

Operators should reference these sectors to determine their position relative to other boat traffic. Remember the following definitions to assist in navigation:

- **Port:** To the left side of the pleasure craft when looking forward
- **Starboard:** To the right side of the pleasure craft when looking forward

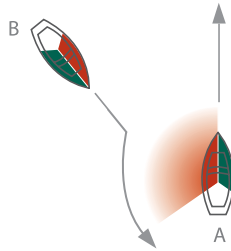
Head On Approach



Head On Approach

When power-driven vessels approach each other head on, **neither craft has the right-of-way**. Both operators (A + B) must take early and substantial action to steer clear each other. Each operator should give one short blast with a sound-signalling device and steer to the starboard (right) as soon as possible in order to avoid a collision.

Port Approach



Port (Left) Approach

If a power-driven craft (B) is approaching from your port (left) sector you are the **stand-on craft** (A) and have the right-of-way. You should **maintain** your speed and course and be ready to take evasive action. The approaching craft must take early and substantial action to avoid your vessel by reducing its speed and changing direction.

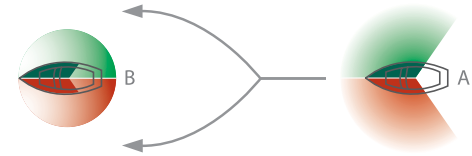
Starboard Approach



Starboard (Right) Approach

If a power-driven craft (B) is approaching from your starboard (right) sector you are the **give-way craft** (A) and do not have the right-of-way. You must take early and substantial action to **keep well clear** of the other vessel by altering your speed and course. You should avoid passing in front of the oncoming vessel.

Overtaking



Overtaking

If you are overtaking another power-driven craft (B) from behind (stern) you are the **give-way craft** (A) and do not have the right-of-way. You must take early and substantial action to **keep well clear** of the other vessel by altering your speed and course. You should pass at a safe distance to the port (left) or starboard (right) side of the other vessel.



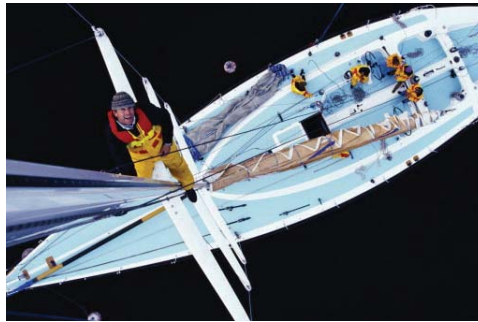
Non-Powerboats and Fishing Vessels

Approaching Non-Powerboats

When approaching a non-powered craft, such as a sailboat or canoe, you are the **give-way craft** and do not have the right-of-way. You must take early and substantial action to **keep well clear** of the non-powered craft. You should alter your speed and course and approach the other craft with caution.

Approaching Fishing Vessels

Power-driven pleasure craft must take early and substantial action to keep well clear of vessels engaged in fishing activities.



Sailboats

The *Collision Regulations* Rule 3 define a “sailing vessel” as a vessel that is under sail. If a sailboat is using a motor to propel itself, it is considered a power-driven vessel and must adhere to the rules for power-driven vessels as prescribed by the *Collision Regulations*.

Understanding Sailboat Navigation

Operators of pleasure sailing vessels (sailboats) are required to understand and obey right-of-way rules specific to their type of craft. However, operators of power-driven craft are also required to understand these rules. You must be able to predict and assess the actions of sailboats approaching each other in order to properly navigate in their vicinity.



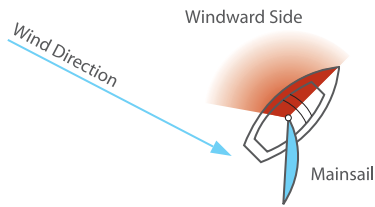
Sailboat Navigation

Sailboat right-of-way rules differ somewhat from those definitions that apply to power-driven craft.

Right-of-way rules for vessels propelled by the wind are based on:

- The **direction** of the **wind**
- The **position** of the **mainsail**
- The **position of the sailboat** in relation to other **traffic**

Windward Side



What is the Windward Side?

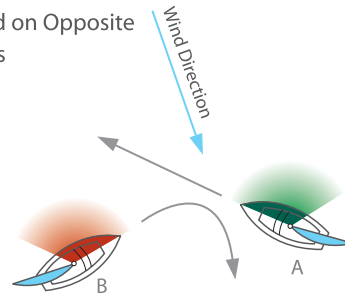
A sailboat moves when wind blows into the mainsail. The windward side of a sailing vessel is defined as the side of the vessel opposite to the side on which the mainsail is being carried.

For Example

If the sail is to the starboard (right) side then the port (left) side of the vessel is considered to be the windward side. If the sail is to the port (left) side, then the starboard (right) side of the vessel is considered to be the windward side.

Both sailboat operators and operators of power-driven craft must be able to recognize the windward side of a sailing vessel in order to properly determine right-of-way.

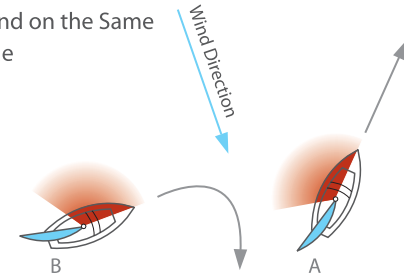
Wind on Opposite Sides



Wind on Opposite Sides

A pleasure sailing vessel with the wind on its port side is the **give-way craft** (B) and must take early and substantial action to **steer clear** of any sailing vessel with the wind on its starboard side (A).

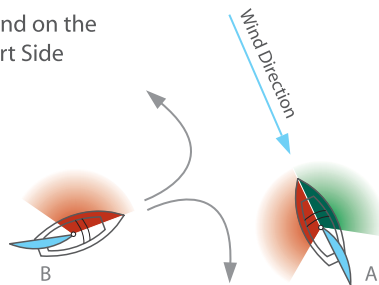
Wind on the Same Side



Wind on the Same Side

If two pleasure sailing vessels have the wind on the same side, the sailing vessel to the windward side is the **give-way craft** (B) and must take early and substantial action to **keep well clear** of the leeward vessel (A).

Wind on the Port Side



Wind on the Port Side

If a sailboat operating with wind on its **port side** (B) cannot determine with certainty where the wind is approaching another sailing vessel, it must take early and substantial action to change direction and **keep well clear** of the other vessel (A).



Less Manoeuvrable Vessels

The *Collision Regulations* require that less manoeuvrable vessels must be afforded the right-of-way. Large vessels, those towing a barge, and those engaged in fishing activities with nets and trawls, always have the right-of-way and are considered to be the **stand-on craft**. You must take early and substantial action to stay well clear of these types of vessels.

Remember

Rules 9 and 10 of the *Collision Regulations* maintain that pleasure-sailing craft and those power-driven vessels less than 20 m in length shall not hinder the passage of power-driven vessels which can safely navigate only in a narrow channel or those craft that are navigating in a traffic lane.



Special Circumstances

- “Sport” fishing boats and waterski boats are considered manoeuvrable craft and are not exempt from the *Collision Regulations*
- If two vessels approach each other in a narrow channel where tide, river flow, or underwater features create dangerous currents, then the vessel going downstream is automatically afforded the right-of-way

Navigating at Night or During Periods of Restricted Visibility



Navigating at Sea

Pleasure craft operators are required to apply the International Regulations for preventing collisions at sea and the Canadian modifications upon the high seas and in all waters connected therewith navigable by vessels described in the *Collision Regulations* Rules 1 and 2 and the *Canada Shipping Act* Section 562.



Safe Operation in Restricted Visibility

Always be sure to take additional care when operating at night or during periods of restricted visibility such as fog or heavy rain.

Remember that the operator of a pleasure craft not in sight of other vessels shall proceed at a safe speed that is appropriate for the prevailing circumstances and conditions of restricted visibility as described in the *Collision Regulations* Rule 19.



Navigating at Night

Right-of-way and navigation rules are the same whether operating during the day or at night. However, while operating at night or during periods of restricted visibility, you must determine the speed, position, and size of other boats **according to the navigation lights they exhibit.**



Navigation Lights

Your vessel must be equipped with navigation lights that meet the standards prescribed in the *Collision Regulations*. Navigation lights must be used on any pleasure craft that operates from sunset to sunrise or during periods of restricted visibility.

The navigation lights you are required to display depend on the following:

- The **size** of your craft
- Whether it is **sail-driven or power-driven**
- Whether it is **underway or at anchor**



Types of Navigation Lights

Navigation lights consist of the following:

1) Starboard Sidelight

The *Collision Regulations* Rule 21 defines a starboard sidelight as a green light “showing an unbroken light over an arc of the horizon of 112.5 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam” on the starboard side.

2) Port Sidelight

The *Collision Regulations* Rule 21 defines a port sidelight as a red light “showing an unbroken light over an arc of the horizon of 112.5 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam” on the port side.

3) Masthead Light

The *Collision Regulations* Rule 21 defines a masthead light as “a white light placed over the fore and aft centerline of the vessel showing an unbroken light over an arc of the horizon 225

degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on either side of the vessel.”

4) Sternlight

The *Collision Regulations* Rule 21 defines a sternlight as “a white light placed as nearly as practicable at the stern showing an unbroken light over an arc of the horizon of 135 degrees and so fixed as to show the light 67.5 degrees from right aft on each side of the vessel.”

5) All-Round

The *Collision Regulations* Rule 21 defines an all-round light as “a light showing an unbroken light over an arc of the horizon of 360 degrees.” An all-round light is used to signal that a pleasure craft is at anchor.

Required Navigation Lights

	Power-Driven Pleasure Craft	Sailing Craft	Non-Powered Pleasure Craft
General	Power-driven pleasure craft operating from sunset to sunrise or during periods of restricted visibility must exhibit a forward masthead light, sidelights and a sternlight . Other lights that may be mistaken as navigation lights are not permitted.	All operators of pleasure sailing craft must exhibit sidelights and a sternlight while underway from sunset to sunrise and during periods of restricted visibility, as prescribed in the <i>Collision Regulations</i> . Other lights that may be mistaken as navigation lights are not permitted.	If you are operating a pleasure craft under power of oars, you must display sidelights and a sternlight from sunset to sunrise. If it is impracticable to exhibit side and stern navigation lights, you must have ready-for-use an electric torch or lighted lantern that displays a white light . The light must be exhibited in sufficient time to prevent a collision.
Less than 20 m in Length	Powered-craft less than 20 m in length may exhibit sidelights combined in one lantern affixed on the fore and aft centre-line of the vessel.	Sailboats less than 20 m in length may display combined sidelights and sternlight in one lantern carried at or near the top of the mast (in lieu of standard side and stern lights).	
Less than 12 m in Length	Powered-craft less than 20 m in length may exhibit an all-round white light and sidelights in lieu of a masthead light and sternlights . The all-round light must be higher than the sidelights.		
Less than 7 m in length	Powered-craft less than 7 m in length must display sidelights and a sternlight if practicable . If it is impracticable to exhibit side and stern lights, you must have ready-for-use an electric torch or lighted lantern that displays a white light. The light must be displayed in sufficient time to prevent a collision.	Sailing craft less than 7 m in length and not equipped with navigation lights must have an electric torch or lighted lantern onboard. It must be displayed in sufficient time to prevent a collision.	
When at Anchor	If anchored at any time from sunset to sunrise, crafts of any type less than 50 m in length must display an all-round white light towards the bow of the boat and the light should be visible from all directions.	If anchored at any time from sunset to sunrise, crafts of any type less than 50 m in length must display an all-round white light towards the bow of the boat and the light should be visible from all directions.	If anchored at any time from sunset to sunrise, crafts of any type less than 50 m in length must display an all-round white light towards the bow of the boat and the light should be visible from all directions.



Special Circumstances

Search and Rescue (SAR) Vessels

When responding to an emergency, search and rescue vessels exhibit an all-round blue light(s). You should always steer well clear of any vessel exhibiting a blue light.

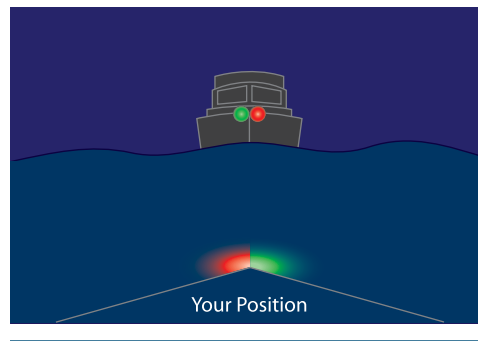
When Towing

If towing another vessel from your stern you must show:

- Sidelights and a sternlight
- A yellow towing sternlight
- Two masthead lights in a vertical line

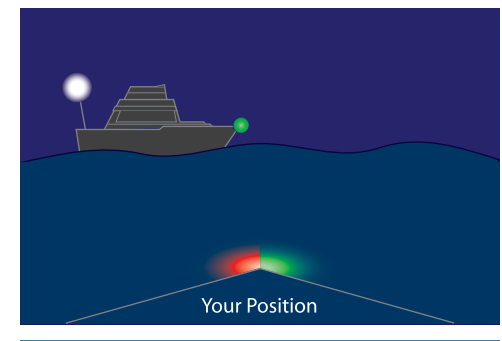
If being towed, you must exhibit:

- Sidelights and a sternlight
- A diamond shape
- If you do not have sidelights you must exhibit two all-round lights, one each at fore and aft



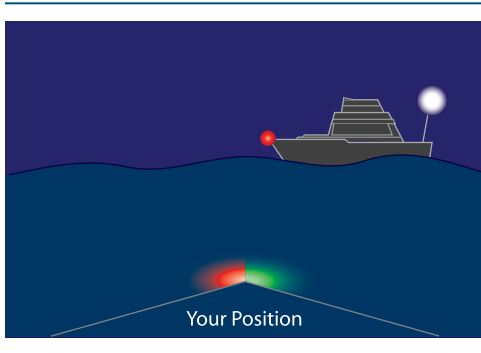
Head-On Approach

If you meet a vessel and see a green and red light, you are approaching another vessel head-on. In this situation **neither vessel has the right-of-way**. Both operators must take early and substantial action to steer well clear of the other vessel. Both operators should reduce their speed and steer to starboard.



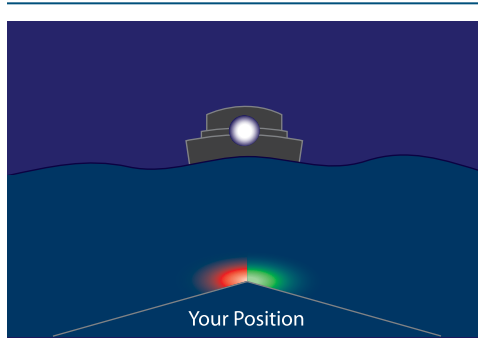
Port (Left) Approach

If a green and white light is visible, then another craft is approaching you from the port (left) side. In this situation, you are the **stand-on craft** and should **maintain** your speed and course. The other craft should take early and substantial action to steer well clear of your craft.



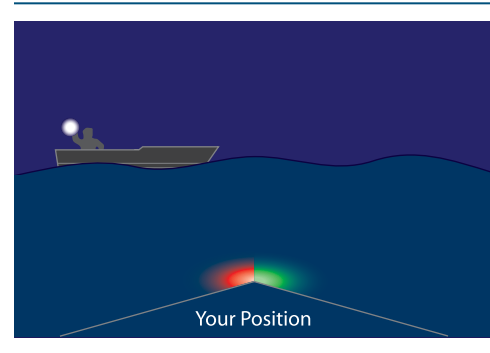
Starboard (Right) Approach

If a red and white light is visible, then another craft is approaching you from the starboard (right) side. In this situation you are the **give-way craft** and must yield right-of-way. You should take early and substantial action to **steer well clear** of the other craft. Reduce your speed, change direction and pass at safe distance behind the other boat.



Overtaking

If only a white light is visible, you are approaching another craft from behind (or a craft that is at anchor). You are the **give-way-craft** and must take early and substantial action to **steer well clear** by altering your course and passing at a safe distance on the starboard (right) or port (left) side.



Non Power-Driven Craft

If you are approaching a non-powered craft, you are the **give-way craft** and must yield the right of way. You should take early and substantial action to **stay well clear** and pass at a safe speed and distance.



Aids to Navigation

Aids to navigation are a system of **buoys** and **markers** that assist the operator in determining position and identifying potential dangers and obstructions. External to pleasure craft, aids to navigation can be used to plot position and course on nautical charts and other nautical publications and assist the pleasure craft operator in choosing the **most preferred and safest route**.

It is prohibited under the *Criminal Code of Canada* to interfere with any aid to navigation. Operators should never use a buoy for mooring and no person may willfully alter, remove or conceal a signal, buoy or other type of navigation marker.

Two main systems of navigation are used on Canadian Waterways: The **Lateral System** and The **Cardinal System**. All aids to navigation have identifying marks such as colours, lights and numbers.

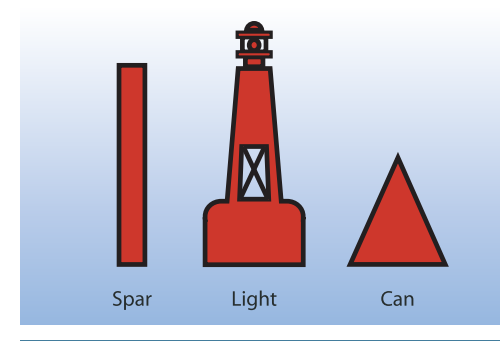


What is a Buoy?

A buoy is a floating marker or signal which is affixed to the bottom of the waterway or mounted on a feature (such as an island) of the waterway.

Buoys serve four main functions:

- Provide Warnings
- Provide Information
- Mark underwater hazards
- Provide a system for navigation



Floating Buoys

There are three styles of floating buoys used on Canadian waterways:

- 1) **Light Buoys**
Light buoys are typically the largest of all floating buoys and have a light fixture affixed to the top of the buoy.
- 2) **Spar Buoys**
Spar buoys are also called "pillars" and are common on smaller waterways. They have a cylinder shape and are typically smaller than light buoys.
- 3) **Cans**
Cans are wider than spar buoys and are typically used as lateral system and bifurcation buoys.

All floating buoys are affixed to the bottom of the waterway using a structure of underwater cables and anchors.



Systems of Buoys in Canada

There are several systems of buoys and markers used on Canadian waterways to aid in navigation:

- 1) The **Lateral System** is a system of red and green buoys used to mark preferred safe routes
- 2) The **Cardinal System** consists of yellow and black buoys that indicate safe routes by the cardinal compass points
- 3) A **Range** is a series of two buoys that, when aligned along a sight path, indicate the safest route for navigation
- 4) **Special Purpose Buoys** may be yellow or white in color and are used to mark dangers such as (but not limited to) racecourses, underwater structures, pipelines, etc.



The Lateral System

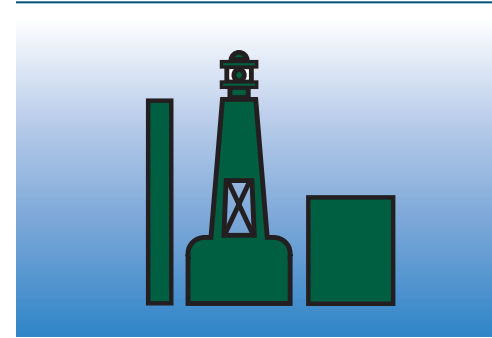
The lateral system is used to mark **preferred safe routes**. Consisting of **green** and **red** buoys, the system marks the course of deepest water and is standardized for international waterways.

There are two main types of Lateral System buoys:

- **Port-hand buoys**
- **Starboard-hand buoys**

The Lateral System also includes the following:

- **Bifurcation Buoys**
- **Standard Day Beacons**
- **Fairway Buoys**



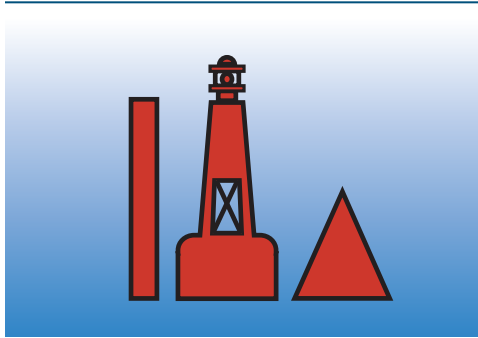
Port-Hand Buoys

Port-hand buoys are **green** in colour and mark the **left side of a channel** or the **location of a specific danger**. Port-hand buoys must be kept on the **left-hand side** of a pleasure craft when heading **upstream**.

Port-hand buoys are identified by letter(s) and odd-digit number(s), and in standard configuration, are flat on the top. In some instances, a port-hand buoy may be fitted with a top-mark consisting of a single green cylinder.

A port-hand buoy may also be fitted with a green light that flashes in either a:

- F1 pattern (single flashes in 4 second intervals); or
- Q pattern (quick single flashes one second apart)



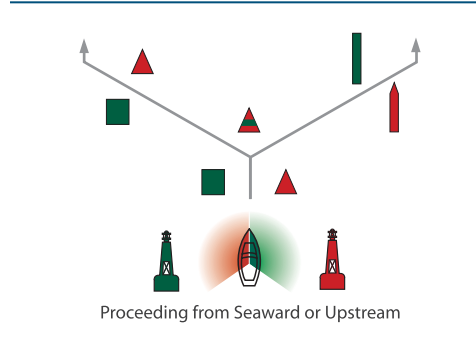
Starboard-Hand Buoys

Starboard-hand buoys are **red** in color and mark the **right side of a channel** or the location of a specific danger. Starboard-hand buoys must be kept on the **right-hand side** of a pleasure craft when heading **upstream**.

Starboard-hand buoys are identified by letter(s) and even-digit number(s) and in standard configuration, are pointed on the top. In some instances, a starboard-hand buoy may be fitted with a top-mark consisting of a red cone.

Starboard-hand buoys may also be fitted with a red light that flashes in either a:

- F1 pattern (single flashes in 4 second intervals); or
- Q pattern (quick single flashes one second apart)



Lateral System Navigation

When traveling **upstream**:

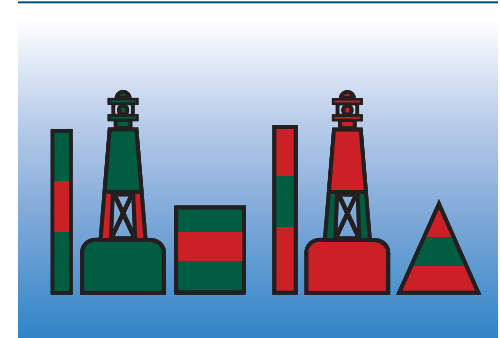
- Always keep the green port-hand buoy on the left side of the vessel
- Always keep the red starboard-hand buoy on the right side of the vessel

When traveling **downstream**:

- Always keep the green port-hand buoy on the right side of the vessel
- Always keep the red starboard-hand buoy on the left side of the vessel

Use the **“Red Right Return”** memory aid:

- Red Right Return refers to keeping the red starboard-hand buoys on the right side of your vessel when returning upstream to headwaters or to harbour



Bifurcation Buoys

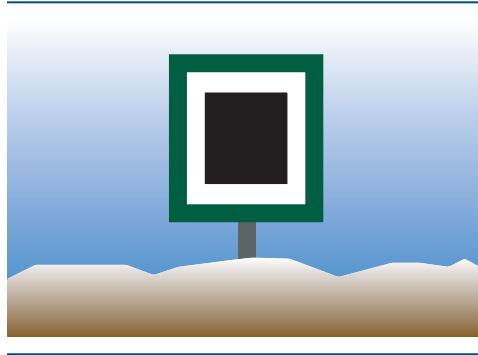
Part of the lateral system, bifurcation buoys indicate the **junction of channels**:

- **Port-Junction** bifurcation buoys are green in color with a red horizontal band at the midsection. Port-junction buoys mark the junction of two channels and should be kept on the port (left) side of the vessel when navigating upstream.
- **Starboard-Junction** bifurcation buoys are red in color with a green horizontal band at the midsection. Starboard-junction buoys mark the junction of two channels and should be kept on the starboard (right) side of the vessel when navigating upstream.



What is a Day Beacon?

Day beacons are signs posted on land or water. They are not lighted and intended for **daytime** use only. Day beacons utilize the same colors as the lateral system and are typically used as **channel or hazard markers**. They may be marked with reflective lettering for identification on marine charts.



Port-Hand Day Beacon

A port-hand day beacon consists of a black or green square on a white background framed by a reflective green border. The port-hand day beacon **identifies the port (left) side of the channel or hazard** and must be kept on the left side when proceeding **upstream**.

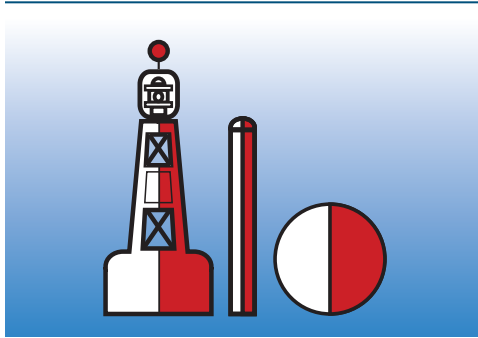
Port-hand day beacons may display an odd number marked with reflective white lettering for reference on marine charts.



Starboard-Hand Day Beacon

A starboard-hand day beacon consists of a red triangle on white background framed by a reflective red border. The starboard-hand day beacon **identifies the starboard (right) side of the channel or hazard** and must be kept on the right side when proceeding **upstream**.

Starboard-hand day beacons may display an even number marked with reflective white lettering for reference on marine charts.

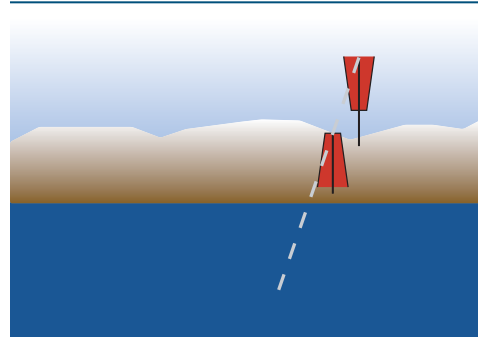


Fairway Buoys

Fairway buoys are used to mark the **entrance to a channel, the centre of a shipping channel, or a safe approach to land**. Vessels should keep the fairway buoy on the **left (port) side** when navigating **upstream or into port**.

Fairway buoys are identified by the following:

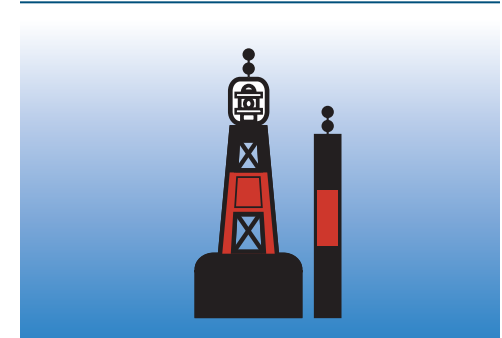
- Red and white in color, divided vertically with one side red and the other side white
- Will have a ball shaped top-mark
- May be equipped with a white light that flashes in a Mo(A) sequence – One short flash, followed by one long flash repeated 10 times per minute



What is a Range?

Ranges are typically used to **guide** larger vessels through a channel. Ranges consist of two or more fixed markers, permanently affixed at a significant distance from each other, and positioned at different elevations.

The navigator is able to follow the recommended route by positioning his/her vessel on a visual sight-line so the marks are lined up. When aligned correctly, the navigator will see one marker in-line and on top of the other marker.

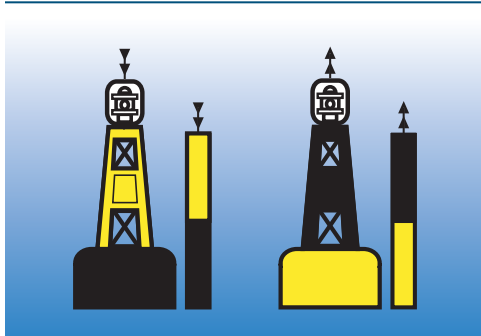


Isolated Danger Buoys

An isolated danger buoy is used to mark an **isolated hazard or obstruction** such as a rock, shoal, or sunken island. Operators should refer to a marine chart to determine the features of the isolated danger (i.e. size, depth, exact location etc.) and should navigate well clear of the marked danger.

Isolated danger buoys are identified by the following:

- Black in colour with a wide red band at the midpoint
- Will have a top-mark consisting of two black balls
- May be equipped with a white light that flashes in a FL(2) sequence – a two flash sequence repeated every 4 seconds



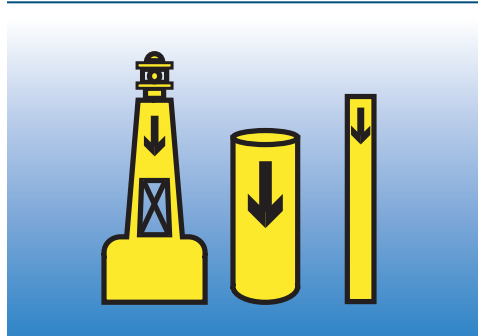
The Cardinal System

The cardinal system consists of yellow and black buoys that are used to assist boaters in identifying the **location of safe water**. Safe water lies on the north, south, east or west side of the buoy as indicated by the cardinal compass points. Cardinal buoys may be equipped with a light and/or letters for identification on a marine chart.

Cardinal markers are spar or pillar shaped (with a flat top). The position of the yellow and black color bands indicates the cardinal compass point of North, South, East or West and therefore the direction of the safest water. If so equipped, top-marks consisting of two cones indicate the direction of safe water.

Cardinal buoys may also be equipped with a flashing white light. North flashes once; South flashes in a group six times followed by one long flash; East flashes in a group three times; and West flashes in a group nine times.

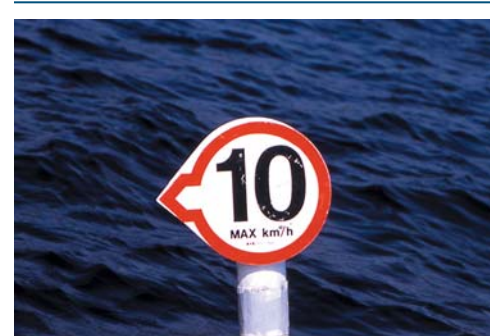
Please refer to Appendix B (pages 101 & 102) for a description of each of the Cardinal System buoys.



What are Special Buoys and Flags?

There are a variety of special buoys and flags that mark specific hazards and provide information to the operator. These markers may be equipped with lights and may be marked with letters or numbers for chart identification. Operators must learn and be able to identify each special buoy and flag.

Please refer to Appendix B (pages 101 & 102) for a description of special buoys and flags.



Other Aids to Navigation

Operators may encounter additional aids to navigation including command signs and warning signs. These signs may be posted either on land or in the water and may signify:

- No-wake zones
- No-anchorage areas
- Speed-limit zones
- Low-head dam hazards
- Pipeline hazards
- Power line hazards

Chart of Buoys







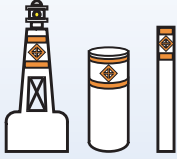
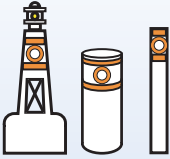
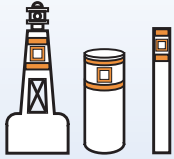
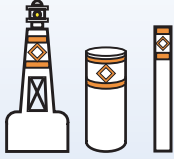
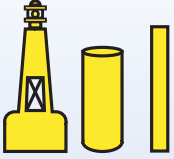
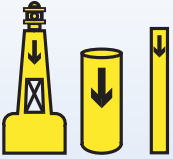
	North Cardinal Buoy	South Cardinal Buoy	East Cardinal Buoy	West Cardinal Buoy	Diving Buoy	Swimming Buoy
						
Purpose	A north cardinal buoy is positioned so that the safest water lies to the north of the buoy	A south cardinal buoy is positioned so that the safest water lies to the south of the buoy	An east cardinal buoy is positioned so that the safest water lies to the east of the buoy	A west cardinal buoy is positioned so that the safest water lies to the west of the buoy	Diving buoys mark an area where scuba diving (or other such diving activities) are taking place	Swimming buoys mark the perimeter of swimming areas
Colour	Of the portion above the waterline, the buoy is black on the top and yellow on the bottom	Of the portion above the waterline, the buoy is yellow on the top and black on the bottom	Of the portion above the waterline, the buoy is colored black with a wide yellow band around the midsection.	Of the portion above the waterline, the buoy is colored yellow with a wide black band around the midsection	White	White
Shape	If the buoy is not equipped with a light, it will be normally spar shaped	If the buoy is not equipped with a light, it will be normally spar shaped	If the buoy is not equipped with a light, it will be normally spar shaped	If the buoy is not equipped with a light, it will be normally spar shaped	Various	Various
Identification	Letters only	Letters only	Letters only	Letters only	None	None
Topmark	Two black cones, stacked on of top of each other, pointing upwards	Two black cones, stacked on of top of each other, pointing downwards	Two black cones, stacked on of top of each other, with the bottom one pointing down and the top one pointing up	Two black cones, stacked on of top of each other, with the bottom one pointing up and the top one pointing down	Carries a red flag not less than 50 cm square with a white diagonal stripe	None
Light	A white light flashing in a Quick (Q) sequence every 1 second or in a Very Quick (VQ) sequence every 0.5 seconds	A white light flashing in a (Q(6) + LF1)15s sequence consisting of a group six quick single flashes followed by one long flash repeated every 15 seconds, or in a (VQ(6) + LF1)10s sequence consisting of a group of six very quick single flashes followed by one long flash repeated every 10 seconds	A white light flashing in a Q(3)10s sequence consisting of a group of three quick single flashes repeated every 10 seconds, or in a VQ(3)5s sequence consisting of a group of three very quick single flashes repeated every 5 seconds	A white light flashing in a Q(9)15s sequence consisting of a group of nine quick single flashes repeated every 15 seconds, or in a VQ(9)5s sequence consisting of a group of nine very quick single flashes repeated every 5 seconds	None	May carry a yellow light that flashes in a (F1) 4s sequence

Chart of Buoys |

	Keep Out Buoy	Control Buoy	Information Buoy	Hazard Buoy	Cautionary Buoy	Anchorage Buoy
						
Purpose	Keep out buoys mark an area of water where boats are prohibited	Control buoys mark an area of water where boating is restricted	Information buoys provide information of interest to boaters using words or symbols	Hazard buoys mark random hazards such as rocks or shoals	Marks dangers such as underwater structures or areas where no safe channel exists. Can also mark traffic separations	Identifies areas where it is safe to anchor
Colour	White with an orange diamond containing an orange cross on two opposite sides and two orange horizontal bands, one above and one below the diamond symbols	White with an orange open faced circle on two opposite sides and two horizontal orange bands, one above and below the circles A black figure or symbol inside the orange circles indicates the type of restriction in effect	White and have an orange, open-faced square symbol on two opposite sides and two orange horizontal bands, one above and one below the square symbol	White and have an orange diamond on two opposite sides and two orange horizontal bands one above and one below the other	Yellow	Yellow with a symbol representing an anchor
Shape	Various including: Light buoys, spar-shaped, and cans	Various including: Light buoys, spar-shaped, and cans	Various including: Light buoys, spar-shaped, and cans	Various including: Light buoys, spar-shaped, and cans	Various including: Light buoys, spar-shaped, and cans	Various including: Light buoys, spar-shaped, and cans
Identification	None	None	None	Letters	Letters only	Letters
Topmark	None	None	None	None	May carry a topmark that is a single yellow "X" shape	None
Light	May carry a yellow light that flashes in a (F1) 4s sequence	May carry a yellow light that flashes in a (F1) 4s sequence	May carry a yellow light that flashes in a (F1) 4s sequence	May carry a yellow light that flashes in a (F1) 4s sequence	May carry a yellow light that flashes in a (F1) 4s sequence	May carry a yellow light that flashes in a (F1) 4s sequence



Lock Navigation

A lock is a physical structure of gates that enables vessels to travel between two bodies of water that are of different elevations.

The vessel enters the lock from one body of water (vessels may enter from each end of the lock but from only one end at a time). Once the gates at the entrance of the lock are closed, the water level within the lock is increased or decreased to match the elevation of the adjoining body of water. When the proper water level has been reached within the lock, the gates are opened and the vessel is able to travel onwards.

A restricted speed zone is typically found at the mouth of each side of the lock. Certain activities such as swimming, fishing, and water-skiing may be restricted near locks.



Entering and Exiting A Lock

Operators should always control their speed when in the vicinity of a lock. When approaching a lock the operator should:

- Identify and adjust for water currents and other boat traffic
- Be aware of and operate according to any posted navigational aids
- Identify and adjust for adverse weather conditions such as high wind
- Be prepared for oncoming traffic as boats exit the lock

By mooring at the “blue-line” area at the mouth of the lock, the lockmaster is made aware of your intention to enter the lock at the next opening. The lockmaster may provide specific instructions to your vessel including when to enter, in what order, and where to moor your vessel once inside the lock.



When entering a lock:

- 1) Wait for any instruction from the lockmaster or waterway personnel
- 2) Proceed slowly and with caution into the lock
- 3) Use the vertical mooring lines affixed to the walls of the lock to secure your bow and stern. Your boat's mooring lines should be wrapped loosely around the lock's mooring lines allowing for upward or downward movement of your craft. You should never tie your boat to the lock's mooring lines
- 4) Once positioned, turn off all engines, cease from using any fuel-burning appliances, and refrain from smoking. Turn on your engine ventilation system (blower)
- 5) Once the water level within the lock has reached the proper elevation, the opposite end of the lock will open. The lockmaster will instruct you when to start your engine and when to proceed
- 6) Proceed with caution. Never block the entrance to the lock from other boats that may be entering or exiting



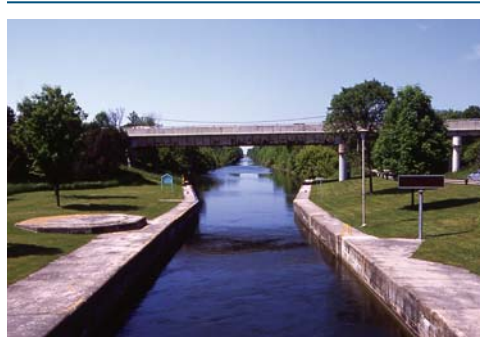
River Navigation

Operating a pleasure craft or PWC on a river is different than operating on an open waterway. A river presents its own unique hazards and navigation conditions. Some rivers may exhibit strong currents which can affect steering and predictability of operation (which is not typical of an open waterway).

The water level in a river may also rise or lower more rapidly than an open waterway – exposing trees, rocks, sunken islands and other hazards. Always watch for such hazards and/or navigation aids that may indicate their position.

Remember

When approaching a blind turn always keep to the right side of the river. Power-driven craft and sailboats under 20 m must give way to less manoeuvrable crafts while navigating a river.

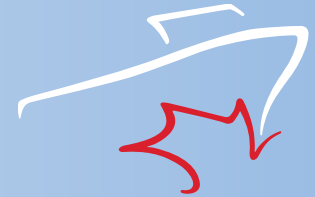


Canal Navigation

Canals are man-made waterways. A canal is typically narrower than a channel, and differs from a river as the depth of the water can be controlled.

Remember

Operators should always keep to the right when approaching oncoming traffic or entering a blind turn. Power-driven craft and sailboats under 20 m must give way to less manoeuvrable crafts operating in a shipping lane or canal.



Module 5 | Summary |


Understanding and abiding by navigation and right-of-way rules is essential for safe boating. Remember that certain types and sizes of craft are governed by different navigation rules under the Collision Regulations. Knowing what actions to take when approaching another craft will help you reduce the risk of collision and injury to yourself and others.

You should be able to navigate with confidence during periods of restricted visibility, such as when operating at night or during poor weather conditions. Being able to recognize different types of craft by the configuration of their navigation lights is vital for operation during such conditions.

By completing this module, you should know the rules and regulations for operating on unique waterways such as canals, rivers, and locks. Remember that less manoeuvrable vessels have the right-of-way when operating in shipping lanes and confined waterways.

- 1) When **overtaking** another vessel from behind, you are the **stand-on craft** and should maintain your course and speed.
True or False?
- 2) **Day-beacons** are intended for daytime use only.
True or False?
- 3) A **cautionary buoy** is black in colour.
True or False?
- 4) Another **powerboat** approaches you from the **port (left)** side. Which action should you take?
 - A - Maintain your speed and direction with caution
 - B - Immediately alter your course to starboard
 - C - Speed up and pass in front of the other vessel
 - D - Stop and wait for the other boat to pass
- 5) **Red right returning** is a navigational memory aid which refers to:
 - A - A red cautionary marker used to signal dangerous weather conditions
 - B - Keeping the red starboard-hand buoys on the right side of your vessel when returning upstream to headwaters or to harbour
 - C - Rule 27 of the Collision Regulations
 - D - Displaying only a red light when returning to harbour
- 6) Which three colours are used for **navigation lights**?
 - A - Red, green and blue
 - B - Red, green and yellow
 - C - Green, red and white
 - D - White, blue and yellow
- 7) You have **anchored** your craft for an overnight stay. What type of light should you display?
 - A - Sidelights
 - B - Sternlight
 - C - Masthead light
 - D - All-round light
- 8) You are approaching another craft **after sunset** and see a **green** and **white** light. What action should you take?
 - B - Use caution and maintain your speed and direction
 - C - Immediately alter your course and pass in front of the other vessel
 - D - Immediately alter your course and pass behind the other vessel
 - E - Stop and signal the other craft to change direction
- 9) **Cardinal buoys** are used to **identify** which of the following?
 - A - Persons engaged in diving activities
 - B - Safe water on the north, south, east or west side of the buoy
 - C - Specific hazards such as submerged power lines
 - D - A safe anchorage area
- 10) You are heading upstream and approach a buoy that is **red** in colour. What **action** should you take?
 - A - Stop and proceed in the opposite direction
 - B - Proceed while keeping the buoy on the left side of your craft
 - C - Proceed while keeping the buoy on the right side of your craft
 - D - Use caution and pass as far from the buoy as possible

module 6



Responding to Emergencies

In This Module You'll Learn:

- *What to do if your vessel capsizes or sinks*
- *What to do if your vessel is swamped or grounded*
- *What actions to take if your vessel's hull is leaking or flooding*
- *How to respond if you've been involved in a collision*
- *What to do in the case of breakdown or mechanical failure*
- *How to rescue a person overboard*
- *Cold water and cold weather survival techniques*
- *How to assess and treat hypothermia*
- *What distress signals to use in case of emergency*

Responding to Emergencies |



Boating Emergencies

Boating emergencies can come in various forms and degrees of severity. The key to safe, enjoyable boating is being prepared and having the right knowledge. You may not be able to predict the unexpected - but you *can* prepare for it.

In a boating emergency you should:

- Remain calm
- Properly assess the situation and take the appropriate actions
- Ensure your own safety and that of your passengers and crew
- If necessary, signal your need for assistance using an appropriate distress signal

Remember

It is recommended that pleasure craft operators take a first aid course. If an emergency arises, you will be able to respond effectively and reduce the risk of serious injury or death.



Responding to Emergencies

Remembering the following will help you respond in an emergency.

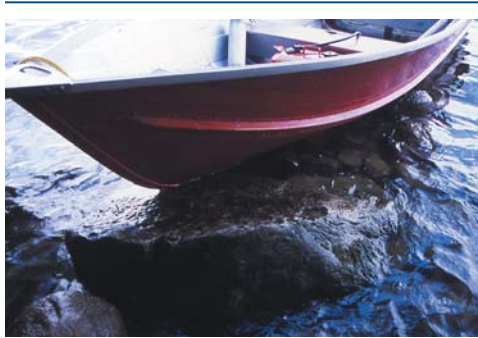
- Always ensure that passengers and crew members are wearing a PFD or Lifejacket
- The *Small Vessel Regulations* require that certain vessels carry an emergency kit. Keep the proper equipment and supplies onboard to stop hull leaks and make minor on-water repairs
- Carry a first aid kit onboard at all times
- If you or any of your passengers have been injured:
 - Whoever is closest to the injured person should assess the victim's breathing and administer first aid if necessary



Rendering Assistance

Always **keep a look-out** for other boaters signalling distress and/or need of assistance. If you have witnessed a distress signal or an emergency situation, you are **required by law** to render assistance as long as it is safe to do so.

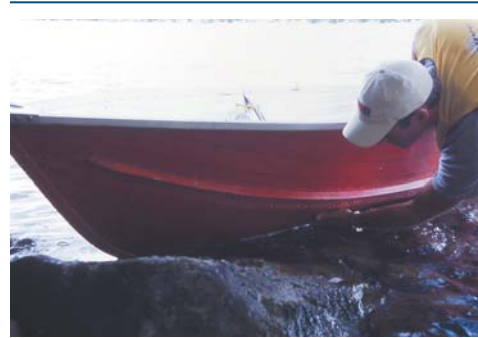
Sinking, Swamping, Capsizing and Grounding



If Your Craft has Run Aground

If your craft has run aground:

- 1) Immediately shift the motor to neutral
- 2) Ensure that everyone is wearing a PFD or Lifejacket
- 3) Visually and/or verbally confirm that all passengers are present and accounted for
- 4) Determine if there are other craft in the vicinity that may offer assistance
- 5) Determine if there is any danger of being hit by other boat traffic
- 6) Inspect the hull and equipment for any damage. Check for rising or accumulating water in the hull
- 7) If the hull is undamaged, assess the your course of action:
 - Is it possible to dislodge the craft from its obstruction?
 - Is it necessary to lighten the craft by removing equipment and passengers?
 - Is it possible that passengers may be able to push the craft off the obstruction?



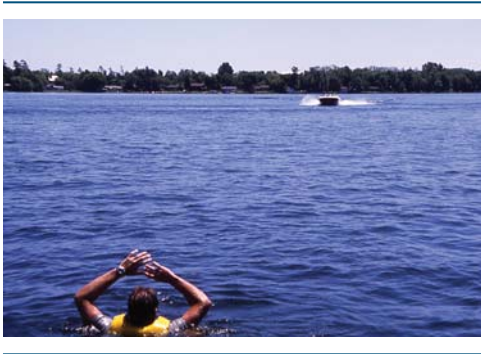
- Is it possible to use the reverse thrust of the engine to free the craft from the obstruction?
- 8) If necessary, signal your need for assistance using an appropriate distress signal



If Your Craft has Capsized

If your craft has capsized:

- 1) Ensure that everyone is wearing a PFD or Lifejacket
- 2) Visually and/or verbally confirm that all passengers are present and accounted for
- 3) Determine if there are other craft in the vicinity that may offer assistance
- 4) Determine if there is any danger of being hit by other boat traffic
- 5) If you and your passengers are far from shore or unable to reach shore, stay with your craft. If you craft is not fully submerged, climb onto the overturned hull. This will help you retain energy, increase your survival time in cold weather/water conditions and increase your visibility to other boaters. Only re-board the capsized vessel if it still afloat, seaworthy and safe to do so. If it is appropriate to leave the craft, do so and immediately get assistance once you've reached shore
- 6) If necessary, signal your need for assistance using an appropriate distress signal



If Your Craft is Swamped or is Sinking

If your craft has been swamped or is sinking:

- 1) Ensure that everyone is wearing a PFD or Lifejacket
- 2) Visually and/or verbally confirm that all passengers are present and accounted for
- 3) Determine if there are other craft in the vicinity that may offer assistance
- 4) Determine if there is any danger of being hit by other boat traffic
- 5) Attempt to stop any hull leaks or flooding if possible (see "Hull Leaks and Flooding")
- 6) If you cannot stop your craft from sinking, immediately swim to safety
- 7) If necessary, signal your need for assistance using an appropriate distress signal



Hull Leaks and Flooding

Striking underwater hazards such as a submerged rock, sunken island, shoal or deadhead may cause serious damage to your craft resulting in a breach of the hull. If the hull of your craft is breached, leaking and flooding will result. Improper fitting of the craft's drain plug or a worn/improperly installed exhaust/out-drive seal may also result in flooding.

If you witness water accumulating in the hull of the craft immediately take the following actions:

- 1) Ensure that all passengers are wearing an approved Lifejacket or PFD
- 2) If the craft is moving, bring it to a complete stop (this will reduce water pressure against the hull and reduce the speed at which water is entering the boat)
- 3) Identify the source of the hull leak or flooding
- 4) Stop the hull leak if possible. The use of tapered wooden plugs, a hull patch kit, towel, rag or other malleable material may work



- 5) Attempt to remove accumulations of water. You can remove water by using a hand-held bailer, manual pump, or bilge pumping system. Ensure you use a device that suits the circumstances and the type of craft (your craft should be equipped with appropriate bailing devices as stipulated by the *Small Vessel Regulations - See Appendix A*)
- 6) If necessary, signal your need for assistance using an appropriate distress signal

Remember

You should carry onboard at all times the tools and materials needed to temporarily stop hull leaks or flooding. These include:

- Tapered wooden plugs
- Hull patch kit
- Towels, rags, or other malleable material



Collisions

If your craft has been involved in a collision:

- 1) Ensure that everyone is wearing a PFD or Lifejacket
- 2) Visually and/or verbally confirm that all passengers are present and accounted for
- 3) Determine if there are other craft in the vicinity that may offer assistance
- 4) Determine if there is any danger of being hit by another boat
- 5) Inspect the hull and equipment for any damage. Check for rising or accumulating water in the hull
- 6) If necessary, signal your need for assistance using an appropriate distress signal



Reporting a Collision

You are required to take certain actions if you have been involved in a collision:

- You are required to stop and identify yourself, your vessel, your home port, and your ports of origin and destination to the other craft
- You are required to assist the crew of the other vessel if it safe to do so
- If damage exceeding \$1000 has occurred, or the seaworthiness of the vessels has been compromised, you are required by law to file an accident report with the local authorities
- If serious injury or death has occurred, you are required by law to report the collision to the local law enforcement agency

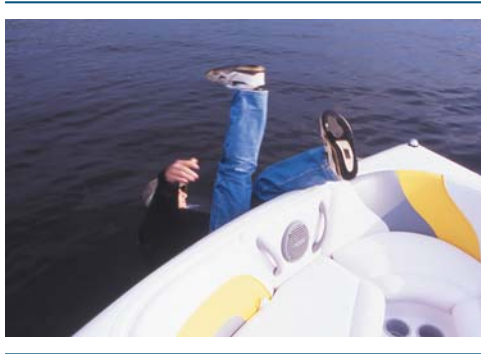


Abandoning Ship

If circumstances (such as an onboard fire) dictate that you and your crew need to abandon ship, do the following:

- 1) Ensure that you and your passengers are wearing a PFD or Lifejacket
- 2) If time permits, signal your need for assistance with a radio, flare, horn, or flashlight
- 3) If possible, jump to the windward side of the boat (the boat will drift away from you)
- 4) Once in the water swim well clear of the boat
- 5) Visually and/or verbally confirm that all passengers are present and accounted for

Person Overboard |



Person Overboard Emergency

Over 40% of all boating fatalities result from people falling overboard. You should know how to react and prepare for such an emergency:

- Ensure that your emergency equipment is properly maintained and readily accessible
- Practice overboard rescue techniques with your passengers and make them aware of their responsibilities
- Practice manoeuvring your pleasure craft to properly position your boat to perform overboard rescue techniques

To retrieve a person overboard you should utilize one or more of the following:

- An approved Lifebuoy
- An approved Buoyant Heaving Line
- An appropriate Re-boarding Device
- A Reaching Assist



Rescuing a Person Overboard

If you come across a victim of hypothermia, do the following:

First, you should sound an alarm notifying your passengers and other boaters of the situation and call for help:

- 1) Shout "Help - Person Overboard!"
- 2) Assign another passenger to keep a visual contact of the person overboard and continuously point to the person's location
- 3) Immediately throw the person a buoyant item such as a PFD or Lifejacket. This will help the person stay afloat and mark their position in the water (in the event that they become submerged or if attempting to rescue under reduced visibility)

Second, you should assess the situation and your preparedness:

- 1) Are you wearing a PFD or Lifejacket?



- 2) Do you have the proper emergency equipment on hand and readily accessible?

- 3) How panicked is the overboard person?

Third, you should remain calm and determine which overboard rescue technique to use:

- 1) Reaching Assist (such as an oar, paddle, pole, or piece of clothing)
- 2) Buoyant Heaving Line
- 3) Life Buoy



Using a Reaching Assist

To use a reaching assist:

- 1) Carefully manoeuvre the craft turning the bow into the wind
- 2) Once in position shut down the engine to avoid injury or accidental movement
- 3) Move to the side of the boat keeping your weight low and instruct the victim that you're going to help him out of the water
- 4) Using the reaching assist pull the victim to the side of the boat
- 5) Using a re-boarding device, such as a portable ladder, assist the victim up and over the side of the boat. In a small boat recover the victim over the stern as it is typically the lowest part of the craft



Using a Buoyant Heaving Line

To use a buoyant heaving line:

- 1) Carefully manoeuvre the craft turning the bow into the wind
- 2) Once in position shut down the engine to avoid injury or accidental movement
- 3) Throw the heaving line so it lands behind the victim
- 4) Slowly pull the line towards you so the victim is able to grab onto it
- 5) Move to the side of the boat keeping your weight low and instruct the victim that you're going help him out of the water
- 6) Using a re-boarding device, such as a portable ladder, assist the victim up and over the side of the boat. In a small boat recover the victim over the stern as it is typically the lowest part of the boat



Using a Life Buoy

To use a life buoy:

- 1) Carefully manoeuvre the craft turning the bow into the wind
- 2) Once in position shut down the engine to avoid injury or accidental movement
- 3) Throw the life buoy so it lands behind the victim
- 4) Slowly pull the line towards you so the victim is able to grab onto it
- 5) Move to the side of the boat keeping your weight low and instruct the victim that you're going help him out of the water
- 6) Using a re-boarding device, such as a portable ladder, assist the victim up and over the side of the boat. In a small boat recover the victim over the stern as it is typically the lowest part of the boat



Important Rescue Tips

Always remember the following when rescuing a person overboard:

- Position your craft downwind from the victim. He or she will drift towards your boat
- Don't panic. Keep a calm head and consider your course of action
- Don't jump into the water. If the victim is panicking and thrashing in the water he or she may grab hold of you and pull you under
- Practice the emergency recovery techniques described in this section and ensure your passengers become familiar with the **equipment, techniques and movement of the pleasure craft** necessary to perform a successful rescue



Hypothermia

Hypothermia is caused by prolonged exposure to abnormally low temperatures:

- Immersion in cold water
- Exposure to cold air and wind while in water soaked clothing
- Prolonged exposure to low water and air temperatures



Stages of Hypothermia

If suffering from hypothermia, the victim's core body temperature drops below normal levels resulting in weakened muscular functions, reduced co-ordination and slowing of mental functions.

A person suffering from hypothermia will exhibit progressive symptoms including:

- 1) **Early Stage:** The victim is still conscious but is shivering and exhibits slurred speech
- 2) **Intermediate Stage:** The victim may be irrational, confused and sleepy. Will exhibit a slow and weak pulse, slow respiration and lack of co-ordination. Shivering exhibited in the early stage will now be slowed or absent
- 3) **Final Stage:** The victim may lose consciousness. Will exhibit weak, irregular or absent pulse and/or respiration



Cold Water/Weather Survival Gear

You and your passengers should observe the following when operating in cold environments:

- Always wear cold weather / cold water protection gear. Worn properly, it can protect you from the elements and delay the effects of hypothermia. Options include:
 - Wet Suit
 - Dry Suit
 - Survival Suit
 - Immersion Suit
 - Exposure Coverall
 - Multiple layers of dry, light clothing and/or a water or wind proof outer layer can also increase your survival time if immersed in cold water

Always choose cold weather protection gear that is appropriate to the temperature and your operating environment.



Responding to Hypothermia

Immediate Action

- 1) Ensure that you are wearing an approved PFD or Lifejacket
- 2) Assess the victim's current condition: What stage of hypothermia is he exhibiting?
- 3) Clearly identify yourself to the person and ask him to respond
- 4) Assess what emergency and/or personal items you have onboard that may be used to warm the victim
- 5) Assess your ability to help the victim:
 - Do you have warm dry items to cover and wrap the person?
 - Will you be able to get the victim to safe harbour quickly?
- 6) Exhibit a distress signal indicating your need for assistance if necessary



Rescue Procedure

- 1) Remove the person from the source of cold exposure. (You should use the overboard rescue techniques described in the previous section to remove the person from the water)
- 2) Provide dry shelter below deck if possible. Use a blanket, towel, or article of clothing to keep the victim warm
- 3) Attempt to slowly increase the victim's core body temperature by one or a combination of the following:
 - Remove the victim from wet clothing as it can prolong cold exposure and worsen the symptoms of hypothermia. However, only remove wet clothing if you are able to provide a dry covering such as a blanket or a warm environment
 - Cover the victim's head and neck
 - Wrap the victim in dry blankets or towels
 - Cover the victim with an insulating device (such as a reflective heat blanket) and vapour barrier



- Apply dry, warm objects (such as a hot water bottle) that have been heated to 40-45 C

Remember

- If the victim asks for a warm liquid you may provide it to him. However, you should never give the victim alcohol or hot stimulants
- Do not rub and/or massage the victim's body or extremities in attempt to warm him up. Doing this may damage nerve endings at the skin and encourage cold blood from the extremities to move to the core of the body
- You may use you own body to transfer heat to the victim
- You should always carry a Safety Kit, including equipment suitable for responding to cold water / cold weather emergencies



Huddle Position

If you find yourself in cold water as a result of an accident or other emergency do the following:

Immediate Action

- 1) Assess the situation:
 - Is everyone wearing a PFD or Lifejacket?
 - Can you get to shore or safety?
 - Are there any boaters who can assist you?
 - Are you able to signal or call for help?
- 2) If you are within 50 m of shore and are able to swim to safety you should do so
- 3) If you are injured, there is help close by or you are farther than 50 m from shore, you should stay where you are



Survival Procedure

- 4) Immediately signal or call for help if you are able to do so
- 5) Assume the **Huddle** position:
 - Place your arms around each others mid to lower back and pull together so your chests are close to each other's sides
 - Intertwine your legs
 - Place any children in the middle of the huddle
 - Keep unnecessary movements to a minimum in order to conserve energy



Heat Escape Lessening Position

If you find yourself alone and exposed to cold water, use the Heat Escape Lessening Position (H.E.L.P.) to reduce heat loss from your core body temperature and delay the effects of hypothermia.

H.E.L.P. is performed as follows:

- 1) Cross your arms tightly against your chest
- 2) Draw your knees up and against your chest
- 3) Keep your head and face out of the water

Remember

If you are alone and close to a floating object you can climb onto the object to remove yourself from the cold water and save energy. However, you should only do so if you are able to get most of your body out of and above the water.



Breakdown and Mechanical Failure

You are required by law to maintain your craft and safety equipment. Each must be capable of functioning properly at all times. By regularly maintaining and inspecting your vessel you will reduce the chance of unexpected breakdown.

If your craft has broken down or is inoperable due to mechanical failure:

- 1) Immediately alter your speed as appropriate to the situation
- 2) Use an anchor to secure your craft if necessary. If you are in a high traffic area, use a manual propelling device (such as a paddle or oars) to manoeuvre your craft to a safe area before anchoring. If you have lost all power and are drifting towards significant danger, set your anchor immediately
- 3) Investigate the cause of the breakdown or failure
- 4) If possible, correct the problem
- 5) If necessary, signal your need for assistance using an appropriate distress signal



Remember

You should always carry a toolkit including:

- Spare bulbs (appropriate for your craft)
- Spare fuses
- Grease, penetrating oil and rags
- Spare Oil (4-Stroke or 2-Stroke depending on your type of engine)
- Spare safety lanyard (PWC operators)
- Spare spark plugs (appropriate for your engine)
- Basic toolset
- Common nuts and bolts
- Tie straps and duct tape



Fighting a Fire

When fighting a fire:

- 1) Ensure the extinguisher is suitable for the type of fire
- 2) Stand at least 1 m from the source of the flame
- 3) Pull the safety pin on the handle of the extinguisher
- 4) Aim at the base of the flames and squeeze the trigger handle
- 5) Spray the base of the fire with a left-to-right sweeping motion



Important Fire Extinguisher Tips

Always remember to:

- Use an extinguisher designed for marine use as it will be more corrosion resistant
- Use an extinguisher with an external gauge (that indicates the condition of the charge)
- Ensure the extinguisher is inspected and maintained regularly
- Remember that the fire-fighting material in dry chemical extinguishers can “cake” and lose effectiveness over time. The extinguisher should be turned upside down and shaken at least once per month. CO₂ type extinguishers should be weighed annually and re-filled when they have diminished to 90% capacity
- Be aware that CO₂ and Halon type extinguishers utilize colourless, odorless gases that displace oxygen. Proceed with caution if using or storing these type of extinguishers in an enclosed area



The Proper Equipment

The *Small Vessel Regulations* require that Class BC extinguishers be used on pleasure craft in Canada. However, the use of a Class ABC fire extinguisher is recommended. Ensure that the fire extinguisher you choose meets the requirements for the size and type of your craft.

Distress Signals |



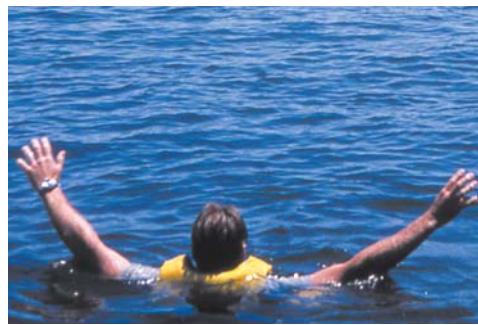
Understanding and Using Distress Signals

Pleasure craft operators must be able to recognize, use and exhibit distress signals as prescribed by the *Small Vessel Regulations*.

Depending on the size of your craft, and whether you are operating a power- or sail-driven vessel, you are required to carry certain types of distress signals. See Appendix A (pages 44 & 45) for distress equipment requirements.

Remember

The *Criminal Code of Canada* requires that you assist those in distress so long that it does not threaten your safety or that of your vessel. Also remember that it is an offence to make or report a fake distress signal.



Hand Signal

To use your hands to signal distress, slowly raise and lower outstretched arms to each side in repetition.



Portable Horn / Whistle

Using a portable horn or whistle, you can signal distress by continuously sounding in **one-minute intervals**. You can also signal **SOS** by sounding three short blasts, then three long blasts, followed by three short blasts.

Other Sound Signalling Devices

You can signal distress by continuously sounding a fog-signalling device. You may also use a gunshot or other explosive sound-emitting device fired at one minute intervals.



Watertight Flashlight

A watertight flashlight can serve as an effective distress signal at night or during periods of reduced visibility. To signal distress with a flashlight, flash **SOS** - Three short flashes, then three long flashes, followed by three short flashes.



Flares

There are four types of flares approved for use in Canada: Types A, B, C and D.

Type A: Parachute Flare

To discharge this aerial flare read the manufacturer's instructions, hold away from your body, and pull the release mechanism. When launched this red light flare reaches a height of approximately 300 m and burns for at least 40 seconds. This type of flare can be seen from water, land and air.

Type B: Multi-Star Rocket

Also an aerial flare, this device fires two red stars to a height of approximately 100 m. To discharge, read the manufacturer's instructions and trigger the flare from a hand-held position. This type of flare will burn for 4 to 5 seconds and be visible from water, land and air.

Type C: Hand-Held Flare

This type of flare is designed for hand-held use and is not highly visible from a distance. Because of its limited visibility, this flare is most effective when used to



help rescuers pin-point your location from the air. To discharge: Read the manufacturer's instructions, hold downwind and away from your body and trigger the flare. This flare will burn intensely for at least one minute.

Type D: Buoyant or Hand-Held Smoke Flare

This type of flare is most effective for daytime use. Hand-held or floating type smoke flares will discharge intense orange smoke for at least 3 minutes. To discharge: Read the manufacturer's instructions, pull the release mechanism and hold the flare upright or toss it into the water.

Remember

Always read the manufacturer's directions before using a flare or pyrotechnique device. It is illegal to test or discharge a flare if not used for an emergency situation.

All flares or pyrotechnic distress signals must be approved for use by the Department of Transport, Canada and are valid for only four years from their date of manufacture.



Marine Radio

You can use a VHF radio to signal distress:

- Repeat **“Pan Pan”** three times to signal the need for assistance
- Repeat **“Mayday”** three times to signal imminent danger and/or a life-threatening situation
- Once the appropriate distress signal is given, relay the following information:
 - The name of your vessel
 - Your position
 - The nature of the emergency
 - The type of assistance needed

Cell Phone

If you have a cell phone onboard, call 911 to report your emergency. You should provide the same information as above.



Code Flags

Code flags can be used to signal distress. Use either of the following:

- The International Signal for Distress: Code flag “N” (November) over “C” (Charlie)
- A square flag with a ball (or item resembling a ball) above or below it



Distress Cloth

A piece of orange-colored material displaying a black square (or approximate shape) and a black circle, identifiable from the air, can be used to signal distress.



Dye Marker

You may also discharge a dye marker in the water around your vessel. The dye marker will colour the water around your vessel signalling the need for assistance.



EPIRB

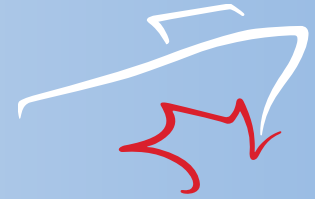
An Emergency Position Indicating Response Beacon (EPIRB) sends a distress signal via satellite to a monitoring center. The monitoring center can immediately dispatch assistance to the signal's exact location. EPIRBs must be registered with the National Beacon Registry at 1-800-727-9414.



Other Distress Signals

Other types of distress signals can be used to indicate the need for assistance. They are:

- A high intensity white light flashing 50 to 70 times per minute
- A square shape (or arrangement of items resembling a square shape) positioned on your vessel or in the water near your vessel
- Flames showing onboard a vessel can be used to signal distress. During daylight hours, choose a safe, flammable substance (such as engine oil in a metal pan) to signal distress. Always use caution when using open flame



Module 6 | Summary |

Responding effectively in an emergency means that you need to be prepared with the right equipment and the right knowledge. You should know what to do if your craft capsizes, sinks, or is swamped by high waves. Always carry the right equipment so that you can respond to hull leaks or flooding of your craft.

Be sure that you understand the correct techniques for rescuing a person overboard or a victim of hypothermia. People suffering from hypothermia exhibit progressive symptoms – you should be able to assess and treat the victim accordingly. You should carry appropriate cold water and cold weather survival gear when operating in harsh environments.

Always have onboard the required distress equipment for your size and type of craft. You should be able to choose an appropriate distress signal according to the circumstances, and be able to use it correctly to exhibit your need for assistance.

Remember: You may never be able to predict an emergency, but you can prepare for one.

Module 6 Review | Emergency Response

Answers on Page 130

- 1) If your craft has **capsized** you should immediately confirm that all passengers are **present and accounted** for.
True or False?
- 2) It is legal to **test** a flare.
True or False?
- 3) You may use a **gunshot** or other **explosive** sound-emitting device fired at one minute intervals to **signal** the need for assistance.
True or False?
- 4) What is the best way to **assist** a person who is suffering from **hypothermia**?
A - Vigorously rub the person's arms and legs
B - Give the person a hot alcoholic beverage
C - Apply warm objects that have been heated to between 40 and 45 C
D - Immediately head for shore before applying treatment to the victim
- 5) What are the **signs** that a person is in the second stage of **hypothermia**?
A - A slow and weak pulse, slow respiration, and lack of co-ordination
B - A weak, irregular or absent pulse or respiration
C - Shivering and slurred speech
D - Loss of consciousness
- 6) You are thrown from your craft into rough, cold seas. The sun is going down and the temperature is dropping. In order to **preserve body heat** you should do which of the following?
A - Begin swimming or treading water
B - Assume the H.E.L.P position by crossing your arms tightly against your chest and drawing your knees up and against your body
C - Lie in the water face up
D - Assume the H.E.L.P position by waving your arms above your body
- 7) What does it mean if a pleasure craft operator repeats "**Mayday**" using a marine radio?
A - The operator is signaling the need for assistance
B - The operator is signaling imminent danger or a life threatening situation
C - The operator is signaling that she is returning to harbour
D - The operator is signaling that she has run out of fuel
- 8) You are operating an open fishing vessel in rough water conditions. Suddenly one of your passengers falls **overboard**. What is the first action you should take?
A - Assign another passenger to keep watch of the person overboard and immediately throw them Lifejacket or PFD
B - Immediately signal your need for assistance with an appropriate distress signal
C - Jump into the water and assist the victim
D - Throw the victim a reaching assist
- 9) While boating in unfamiliar waters, you hit a submerged rock and your craft begins **taking on water**. What should you do?
A - Speed up and quickly return to shore
B - Attempt to slow the leak using duct tape or a tapered wooden plug
C - Stop the boat and use the horn to signal for assistance
D - Jump overboard and return to shore
- 10) What does it mean when a pleasure craft operator displays a **square flag** with a **ball below or above it**?
A - The operator needs assistance
B - The operator has a diver down
C - The vessel is at anchor
D - The vessel is performing search and rescue operations



- 1) What definition is given to the **front** of a pleasure craft?
 - A - Stern
 - B - Transom
 - C - Bow
 - D - Dead Ahead

- 2) When does the Meteorological Service of Canada issue a **gale warning**?
 - A - When sustained wind speeds are between 48 and 63 knots
 - B - When sustained wind speeds are between 15 and 19 knots
 - C - When sustained wind speeds are between 20 and 40 knots
 - D - When sustained wind speeds are between 34 and 47 knots

- 3) When is it **illegal** to tow a water-skier?
 - A - During poor weather conditions
 - B - When operating close to shore
 - C - If you are using a PWC to tow the skier
 - D - After sunset

- 4) What is the name of the **white navigation light** located at the **stern** of the craft?
 - A - Sternlight
 - B - All-round light
 - C - Transom light
 - D - Masthead light

- 5) If **anchoring** a vessel less than 50 m in length from sunset to sunrise, what type of light(s) must you display?
 - A - All-round light
 - B - Masthead light
 - C - Sidelights
 - D - Sidelights and masthead light

- 6) What is the **minimum number of seats** that are required on a vessel that is **towing** a waterskier?
 - A - One
 - B - Three
 - C - Four
 - D - Two

- 7) What are your **obligations** if you have been involved in a **collision** with another vessel?
 - A - You must stop and offer assistance
 - B - If the damage to either craft is less than \$1000 you are not obligated to stop
 - C - You must immediately signal your need for assistance
 - D - If both crafts are operable, you can continue on without stopping

- 8) Which of the following should you **perform before** using a **flare**?
 - A - Point the flare above your head before lighting
 - B - Notify your passengers
 - C - Check the expiry date
 - D - Test the flare

- 9) Which of the following is the correct **definition** of **“draft”**?
 - A - The amount of latent wind evident on a calm day
 - B - The length of the engine’s drive shaft
 - C - The width of a boat at it’s widest point
 - D - The amount of water required for the boat to float freely

- 10) Why is it important to **maintain** your vessel and it’s equipment on a **regular basis**?
 - A - To increase the length of your warranty
 - B - To reduce the risk of emergency due to mechanical failure
 - C - To make your boat look better
 - D - To save on oil

11) Which of the following **actions** should you take when **refueling** your craft?

- A - Close all ports, windows and hatches
- B - Ask your passengers to remain onboard the craft
- C - Operate your engine ventilation system (blower)
- D - Fill the tank until fuel reaches the top of the filler neck

12) What is the name given to **loose or broken** water caused by the action of a boat's **propeller**?

- A - Wake
- B - Wash
- C - Cavitation
- D - Run-off

13) What is the **purpose** of a **Cardinal Buoy**?

- A - Identifies low head dams
- B - Signifies the entrance to a canal
- C - Marks the junction of two lanes of navigation
- D - Identifies safe water on the north, south, east or west side

14) What **colour** is a **Starboard-Hand Day Beacon**?

- A - Green
- B - Red
- C - Yellow and black
- D - Green and Black

15) What is the **minimum approved length** of a **Buoyant Heaving Line**?

- A - 25 metres
- B - 10 metres
- C - 15 metres
- D - 5 metres

16) What are the **symptoms** of **early stage Hypothermia**?

- A - The victim will be confused and sleepy
- B - The victim will exhibit an irregular heartbeat
- C - The victim will lack co-ordination
- D - The victim will exhibit slurred speech

17) What is the best method to **treat** a person in the **final stage of Hypothermia**?

- A - Rub the victim's hands and legs
- B - Provide hot liquids to the victim
- C - Remove the victim from wet clothing and cover them with a warm blanket
- D - Immediately signal your need for assistance and head for shore

18) **Navigation rules** are governed by which one of the following?

- A - The Collision Regulations
- B - The Criminal Code of Canada
- C - The Small Vessel Regulations
- D - The Charts and Nautical Publications Regulations

19) What information is provided on a vessel's **Capacity Plate**?

- A - The recommended engine size for optimum performance
- B - The dry weight of the vessel
- C - The recommended gross load that can be carried in the vessel
- D - The minimum recommended engine size

20) What does it mean when an operator repeats "**Pan, Pan**" over a VHF radio?

- A - The operator has run out of fuel
- B - The operator's vessel is sinking
- C - The operator requires assistance
- D - The operator's vessel has caught fire

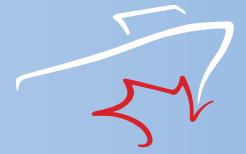


- 21) What is the maximum **lifespan** of a **flare**?
- A - 2 years
 - B - 3 years
 - C - 5 years
 - D - 4 years
- 22) Why is it important to **practice rescue procedures**?
- A - To ensure you are able to respond effectively in an emergency
 - B - It is required by the Collision Regulations
 - C - It is mandatory under the Criminal Code of Canada
 - D - You do not need to practice rescue procedures
- 23) Which one of the following is most likely to cause a **compass** to give a **false reading**?
- A - Using the compass while below deck
 - B - Using the compass in close proximity to a VHF radio
 - C - Using the compass in close proximity to a flashlight
 - D - Using a compass in poor weather conditions
- 24) What should a boater do when **loading equipment** onboard?
- A - Stow the equipment as close to the bow as practicable
 - B - Consider the total weight of gear, fuel, passengers, and equipment
 - C - Refer to the vessel's registration for capacity limits
 - D - Consider the horsepower of the engine
- 25) What should you do with a **ripped Lifejacket**?
- A - Have it repaired immediately
 - B - Only repair it if absolutely necessary
 - C - Replace it
 - D - Use it only as a spare Lifejacket
- 26) What is the best method for **cleaning** a **PFD**?
- A - Use strong detergent and water
 - B - You should only dry clean a PFD
 - C - Wash in a household washing machine
 - D - Use mild soap and water
- 27) What **action** should you take if you are the **stand-on vessel**?
- A - Maintain your course and speed
 - B - Steer well clear of other vessels
 - C - Immediately steer to port
 - D - Immediately steer to starboard
- 28) What is the purpose of a **Bifurcation Buoy**?
- A - Identifies an isolated danger
 - B - Marks a head dam
 - C - Marks the junction of two or more channels
 - D - Used to signal a "diver-down"
- 29) What type of vessel has the **right-of-way** in a **narrow** channel?
- A - Non-powered craft
 - B - Less manoeuvrable craft
 - C - Power-driven craft less than 20 m in length
 - D - Sail-driven craft less than 20 m in length
- 30) What name is given to sustained winds of **15 to 19 knots**?
- A - Light winds
 - B - Low winds
 - C - Strong winds
 - D - Moderate winds



- 31) All vessels should be equipped with an **emergency kit**. In what **location** should it be **stowed**?
- A - Where it is easily accessible
 - B - Close to the stern of the craft
 - C - Close to the bow of the craft
 - D - Doesn't matter
- 32) According to the Collision Regulations, what is the correct **definition** of a **"pleasure sailing vessel"**?
- A - Any vessel that is equipped with a sail
 - B - Any vessel that is capable of sailing
 - C - Any vessel operating by sails alone
 - D - Any vessel not equipped with an engine
- 33) In order to **steer a PWC** you need which of the following?
- A - A moderate amount of arm strength
 - B - To apply throttle
 - C - To lean into the corner
 - D - Immediately slow down
- 34) According to the Collision Regulations, what should you do if another **power-boat** approaches you from the **port (left)** side?
- A - Maintain your course and speed
 - B - Immediately steer to starboard
 - C - Speed up and pass in front of the other boat
 - D - Steer well clear of the other boat
- 35) What is the **first action** you should take when a pleasure craft **capsizes**?
- A - Immediately signal your need for assistance using a distress signal
 - B - Swim to shore if your within 50 m of the shoreline
 - C - Put on a personal flotation device
 - D - Climb onto the overturned craft
- 36) Which vessel must change course if a **power-boat** and **sailboat** approach each other in open water?
- A - The power-boat must change course
 - B - The sailboat must change course
 - C - The vessel to the windward side must change course
 - D - The vessel with the wind on its starboard side must change course

Answer Key



Module 1 Boating in Canada

- 1) True
- 2) False
- 3) False
- 4) A
- 5) B
- 6) B
- 7) D
- 8) B
- 9) B
- 10) B

Module 2 Boating Basics: Equipment and Terminology

- 1) True
- 2) False
- 3) False
- 4) C
- 5) B
- 6) A
- 7) D
- 8) B
- 9) C
- 10) C

Module 3 Before Heading Out

- 1) False
- 2) True
- 3) True
- 4) A
- 5) B
- 6) A
- 7) B
- 8) C
- 9) A
- 10) B

Module 4 Operating a Boat

- 1) True
- 2) True
- 3) False
- 4) B
- 5) A
- 6) B
- 7) C
- 8) C
- 9) A
- 10) D

Answer Key

Module 5 Navigation and Right-of-Way Rules

- 1) False
- 2) True
- 3) False
- 4) A
- 5) B
- 6) C
- 7) D
- 8) A
- 9) B
- 10) C

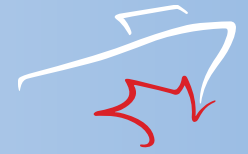
Module 6 Emergency Response

- 1) True
- 2) False
- 3) True
- 4) C
- 5) A
- 6) B
- 7) B
- 8) A
- 9) B
- 10) A

Practice Exam

- | | |
|-------|-------|
| 1) C | 25) C |
| 2) D | 26) D |
| 3) D | 27) A |
| 4) A | 28) C |
| 5) A | 29) B |
| 6) B | 30) D |
| 7) A | 31) A |
| 8) C | 32) C |
| 9) D | 33) B |
| 10) B | 34) A |
| 11) A | 35) C |
| 12) B | 36) A |
| 13) D | |
| 14) B | |
| 15) C | |
| 16) D | |
| 17) C | |
| 18) A | |
| 19) C | |
| 20) C | |
| 21) D | |
| 22) A | |
| 23) B | |
| 24) B | |

Glossary



Abaft The direction towards the stern or near the back of the pleasure craft.

Abeam At right angles to the keel of the pleasure craft, but not on the pleasure craft.

Abreast Side by side; by the side of the craft.

Above Deck On the deck.

Adrift Loose, not on moorings or towline.

Aft Towards the rear of the pleasure craft.

Aground Touching or fast to the bottom.

Ahead The direction in front of the bow of a pleasure craft. The position pointing forward of a pleasure craft.

Aids to Navigation Markers on land and sea which enable navigators to avoid danger, determine their course, and fix their position. Aids to navigation are external to a pleasure craft and advise the operator of the location of the best or preferred route.

Alee Away from the direction of the wind. Opposite of windward.

All-round light A light showing an “unbroken light over an arc of the sky-line of 360 degrees.”

Aloft Above the deck of the boat.

Amidship In or toward the center of the boat. Halfway between the front (bow) and back (stern) of a boat.

Anchor Line A line used to hold a vessel fast to the anchor.

Anchorage A suitable place for anchoring in relation to the wind, seas and bottom.

Astern Directly behind the back of the craft. The position pointing behind the pleasure craft.

Athwartships At right angles to the centreline of the boat.

Beam The widest part of a craft measured from side to side.

Bearing The direction of an object (vessel, buoy, etc.) from an observer; bearings can be visual, by radio, or by radar.

Below Beneath or below deck.

Bilge The lowest point of a vessel's interior hull.

Blower A device that blows fuel vapors trapped inside the bilge to the outside. In accordance with the Construction Standards for Small Vessels, “enclosed gasoline engine and fuel tank compartments must be fitted with a blower and an under way ventilation system.” The Small Vessel Regulations “require the blower to be operated for at least four minutes immediately before every start-up” (if your boat is so equipped).

Boat A general term for a waterborne vehicle smaller than a ship. The terms pleasure craft, vessel, or power boat may also be used.

Blue Flashing Light Identifies a government operated vessel. Can include: the Canadian Coast Guard, the RCMP, Search and Rescue (SAR) or the Department of Fisheries and Oceans (DFO).

Bow The forward part of a pleasure craft.

Bow Line A docking line leading from the bow. A bow line prevents the vessel from moving astern.

Bow Lights Navigation lights at the bow of the craft as specified in the *Collision Regulations*. A red light indicates the port side of the craft and the green light indicates the starboard side of the craft. Bow lights must be in use from sunset to sunrise or in restricted visibility.

Bridge The location from which a vessel is steered and its speed controlled. Considered to be the “Control Station”.

Buoy An anchored float used for marking a position on the water and identifies the best direction for a craft to travel. A buoy can mark a hazard, and in certain cases, can be used for mooring.

Buoyant Heaving Line A floating line not less than 15 metres in length used to help an individual in distress. A buoyant heaving line is required equipment on all Canoes, Kayaks, Rowboats, Rowing Shells, PWCs, unpowered crafts up to 6 m in length, and all powered vessels of any length.

Capacity Plate A metal placard (plate) permanently mounted on a vessel by the manufacturer. The capacity plate describes the total weight limit allowed onboard, the total number of adults allowed onboard and the maximum horsepower rated for the craft. It also identifies that the boat complies with the Construction Regulations.

Capsize To turn over.

Cast Off Undo mooring lines in preparation for departure.

Catamaran A twin-hulled boat, with hulls side by side.

CCG Canadian Coast Guard.

Chart A sea and/or in-land waterway map for use by mariners and operators to assist in navigation. Charts identify water depths, underwater hazards, traffic routes, navigation aids, anchorage areas, and adjacent coastal areas. Charts are published by the Canadian Hydrographic Service, Department of Fisheries and Oceans.

Chine The intersection of the bottom and sides of a flat or v-bottomed boat.

Chock A fitting through which anchor or mooring lines are led. Usually U-shaped to reduce chafing of the mooring/anchor lines.

Cleat A fitting (usually metal or wood and anvil-shaped) to which lines are made fast.

Cockpit An opening in the deck from which the boat is controlled.

Course The direction in which a boat is steered.

Compass A tool used to indicate direction and aids the operator of a pleasure craft in finding bearing. The needle in a compass points to magnetic north, although it may be influenced by close proximity to metallic and/or electrical devices and provide false information.

Crossing Occurs when two vessels meet or cross each other’s path. The boat to the right has the right-of-way and is called the Stand-On-Vessel. The other boat is the Give-Way-Vessel and must yield and change its course to the right and cross behind the Stand-On-Vessel.

Cuddy A small shelter cabin in the interior of a boat.

Current The horizontal movement of the water in a specific direction.

Danger Zone The area encompassed from dead ahead of a vessel to just abaft the starboard beam. An operator must stand clear of any boat in the “danger zone”.



Dead Ahead Directly Ahead.

Dead Astern Directly Aft.

Deck A permanent covering over a compartment, hull or any part thereof. Top floor of a craft where you can walk or stand.

Dinghy A small open boat. A dinghy is often used as a tender for a larger craft.

Displacement The weight of water displaced by a floating vessel, thus, a boat's weight.

Displacement Hull A type of hull that plows through the water, displacing the weight of water equal to its own weight, even when more power is added.

Dock A protected water area in which vessels are secured. The term is often used incorrectly to denote a pier or a wharf.

D.O.T Department of Transport, Canada.

Downwind A direction leeward, with the wind.

Draft The minimum depth of water in which a pleasure craft will float freely.

Ebb A receding current.

Fathom Six feet.

Flare A pyrotechnic signaling device used when a boater is in distress.

Flame Arrestor A safety device made of mesh construction to prevent explosion from engine exhaust backfire.

Fenders Various devices (typically hollow cylinders constructed of flexible plastic or rubber) that are used to cushion shocks and protect the sides of pleasure craft.

Freeboard The minimum vertical distance from the surface of the water to the gunwale.

Fore Towards the front of the craft.

Galley The kitchen area of a craft.

Gale Warning Defined as winds with a sustained wind speed of 34 to 47 knots (63 to 87 km/h) as defined by the Meteorological Service of Canada. Water surface conditions during a gale warning are extremely rough with waves of six to nine metres in height.

Give-Way-Vessel A term used to describe the vessel which must yield in meeting, crossing, or overtaking situations. The Give-Way-Vessel must alter its course by changing speed and direction in order to avoid collision with the stand-on vessel as indicated in the Collision Regulations, Rule 16.

Global Positioning System A form of position finding using radio transmissions from satellites with sophisticated on board automatic equipment.

Gunwale The upper edge of each side of the hull of a craft.

Hatch An opening in a boat's deck fitted with a watertight cover.

Heading The direction in which a vessel's bow points at any given time.

Headway The forward motion of a boat. The opposite of sternway.

H.E.L.P Heat Escape Lessoning Position. This position can help preserve the body's core temperature and reduce the effects of hypothermia. You must be wearing a PFD to perform the H.E.L.P position. Cross your arms tightly against your chest and draw your knees up to chest position. Maintain this position and avoid any unnecessary movement that will increase heat loss. The H.E.L.P position can help increase survival time by up to one third.

Huddle Position The Huddle Position is another position that can help to preserve the body's core temperature and reduce the effects of hypothermia. This position is achieved with several people wearing PFDs. Everyone forms a circle so that each person is side by side with arms linked around each other's shoulders. Legs should be drawn up to the chest and linked with each other.

Hull The main body of a pleasure craft, excluding masts, sails, rigging, machinery and equipment.

Hypothermia A condition that occurs when there is a drop in core body temperature below normal levels. Hypothermia may occur with prolonged exposure to abnormally low temperatures, cold air, wearing wet clothes or being immersed in cold water.

Inboard More toward the centre of a vessel; inside; a motor fitted inside a boat.

Impeller A blade (much like a propeller) that rotates inside a jet pump (housing), forcing water out a nozzle in order to move the craft. The form of propulsion found on Personal Watercraft.

Keel The centreline of a boat running fore and aft; the backbone of a vessel.

Lee The side sheltered from the wind.

Leeward The direction away from the wind. Opposite of windward. The side of a sail (or other object) that is sheltered from the wind.

Lifejacket A Lifejacket is a personal flotation device that is designed to turn an unconscious person face-up in the water. In Canada, Lifejackets must be an approved type with a stamp or label from the Department of Transport Canada or Canadian Coast Guard, indicating that it has been approved.

Light Winds Winds with a wind speed less than 12 knots (22 km/h) (as defined by the Meteorological Service of Canada) and water surface conditions that are "calm" or have waves up to 1.5 metres.

Load The maximum weight a vessel is designated to carry. Includes people, motor, fuel and all equipment.

Lock A structure having moveable gates for ships and boats to pass up and down different water levels in a canal, river, or tidal basin.

Look-Out As outlined in the Collision Regulations, the operator of every vessel is required "to maintain a constant look-out." Operators are "required to use every available means, including radar and radio (if so equipped), to determine whether there is any risk of collision with another vessel."

Masthead Light A white light "placed over the fore and aft center line of a pleasure craft showing an unbroken light over an arc of the horizon of 225 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on either side of a pleasure craft."

Mayday A VHF or radiotelephone distress signal. Used when a craft and crew are in a hazardous or life-threatening situation.

Midship Approximately in the location equally distant from the bow and stern.

Moderate Winds Moderate Winds are defined as "Winds with a wind speed of 12 to 19 knots (22 to 35 km/h) (as defined by the Meteorological Service of Canada) and water surface conditions that are rough with waves from one to three metres high."

Mooring To fasten or secure a boat to a mooring buoy, pier or fixed point.



Nautical Mile One minute of latitude; approximately 6076 feet about 1/8 longer than one mile (5280 feet).

Navigation Conducting a boat safely from one point to another.

Navigational (Operating) Rules The laws and regulations governing the movement of vessels in relation to each other, including right-of-way rules. Established by the Collision Regulations and apply to “every vessel in all navigable waters.”

Operator “The person in effective charge and control of a pleasure craft and who is responsible for the craft.”

Outboard A detachable engine with a shaft and propeller mounted on a boat’s transom.

Overboard Over the side of the boat.

Overtaking Said to happen when a vessel is passing another from behind.

Painter Mooring line attached to bow in order to secure the vessel.

“Pan Pan” A VHF radio or radiotelephone distress signal used to designate a non-life threatening emergency.

Personal Flotation Device A personal flotation device (PFD) is a device which, when worn properly by the user, uses flotation to keep the wearer’s chin above the water. In Canada, PFDs must be an approved type with a stamp or label from the Department of Transport, Canada or Canadian Coast Guard indicating that it has been approved.

Personal Watercraft (PWC) A pleasure craft with an enclosed hull and powered by an enclosed jet-propulsion system.

Planing A boat is said to be planing when it moves over the top of the water rather than through the water.

Planing Hull A type of hull shaped to glide across the surface of the water when power is applied.

Pleasure Craft “A boat, a ship, a vessel, or any other description of water craft that is used exclusively for pleasure and does not carry passengers or goods for hire, reward, remuneration or any object of profit.”

Port The left side of a pleasure craft looking forward.

Power Driven Vessel (Powerboat) A pleasure craft that is propelled through the water by a motor or by propelling machinery as described in Collision Regulations Rule 3.

Pre-Departure Checklist A checklist that aids a pleasure craft operator in determining the seaworthiness of his/her vessel and his/her preparedness for a trip on the water. The use of a pre-departure checklist can help to avoid situations which could lead to emergencies.

Propeller Blades attached to an engine shaft that rotates. The movement of the blades forces water back and moves the craft forward. Also called a screw.

Reaching Assist A device used to help you reach a person in distress.

Recommended Gross Load Capacity A vessel’s gross load capacity is indicated by the Capacity Plate which may be affixed to the hull of the craft. The gross load capacity identifies the total weight that can be safely carried in the craft and includes the weight of persons, equipment, stores, fuel, motor and steering controls. The gross capacity is indicated with the “equivalent number of adult persons.”

Rigging The wire rope, rods, lines, hardware, and other equipment that support and control the spars and sails; standing rigging is semi-permanent once set-up; running rigging is continually adjusted as the sails are hoisted, doused, trimmed, or reefed.

Right-of-Way The right of a vessel to cross in front of other vessels.

Ring Buoy (Lifebuoy) A circular buoy “with an outside diameter of 610 mm or 762 mm that is attached to a buoyant line of not less than 15 m in length.”

Rudder A vertical plate or board affixed at the stern of a vessel for steering.

Running Lights Lights required to be shown on boats underway between sunset and sunrise and during periods of reduced visibility.

Rode A combination of rope and chain attached to an anchor.

Sailing Vessel “Any vessel powered by wind and sail, provided that propelling machinery, if fitted, is not being used.” When a motor or propelling machinery is being used, the vessel is considered to be a power-driven vessel.

Safe Speed “A speed that a vessel can proceed and take the proper and effective action” as described in Collision Regulations, Rule 6.

SAR Search and Rescue.

Seamanship All the arts and skills of boat handling, ranging from maintenance and repairs to piloting, sail handling, and rigging.

Seaworthy A boat or a boat’s gear able to meet the usual sea conditions.

Secure To make fast.

Sidelights “A green light on starboard side and a red light on port side, each

showing an unbroken light over an arc of the horizon of 112.5 degrees and so fixed as to show the light from ahead to 22.5 degrees abaft the beam on its respective side.”

Small Craft Warning “Sustained wind speeds in the range of 20 to 33 knots (37 to 61 km/h).” Strong winds causing rough water unsafe for pleasure craft.

S.O.S. Internationally recognized distressed signal that can be sent by sound signal, light or radio. It is produced by signaling three short blasts, three long blasts, and three short blasts.

Stand-On-Vessel That vessel which has right-of-way during a meeting, crossing, or overtaking situation. It is the vessel “which maintains course and speed” as described in Collision Regulations, Rule 17.

Starboard The right side of a boat when looking forward.

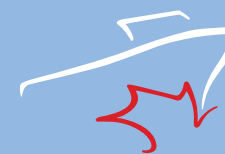
Stern The back part of a boat.

Stern Light A “white light placed as near as possible to the stern of a vessel. It shows an unbroken light over an arc of the horizon of 135 degrees and so fixed as to show the light 67.5 degrees from right aft on each side of a pleasure craft.”

Stern Line The docking line leading from the stern.

Storm Warning “Sustained wind speeds in the range of 48 to 63 knots. (89 to 117 km/h) inclusive” (as defined by the Meteorological Service of Canada). Water surface conditions during a Storm Warning advisory are extremely rough and hazardous. Storm Warnings are issued by Environment Canada.

Strong Winds Strong winds are defined as “Winds with sustained wind speeds in the range of 20 to 33 knots (37 to 61 km/h)” (as defined by the Meteorological



Service of Canada). Water surface conditions during a strong winds advisory are very rough with waves three to six metres in height.

Swamp To fill with water, but not settle to the bottom.

Throttle A mechanism used to regulate the flow of fuel, and thus the speed, of an internal combustion engine.

Tide The periodic rise and fall of water level in the oceans. Occurs every 12 hours and is caused by the gravitational pull of the moon.

Tiller A bar or handle for turning a boat's rudder or an outboard motor.

Topographical Map A map depicting land areas. Describes natural and artificial features of the land area including elevation contours, shoreline rocks, land features above the water, and cultural features. Although Topographical Maps are used primarily for the general public on the land, they can be used to aid the operator when nautical charts are unavailable. Topographical Maps are published by Natural Resources Canada and other provincial authorities.

Towing Assisting a vessel unable to manoeuvre by pulling or towing

Transom The stern cross-section of a square sterned boat. Forms the back of the boat.

Trim The fore and aft balance of the craft and its horizontal position in the water. Optimum trim is achieved if the gunwales are parallel to the water.

Trip Plan A document that describes both your vessel and travel plans on the water. Operators should file a trip plan with a responsible person - it can be used in case of emergency to aid in locating a missing craft.

Underway A vessel that is in motion. A "pleasure craft that is not anchored, made fast to the shore or aground."

Vessel "Every description of a water craft, used or capable of being used as a means of transportation in the water."

Vessel License You're craft may require a vessel license. A vessel license number can be obtained by completing an Application for Vessel License. A vessel license number must be displayed on the side of a pleasure craft in block characters no less than 7.5 cm in height. The license number must be in a contrasting colour to that of the hull and should be placed on both sides of the hull.

VHF Radiotelephone Very High Frequency radio.

Wake The moving waves, track or path that a boat leaves behind it when moving across the water: "The disturbed column of water around and behind a moving pleasure craft which is set into motion by the passage of a pleasure craft."

Wash "The loose or broken water left behind a pleasure craft as it moves along and includes the water thrown aft by the propeller."

Windward Toward the direction from which the wind is coming.

Please note that items in quotations have been referenced from the CCG Boating Safety Course Standard or the Collision Regulations.

Resources

Search and Rescue

Pacific Coast

Joint Rescue Coordination Centre Victoria
1-800-567-5111
1-250-363-2333

Great Lakes and Arctic

Joint Rescue Coordination Centre Trenton
1-800-267-7270
1-613-965-3870

St. Lawrence River

Maritime Rescue Sub-Centre Quebec
1-800-463-4393
1-418-648-3599

Newfoundland & Labrador Coast

Maritime Rescue Sub-Centre St. John's
1-800-563-2444
1-709-772-5151

Maritime Coast

Joint Rescue Coordination Centre Halifax
1-800-565-1582
1-902-427-8200

Marine Pollution Reporting

Newfoundland:	1-800-563-2444
P.E.I. – Nova Scotia – New Brunswick:	1-800-565-1633
Quebec:	1-800-363-4735
Ontario & Central Canada:	1-800-265-0237
British Columbia & Yukon:	1-800-889-8852

Boating Safety Info Line

1-800-267-6687
Web: <http://www.ccg-gcc.gc.ca>
Email: obs-bsn@dfo-mpo.gc.ca

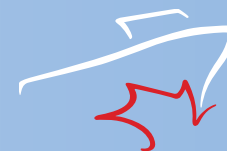
Charts and Nautical Publications

Canadian Hydrographic Service

Chart Distribution Office
Ottawa, Ontario
(613) 998-4931
Web: <http://www.chs-shc.dfo-mpo.gc.ca>

Canadian Hydrographic Service

Chart Distribution Office
Institute of Ocean Services
Sidney, British Columbia
(250) 363-6358
Web: <http://www.pac.dfo-mpo.gc.ca/sci/>



Compliance Plates

Canadian Coast Guard

Office of Boating Safety
200 Kent Street, 5th Floor
Ottawa, Ontario
K1A 0E6

Phone: 1-800-267-6685

Fax: 1-613-991-1313

Web: <http://www.ccg-gcc.gc.ca>

Email: obc@ccgrser.org

British Columbia, Yukon Territory

Office of Boating Safety, Pacific Region
25 Huron Street
Victoria, British Columbia
V8V 4V9

Alberta, Saskatchewan, Manitoba, Ontario, Northwest Territories, Nunavut

Office of Boating Safety, Central and Arctic Region
201 N. Front Street, Suite 703
Sarnia, Ontario
N7T 8B1

Quebec

Office of Boating Safety Laurentian Region
2nd Floor
101 Boulevard Champlain
Quebec City, Quebec
G1K 7Y7

New Brunswick, Nova Scotia, P.E.I

Office of Boating Safety Maritimes Region
Foot of Parker Street, P.O. Box 1000
Dartmouth, Nova Scotia
B2Y 3Z8

Newfoundland

Office of Boating Safety
Northwest Atlantic Fisheries Centre (NAFC)
East White Hills Road
P.O. Box 5667
St. John's, Newfoundland
A1C 5X1

Weather Forecasts

Channel 21B, 25B and 83B on the Atlantic Coast and Great Lakes

Channel 21B, and Wx1, 2, 3 on the Pacific Coast

VHF broadcasts from Weatheradio Canada (Environment Canada)

Web: http://www.ec.gc.ca/weather_e.html

Alphabet Flags & Numerical Pennants



Alpha
Diver Down,
Keep Clear



Bravo
Dangerous Cargo



Charlie
Yes



Delta
Keep clear



Echo
Keep clear



Foxtrot
Disabled



Golf
Want a pilot



Hotel
Pilot onboard



India
Altering course to port



Juliet
On fire;
Keep clear



Kilo
Desire to
communicate



Lima
Stop instantly



Mike
I am stopped



November
No



Oscar
Man overboard



Papa
About to sail



Quebec
Request pratique



Romeo



Sierra
Engines going astern



Tango
Keep clear of me



Uniform
Standing into danger



Victor
Require assistance



Whiskey
Require medical
assistance



Xray
Stop your intention



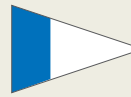
Yankee
Am dragging anchor



Zulu
Require a tug



1st Repeat



2nd Repeat



3rd Repeat

1



2



3



4



5



6



7



8



9



0



Trip Plan

Personal Information

Owner's Name: _____
Address: _____
Phone Number: _____

Vessel Information

Vessel Name and License Number: _____
Vessel Type: Sail Power PWC Canoe/Kayak Other
Colour: Hull: _____ Deck: _____
Size: _____
Type of Engine (if applicable): _____
Other distinguishing features: _____
Type of Radiotelephone: HF VHF MF
Channel Monitored: _____
Number and Type of Flares: _____
Type of safety equipment carried on board: _____

Trip Details

Number of persons on board: _____
Launch Point: _____ Date and Time: _____
Proposed Route: _____

Stop-Over Location(s): _____ Date and Time: _____
Arrival Point: _____ Date and Time: _____

Emergency Contacts

Local Search and Rescue Phone Number: _____
Person to contact in case of emergency: _____
Phone Number: _____

Pre-Departure Checklist

Equipment

- I have properly maintained my pleasure craft and its components
- I have all required safety equipment on board and in good working condition
- I have enough approved flotation devices of the correct size for each person on board
- I have an emergency repair kit on board with spare parts suitable for my type and size of craft/engine
- I have a first aid kit on board including dry clothing, water, sun protection, and emergency rations
- I have all required distress equipment on board and know how to use it properly
- I have an effective, properly functioning means of communication (such as a cell phone or VHF radio)
- I have stowed equipment in appropriate, accessible locations on board my craft

Preparation

- I have enough fuel for the trip - 1/3 out, 1/3 back, 1/3 in reserve
- I have thoroughly checked the condition of my craft, its engine and fittings
- I have completed a trip plan and filed it with a responsible individual
- I have reviewed emergency and safety procedures and practiced the proper techniques
- I have reviewed each passenger's responsibilities before departing
- I have explained the location and correct use of required safety equipment with each passenger

Waterways and Weather Conditions

- I have the marine charts and/or nautical publications for the area in which I'll be boating
- I have researched and know the location of any local hazards
- I know of any boating restrictions that may apply in the area in which I'll be boating
- I have checked the weather forecast
- I know of or have marked the location of safe harbours/marinas

This course has been accredited by the Canadian Coast Guard strictly on the basis that it meets the minimum requirements of basic boating safety knowledge set out in the Canadian Coast Guard Boating Safety Course Standard



Get Your Pleasure Craft Operator Card!

All operators of power-driven pleasure craft and personal watercraft (PWCs) will need to obtain a Pleasure Craft Operator Card. The BOATsmart! Canada Safe Boating Manual is Canadian Coast Guard Accredited and includes everything you need to know to get certified! Once you're ready to take the exam, call BOATsmart! Canada toll free at 1-877-792-EXAM for a testing location near you.

THIS GUIDE INCLUDES INFORMATION ON:

-  *Canadian Boating Rules and Regulations*
-  *Properly Equipping Your Boat*
-  *Operating Your Boat Safely*
-  *Ensuring the Safety of Your Passengers*
-  *Understanding Navigational Aids*
-  *Properly Maintaining Your Boat and Equipment*
-  *Emergency Response and Distress Signals and More!!*

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