



**NATIONAL BOATING  
SAFETY SCHOOL**

# **COURSE MANUAL**

TO OBTAIN THE PLEASURE  
CRAFT OPERATOR CARD  
March 2<sup>nd</sup>, 2011

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*This boating safety course manual has been approved by Transport Canada strictly on the basis that it meets the minimum requirements of basic boating safety knowledge set out in Transport Canada's Boating Safety Course and Test Syllabus. (TP14932E)*

This handbook is a reference guide for the Boating Safety Course in order to obtain the Pleasure Craft Operator Card as set out by Transport Canada. The text can be referred to during your course or can prepare you for the test. It can even be used as a personal reference later on board your boat. It has been drawn up in accordance with Transport Canada's safe boating guide. If you have any comments regarding the contents of this handbook or the course, do not hesitate to contact the National Boating Safety School. Enjoy your course!

This text is dedicated to all recreational pleasure boaters so that all may safely benefit from our wonderful waterways through Canada.

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## OPERATOR COMPETENCY

As of September 15, 2009, **everyone** who operates a motorized pleasure craft must carry proof of competency on board at all times. Proof of competency is not required for a pleasure craft without a motor.

The operator competency requirements do not currently apply in the Northwest Territories and Nunavut.

Proof of competency can take one of three different forms:

- A Pleasure Craft Operator Card (PCOC);
- Proof, such as a course certificate, that you have successfully completed a boating safety course in Canada before April 1, 1999; or
- A completed rental boat safety checklist.

The boat rental safety checklist is a valid proof of competency in the case of a person who is renting a boat from a rental agency to be used with a motor, and does not have a pleasure craft operator card or other recognized certificate. The renter must initial each box/statement (15 of them) on the form as the subject is covered by the rental operator or outfitter. This completed and duly signed form (customer and renter) must be carried on board for the duration of the rental.

The Pleasure Craft Operator Card is good for life. Remember to make a photocopy of your card as soon as you get it so it can be replaced if it is lost. To replace a lost card, contact us directly.



Boaters must have proof of competency on board at all times. The original Pleasure Craft Operator Card (PCOC) must be carried on board. However, a copy of any other proof of competency is accepted.

## NOTE FOR HOLDERS OF MARINE SAFETY CERTIFICATES

If you hold any certificate on the List of Marine Safety Certificates Recognized for the issuance of a Pleasure Craft Operator Card, you are not required to have the proof of competency described above. You must simply make sure you carry proof of certification on board. Proof of certification could be the original document or a copy of the certificate. To consult the list, please visit [www.boatingsafety.gc.ca](http://www.boatingsafety.gc.ca).

## TAKE A BOATING SAFETY COURSE

Whatever your age or experience, you should take a boating safety course. Whether you are new to boating or you are an experienced pro, taking a course will prepare you for great times out on the water. Our course covers many important boating safety topics such as:

- Rules and regulations that apply to pleasure crafts;
- Preparing for a trip;
- How to share waterways; and
- What to do in an emergency.

While not recommended, you may take the test for a Pleasure Craft Operator Card without taking a course by contacting us directly.

## AGE-HORSEPOWER RESTRICTIONS

Youths under 16 years of age may not exceed certain limits of horsepower unless they are accompanied by someone 16 years or older and directly supervised by them.

**It is strictly forbidden for anyone less than 16 years of age to operate a personal watercraft even if accompanied by someone 16 or older.**

You can determine the minimum age for driving a motorized boat from the chart below.

Age	Horsepower Restrictions
Under 12 years of age with no direct supervision	May operate a boat with up to 10 hp(7.5 kW)
Ages 12 to 16 with no direct supervision	May operate a boat with up to 40 hp(30 kW)
Under 16 years of age, regardless of supervision	May not operate a PWC
16 years of age or older	No horsepower restrictions

These restrictions do not currently apply in the Northwest Territories and Nunavut.

All craft operators must have proof of competency with them while driving a motorized boat. Young people less than 16 years of age must carry proof of competency at all times even when they are supervised.

## PLEASURE CRAFT AND MERCHANT SHIPS

Pleasure Crafts are boats, ships, vessels or all other water crafts that are used exclusively for pleasure and do not carry passengers or goods for hire, remuneration, reward or any type of profit. Merchant ships are generally built according to more rigorous specifications than those of pleasure crafts. They must accomplish harder, more intensive tasks, such as transporting passengers and commercial goods for profit.

## LAWS, REGULATIONS AND CODE

Several laws, regulations and code apply to all pleasure craft operators. An operator who breaks one of these laws, regulations and/or code is subject to penalties and/or fines. Here are some of the laws, regulations and code:

1. Canada Shipping Act 2001;
2. Contraventions Act;
3. Vessel Operation Restriction Regulations;
4. Charts and Nautical Publication Regulations;
5. Collision Regulations;
6. Small Vessel Regulations;
7. Criminal Code of Canada.

For additional information on safe boating please refer to the Transport Canada Safe Boating Guide

### **AS OF SEPTEMBER 2009 ALL OPERATORS OF A PLEASURE CRAFT MUST HAVE A COMPETENCY CARD**

## THE OPERATOR'S LEGAL RESPONSIBILITIES

The person in charge of a craft is called the **Operator**. He/she has many responsibilities for the safety and welfare of the passengers on board as well as to other passing crafts. The operator must know a range of information in order to operate a pleasure craft on the water. Operators must be aware and know the limitations of the vessel they are operating. Similar boats will manoeuvre differently in different weather conditions, or the way they are loaded. The operator must be comfortable operating the boat; this will reduce the risk of being in an emergency situation and possibly risking the safety of people on board. Up-to-date regulations regarding nautical terms and actions must be known as well as weather forecasting.

For example, it is important that all persons on board know the following:

- Location of the personal flotation devices (PFD) or lifejackets;
- The techniques of how to put on the PFD or the lifejackets (on board or in the water);
- The importance of wearing them at all times;
- The location of the emergency equipment kit and fire extinguishers;
- The importance of keeping a low position and to hold on to a rigid part of the craft while moving around on board;
- The importance of keeping hands, arms and legs inside the craft when near the dock; and
- The effect of the motion of the craft, sunlight, waves, wind, sound and alcohol.

***Rescue procedures should be practiced so that each person on board knows  
what to do in case of an emergency and is familiar with:***



1. The purpose and use of the safety equipment;
2. The movement of the pleasure craft; and
3. Tasks to be completed.

The operator must recognize that, in the interest of safety, there are laws and regulations that must be respected. Violations can result in boating incidents and therefore have various assigned penalties. Boaters should understand the civil liability implications of recreational boating.

### **CRIMINAL CODE OF CANADA**

Canada's Criminal Code applies to boating and makes activities like operating a boat while impaired, failing to stop at the scene of an accident and operating a boat that is not seaworthy, crimes.

Operators must recognize that certain behaviour constitutes criminal offences that are punishable (could lead to fines or possible imprisonment) under the Criminal Code while operating a pleasure craft. They are:

- Operating a vessel in a dangerous manner;
- Consumption of alcohol/drugs while operating a vessel;
- Operating a vessel while impaired (alcohol/drugs) or in excess of 80mg;
- Towing water-skiers without a watch or after dark (one hour after sunset to sunrise);
- Failure to stop at the scene of a collision;
- Failure to comply with demand (demand to stop);
- Sending false distress signals;
- Operating an unseaworthy vessel;
- Tying up to a buoy; and
- Operating vessel while disqualified/prohibited.

It is important to remember that all operators must comply with the demands of an enforcement officer (RCMP, provincial and municipal forces and other authorized local authorities) in a police boat. Such demands may include:

- Boarding the vessel;
- Inspecting the vessel;
- Monitoring your boating activities;
- Making sure safety requirements are met;
- Asking for the pleasure card and ID; and
- Asking any other pertinent questions.

Should you not comply to such requests you may be deemed to have failed to comply with demand to stop under the Criminal Code.

Remember that certain behaviours could be considered as infractions under the Criminal Code of Canada. For example; an operator should not operate in a manner dangerous to the public, failure to comply with a demand to stop, operating a vessel while disqualified or prohibited, failure to stop at an accident. He should not pass close to other crafts, thus creating a wake. The operator must navigate cautiously in rough sea conditions or in foggy conditions when visibility is reduced. It is illegal to operate a boat under the influence of alcohol or drugs. Water sports and alcohol do not mix. Alcohol impairs the judgement and the competency of the operator. Furthermore, a pleasure craft operator can be indicted according to the Criminal Code if he takes people on an unseaworthy boat.

## INFRACTIONS - ENFORCEMENT

Since the beginning of the new regulation for Boat Safety on April 1<sup>st</sup>, 1999, it is now possible for a Peace Officer at any level of government to fine someone on the spot, for disregarding one or more of the laws and Regulations. Contrary to the previous regulation, Peace Officers would give a simple warning or a written notice. The judge would determine if a fine was deserved or not.

**The Royal Canadian Mounted Police (RCMP), provincial and municipal police forces and other authorized local authorities enforce the laws that apply to boats. They may inspect (courtesy program) your boat and monitor your boating activities to make sure that requirements are being met. This may include checking for safety equipment, your Pleasure Craft Operator Card and careless operation on the water.**

Here is a list of some boating offences:

- Not having enough approved lifejackets on board;
- Not having the required proof of competency on board;
- Not having the required Pleasure Craft Licence on board;
- Careless operation;
- Speeding;
- Allowing someone under age to operate a boat;
- Operating a boat if you are under age;
- Operating a boat without a working muffler in good condition; and
- Towing someone without a spotter.

## CANADA SHIPPING ACT 2001

The Canada Shipping Act 2001 is the law that, along with its regulations, governs pleasure crafts. It includes the requirements of some international agreements that govern the conduct of all vessels. The most important regulations affecting pleasure crafts under this law include:

- Competency of Operators of Pleasure Craft Regulations;
- Collision Regulations;
- Small Vessel Regulations;
- Vessel Operation Restriction Regulations; and
- Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals.

These and other boating regulations are available at [www.boatingsafety.gc.ca](http://www.boatingsafety.gc.ca)

According to this law, the operator must assist every person who is found at sea and in danger of being lost. If you are involved in an accident, you must absolutely stop to offer assistance to the other craft involved unless it puts your craft and passengers into added danger.

Your name and address as well as the name and address of the owner of the craft must be provided to the owner of the other craft involved. Another rule is that the operator of a craft must watch for signals that indicate distress and need of assistance by others.

### **SMALL VESSEL REGULATIONS**

This regulation explains the minimum safety equipment required on board of the craft according to the length and type of vessel. Moreover, the regulations forbid the navigation of a craft that is not seaworthy under any circumstances. Also, the operator should maintain his pleasure craft and its equipment on a regular basis, to ensure that everything works adequately at all times in order to reduce the risk of possible breakdowns.

### **CHART AND NAUTICAL PUBLICATION REGULATIONS**

Chart and Nautical Publication Regulations recommends that pleasure craft operators have on board Nautical Charts for the area to be navigated. A pleasure craft (not propelled by oars) should have on board with respect to the area, in which the craft is navigated, the most recent editions of:

1. Largest scale charts;
2. Required publications; or
3. Required documents.

An open body of water may seem inviting, but remember that there are no clearly marked traffic lanes on the water. This, as well as the absence of signs that clearly tell us where we are, can make navigation difficult.

To help make navigation safer, it is recommended that you carry the following for each area you plan to boat in:

- The location and type of charted route;
- Shipping routes;
- Lights, buoys and marks;
- Boating hazards; and
- The area's usual boating conditions such as tides, currents, ice and weather patterns.

***If you are operating a boat fewer than 100 gross tons, you do not have to carry these charts, documents and publications on board as long as you know:***

- How to plot a course;
- How to determine your position;
- How to use a compass along with marine charts;
- Electronic navigation equipment;
- References such as tide tables;
- Canada's buoyage system, navigation lights and signals; and
- Notices to Mariners and Sailing Directions.

Avoid potential danger by steering clear of rapids and currents, and be sure not to obstruct commercial navigation in commercial shipping channels.

All pleasure craft operators that navigate less than 30 meters from the shore must comply with the Vessel Restriction Operation Regulations (VORR) regarding their speed close to shore. In certain lakes and rivers, the VORR can limit the maximum horsepower of the engine. They can also limit the navigation on certain bodies of water exclusively to canoes, sailboats, etc. They could also regulate the hours for water-skiing. One must pay attention to all speed limit signs and act accordingly.

If you plan to travel in USA waters, please ensure that you obtain the latest update of Homeland Security requirements as well as possibly nautical charts.

## **COLLISION REGULATIONS**

The Collision Regulations requires that someone must always be on the lookout in order to prevent the risk of collision. The boat should never be left on auto-pilot and the lookout post should never be left unattended. Furthermore, the responsibilities of the lookout person include not only watching, but also listening for warning signals coming from other crafts. The operator of a pleasure craft must apply to the International Regulations to prevent collision at sea and the Canadian modifications on the high seas as well as on the waters connected which are navigable by ships.

The operator must also know the regulations specific to certain waters in Canada and the US.

The operator must assume a visual and auditory lookout at all time.

The operator of a pleasure craft is responsible for taking full advantage of radio and radar as well as of the prevailing circumstances and conditions all around him, including that of other craft and of inclement weather in order to make a complete and accurate judgement of the situation to determine if the risk of collision exists.

The operator of a pleasure craft should always move along at a safe speed so that he would be able to stop at a good distance considering the given conditions especially in reduced or restricted visibility.

## PLEASURE CRAFT LICENSING AND REGISTRATION

Under the Canada Shipping Act 2001 pleasure crafts and vessels must be identified. This allows for search and rescue personnel and other governing agencies to quickly identify your boat in case of emergency. It provides information 24 hours a day, 7 days a week. A Pleasure Craft License is different from a Vessel Registration. A Pleasure Craft License is free but a Vessel Registration has a \$250 fee.

### Pleasure Craft Licensing

All pleasure crafts equipped with a 10 horsepower engine (7.5kW) or higher must be licensed. However, it does not have to be licensed if it has a Vessel Registration. Since November 1<sup>st</sup>, 2010 new procedures have been established to license your craft. A completed application (available through Service Canada, [www.servicecanada.gc.ca](http://www.servicecanada.gc.ca), form #84-0172) must be mailed to the Pleasure Craft Licensing Centre along with a proof of ownership and a signed copy of a valid piece of government-issued identification. The license is good for 10 years; you must have a copy of your Pleasure Craft License on board. Once the license number has been issued for that particular pleasure craft, it will never change. Ownership registration could change but the number follows the new owner. Any change of ownership must be completed within 90 days through Service Canada. The 90 day delay also includes any change of name and address.

The license number must be at least 7.5 cm (3 in) high and displayed on both sides of the bow of your boat, above the waterline. The numbers must be in a contrasting color to that of the hull.

### Registration

Registration is a title system for ownership for vessels. It is similar to the title systems for land registry. Registration of your vessel will allow for approval of its name, mortgage registration and proof of ownership. However it does not have to be licensed if it is registered under the Small Vessel Register, used mainly for small commercial vessels. Every vessel other than a pleasure craft must be registered. Owners of pleasure crafts can register their craft but it is not mandatory (on a voluntary basis).

Registering a vessel is different than obtaining a pleasure craft license. The owner (s) must be qualified to be registered as owner (s); that is, they must be a Canadian citizen or a permanent resident within the meaning of Immigration Laws. It can also be a corporation under the laws of Canada or provincial corporate laws. The vessel must not be already registered in a foreign country. The vessel will be assigned to a Canadian port of registry. There are currently about 48000 vessels registered under that regime in Canada. A person wishing to register a vessel must complete an "Application for Registry" (form #84-0044) and submit it to the Port of Registry. They must provide various data related to the vessel (i.e. tonnage) and produce evidence of ownership. Additional details are available at [www.tc.gc.ca/eng/marinesafety/oep-vesselreg-registration-menu-2311.htm](http://www.tc.gc.ca/eng/marinesafety/oep-vesselreg-registration-menu-2311.htm).

## HULL IDENTIFICATION REQUIREMENTS

All pleasure crafts made in Canada or imported to Canada (with or without motor) must have a Hull Serial Number (HIN) installed by a registered manufacturer, in accordance with the Small Vessel Regulations. The HIN provides an industry standard for identifying vessels. All owners and operators must verify that the HIN is affixed to the vessel. No person can alter, deface or remove a hull serial number. No character on the HIN is to be no less than 6 mm (1/4") in height and width. The HIN is often used to find lost or stolen boats or boats that are subject to a recall. The HIN must be permanently marked on the outside upper starboard (right side) corner of the transom (the boater's rear, flap end/above the water line), or as close to the area as possible. The HIN must also be identified on a second location on the hull, either under a fitting or a piece of hardware, or sometimes inside the vessel, unexposed. The HIN is 12 consecutive alpha-numeric characters long, beginning with the Manufacturer's Identification Code (MIC).

If a pleasure craft does not have a hull identification number, the owner must contact the builder, manufacturer, rebuilder or the importer of the vessel to obtain one.

Example: BDC8AC52F310

MIC: BCD; Hull Number 8AC52; Construction Start Date: F3; Model Year: 10

Note: The HIN can have an optional two character prefix to identify the country of origin (i.e. CA for CANADA).

A manufacturer based in Canada or importing a vessel from the U.S. must have a MIC issued by Transport Canada. A MIC issued by the United States Coast Guard to US manufacturers is recognized in Canada by reciprocal agreement.

## COMPLIANCE NOTICES (formerly called Canadian Capacity Plates / Labels)

A Compliance Notice is a statement from the manufacturer or importer that a vessel has been built according to the construction standards of the Small Vessel Regulation. This Regulations states that, with a few exceptions, all pleasure craft of less than 24 metres and that are fitted or can be fitted with an engine, must have a Compliance Notice permanently attached to the craft. Some exceptions are:






- If a vessel is built or imported by an individual for their personal use;
- A tug;
- A high –powered vessel used exclusively for racing; and
- A vessel that is open construction, not mass produced, not propelled or designed to be propelled by an in-board or stern drive engine, and that has been built based on traditional methods that have been proven safe over the years.

A Compliance Notice is either a glued-on label or a riveted plate, as long as it is easily visible from the helm. No one is allowed to remove or alter a Compliance Notice, or even attach a Compliance Notice that contains incorrect information about the vessel.




### *Vessels measuring up to 6 m long*

This Compliance Notice specifies the maximum gross load capacity that the craft can take in order to navigate safely.

The Compliance Notice is the same for pleasure crafts and non-pleasure crafts. The notice must contain a statement that the craft meets the construction requirements as per the Small Vessel Regulations and identifies the recommended safe limits for the vessel, both in number of persons on board and weight of cargo and engine. The Compliance Notice is slightly different whether it is an outboard engine or if it is an inboard or stern-drive engine. The following are examples of those particular Compliance Notices:

CANADIAN COMPLIANCE NOTICE AVIS DE CONFORMITÉ CANADIEN	
MAXIMUM RECOMMENDED SAFE LIMITS LIMITES MAXIMALES DE SÉCURITÉ RECOMMANDÉES	
	4
	300 kg 660 lbs/lb
	578 kg 1273 lbs/lb
	37 kW 50 HP
	228 kg 502 lbs/lb
<small>THE MAXIMUM RECOMMENDED SAFE LIMITS MIGHT HAVE TO BE REDUCED IN ADVERSE SEA AND WEATHER CONDITIONS. LES LIMITES MAXIMALES DE SÉCURITÉ RECOMMANDÉES PEUVENT DEVOIR ÊTRE RÉDUITES DANS LES CONDITIONS DE MER ET DES CONDITIONS MÉTÉOROLOGIQUES DIFFICILES.</small>	
<b>SAFEBOAT COMPANY INC. (M/C)</b> CITY, PROVINCE, COUNTRY MODEL / MODÈLE: RUNABOUT 555X	
<small>THE MANUFACTURER DECLARES THAT THIS PRODUCT COMPLIES WITH THE CONSTRUCTION REQUIREMENTS OF THE SMALL VESSEL REGULATIONS AS THEY READ ON THE DAY ON WHICH THE CONSTRUCTION OF THE VESSEL WAS STARTED OR ON THE DAY ON WHICH THE VESSEL WAS IMPORTED. LE FABRICANT ATTESTE QUE CE PRODUIT EST CONFORME AUX EXIGENCES DE CONSTRUCTION DU RÈGLEMENT SUR LES PETITS BÂTIMENTS EN VIGUEUR À LA DATE DU DÉBUT DE SA CONSTRUCTION OU DE SON IMPORTATION.</small>	

Pleasure crafts fitted with outboard engine

CANADIAN COMPLIANCE NOTICE AVIS DE CONFORMITÉ CANADIEN	
MAXIMUM RECOMMENDED SAFE LIMITS LIMITES DE SÉCURITÉ MAXIMALES RECOMMANDÉES	
	6
	450 kg 991 lbs
	525 kg 1156 lbs
<small>THE RECOMMENDED SAFE LIMITS MAY HAVE TO BE REDUCED IN ADVERSE SEA AND WEATHER CONDITIONS. LES LIMITES MAXIMALES DE SÉCURITÉ RECOMMANDÉES PEUVENT DEVOIR ÊTRE RÉDUITES DANS LES CONDITIONS DE MER ET LES CONDITIONS MÉTÉOROLOGIQUES DIFFICILES.</small>	
<b>SAFEBOAT COMPANY INC. (M/C)</b> CITY, PROVINCE, COUNTRY MODEL / MODÈLE: RUNABOUT 555X	
<small>THE MANUFACTURER DECLARES THAT THIS PRODUCT COMPLIES WITH THE CONSTRUCTION REQUIREMENTS OF THE SMALL VESSEL REGULATIONS AS THEY READ ON THE DAY ON WHICH THE CONSTRUCTION OF THE VESSEL WAS STARTED OR ON THE DAY ON WHICH THE VESSEL WAS IMPORTED. LE FABRICANT ATTESTE QUE CE PRODUIT EST CONFORME AUX EXIGENCES DE CONSTRUCTION DU RÈGLEMENT SUR LES PETITS BÂTIMENTS EN VIGUEUR À LA DATE DU DÉBUT DE SA CONSTRUCTION OU DE SON IMPORTATION.</small>	

Pleasure crafts fitted with an inboard engine

### *Pleasure crafts measuring more than 6 m long*

The compliance notice contain a statement of compliance indicating that the craft was built to the pleasure craft construction requirement of the Small Vessel Regulations. Here is an example:

CANADIAN COMPLIANCE NOTICE AVIS DE CONFORMITÉ CANADIEN	
<b>SAFEBOAT COMPANY INC. (M/C)</b> CITY, PROVINCE, COUNTRY MODEL / MODÈLE: RUNABOUT 555X	
<small>THE MANUFACTURER DECLARES THAT THIS VESSEL COMPLIES WITH THE PLEASURE CRAFT CONSTRUCTION REQUIREMENTS OF THE SMALL VESSEL REGULATIONS, AS THEY READ ON THE DAY ON WHICH THE CONSTRUCTION OF THE VESSEL WAS STARTED OR ON THE DAY ON WHICH IT THE VESSEL WAS IMPORTED.</small>	
<small>LE FABRICANT ATTESTE QUE CE BÂTIMENT EST CONFORME AUX EXIGENCES DE CONSTRUCTION DES EMBARCATIONS DE PLAISANCE DU RÈGLEMENT SUR LES PETITS BÂTIMENTS, EN VIGUEUR À LA DATE DU DÉBUT DE SA CONSTRUCTION OU À LA DATE DE SON IMPORTATION.</small>	

A pleasure craft measuring more than 6 m long must not be used for non-pleasure purposes unless it has been modified to meet the construction requirements of non pleasure crafts (per Small Vessel Regulations).

A Compliance notice affixed to the vessel and issued by another country or organization (i.e. the U.S. Coast Guard) is not prohibited, but it does not replace the requirement to have a Canadian Compliance Notice attached.

It is important to remember that the maximum safe limits on the compliance notice apply in good weather. The number of people, equipment carried will depend greatly on the weather and the water conditions, therefore the operator must know and respect the safe limits described in the compliance notice.

## **DEFINING THE COMPONENTS OF A CRAFT**

It is important for all boat operators to be able to speak the same language about the safe day-to-day operation of a vessel. This ensures consistency in the use of terminology and can save time in emergency situations and help avoid miscommunications.

It is also important to know all aspects of your vessel and where the safety equipment is located including the personal life saving appliances. The passengers must also be informed of their role and how to assume it in case of emergencies. It is also important to know all aspects of your boat as your safety on the water may depend on your knowledge of your boat, including all its parts, and its role on the water.



In particular, boaters and guests should familiarize themselves with the different flotation devices and how they operate as well as testing them (under supervision) for proper fit and operation so that if needed, they will be able to stay afloat. It is the responsibility of the operator to inform his/her guests of the above before departing. One may also refer their guests to check the manufacturer's instructions on the device.

Remember, in emergency situations or when a situation starts deteriorating, all passengers should wear their personal saving appliance. That is why it is important that they are aware of where they are, how to use them and their role as described above.

*Port* means the left side of the boat when facing forward line and *starboard* means the right side when facing forward.

*Operator* means the person in charge of the manoeuvres and at the controls and responsible for the pleasure craft and the passengers on board.

The *wake* is the disturbed column of water around and behind the craft which is set in motion by the passage of the craft, it's the loose or broken water left behind the vessel as it moves along. This also includes the water thrown off by the propeller.

A *magnetic compass* is essential for safe navigation. It helps the operator to find their way easier when fog is present or when visibility is reduced. It enables a pleasure craft operator to stay on course. Do not forget that a magnetic compass is influenced by the proximity of other metallic or electric devices or materials so that wrong readings may result. Therefore, for a compass to work properly, it must be kept away from things that could influence it, i.e. an electrical device (radio, GPS, etc...).

The *bow* is the forward part of the boat.

The *stern* is the back of the boat.

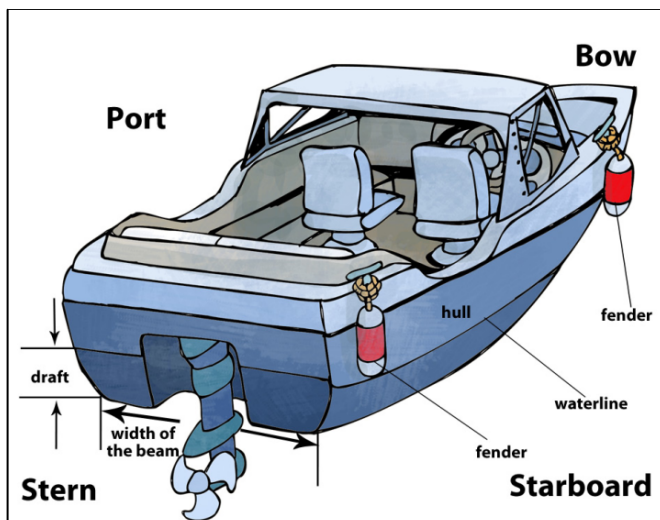
The *waterline* plays two important functions. First of all, it should not be under water. If this line is submerged, it means the craft is overloaded which may be dangerous. If this line is lower on one side than the other, the load of the craft is not evenly balanced; therefore, higher risk of capsizing.

The *draft* is the surface area of the boat that is submerged between the waterline and the bottom of the boat. It is the depth of water which a pleasure craft requires to float freely. It is necessary to remain in water that is deeper than the water draft; otherwise, the craft may run ashore.

The *hull* means the shell or the body of the craft excluding the mast, the sails, the riggings, the motor and the equipment.

The *freeboard* is the distance from the waterline to the upper deck level, measured at the lowest point of sheer where water can enter the boat or ship.

## The components of a craft



## SAFETY

It is critical that you, as a boat operator, recognize behaviours or events that contribute to the majority of boating related incidents and fatalities so that you can avoid them. There are many actions that can be taken to avoid or reduce boating related incidents: wearing a personal floating device; knowing how to recover a person who has fallen overboard; knowing what to do in the event that your watercraft is involved in a collision or is about to capsize; being aware of the impact and effect on the operator if his or her faculties have been reduced by alcohol or drugs; the impact of the operator fatigue and heat stroke. This section and the information throughout the manual are meant to inform you as a boater about the specific on-water danger that all too often goes unacknowledged. This is in order to be better prepared and to be able to deal with on-water dangers and/or emergencies.

As boat operators you must be aware of situations that could jeopardize the safety of people aboard while on the water as situations keep changing and you must adapt to these changing situations. In particular, the operator should recognize that small open boats such as row boats, kayaks, canoes, etc. could be subject to capsizing or taking on water while operating close to them.

In order to assist you in the event of such accidents wearing your PFD will possibly prevent you from drowning. Statistics shows that the vast majority of Canadian boating victims were not wearing their life jacket or personal floating device when they drowned. Don't just have it in the boat, choose one that fits you and wear it.

### Operator fatigue

One must be able to recognize when an operator has driven the vessel too long and must rest (dizziness, nausea, headaches).

## Sunburn

Sunburn is a skin irritation caused by sunlight. Prolonged exposure to the sun without proper protection can cause severe burns. There are different levels of severity of sunburn depending on skin type, duration and intensity of sun exposure.

Symptoms of sunburn are:

- Redness of the skin;
- Itching;
- Appearance of plaques on the skin;
- The peeling of the skin;
- Dehydration;
- Headache;
- Fever;
- Fatigue; and
- Vertigo.

Repeated exposure to sunlight and repeated sunburn can cause skin cancer (melanoma).

## Prevention

There are several ways to prevent sunburn. Here are a few:

- Avoid prolonged exposure to sunlight;
- Use of protective sunscreen;
- Cover yourself with light clothing; and
- Wear a hat and sunglasses.

## Treatments

There is no miracle cure against sunburn. We can try to decrease the inflammation by applying moisturizers containing hydrocortisone or aloe to the burned skin. We can also take anti-inflammatory such as aspirin or ibuprofen. The best treatment against sunburn is still prevention.

## Boat operation while under the influence of alcohol or drugs

Alcohol and drugs intensify the effect of fatigue; the wind and boat motion can adversely affect balance, judgment and reaction time. **Be a cautious boater...don't drink and drive your boat!**

## **SAFETY EQUIPMENT**

Now, we are going to study all aspects of safety regarding a pleasure craft, starting with the required safety equipment on board. Let's begin by identifying each piece of safety equipment required. This is determined by the type and the length of the craft in accordance with the Regulations for small crafts.

It is important to maintain the safety equipment that is on board. This means it must always be kept in perfect working order at all times. It should be carefully checked prior to departure. Also, safety equipment should always be placed in the craft where it can be made quickly available for all passengers.

## **PERSONAL LIFESAVING APPLIANCES**

A very high percentage of people that drown following an accident are not wearing a personal life saving appliance. Even if you have one on board, conditions like rough winds, waves and cold water can make it very difficult, if not impossible, to find it and put it on. Worse yet, if you unexpectedly fall into the water, the boat, with your lifejacket on board, could be too far away to reach. Therefore it is important that everyone that comes on board knows where the personal lifesaving appliances are located and knows how to use them.

Some of the personal lifesaving appliances are a personal flotation device (PFD) or a lifejacket. The law requires that all crafts be equipped with a PFD or a lifejacket of the appropriate size for everyone on board. PFDs must be worn snug, and lifejackets must be worn loose to allow the water to flow under the device in order to turn the body face up.

### **Differences between a PFD and a lifejacket.**

#### **Personal Flotation Device (PFD)**

- A PFD is less bulky and less buoyant than a lifejacket;
- A PFD may not roll a person into a position where their head is out of the water;
- A PFD is preferred for active sports such as canoeing or fishing because it allows for greater movement; and
- Canadian-approved PFDs are available in a variety of colour.

#### **Lifejacket**

A lifejacket will hold the wearer in and upright position and, in most cases, roll a person from the face-down to the face-up position. Canadian-approved lifejackets must be red, orange or yellow.

It is important that a child wear a PFD that corresponds to his or her weight. A child can easily slip out of a PFD that is too large. If it is too small, the person will have difficulty getting out of the water or keeping afloat.

There are some PFDs for various activities such as kayaking, canoeing, fishing, sailing, etc. When buying a PFD, choose the appropriate model for the appropriate sport, therefore take your time to choose the personal flotation device and lifejacket by keeping in mind the following:

1. They should be snug fitting (PFDs) and yet allow freedom of movement for the arms and legs.
2. They should be a proper size for the person (adult sizing for adults, child sizing for child).
3. They should be suitable for particular water activity.
4. The lifejacket should be loose fitting and provide sufficient flotation in order to turn an unconscious person face up in the water (PFDs are not designed to do so).

Many craft owners do not maintain their PFD's. Some people use them as cushion in their crafts. Others use them as fenders to protect their craft against the dock. This could cause the foam on the inside of the PFD to break or the cover to tear and such damage will void their approved status. Some people leave their PFDs in the sun. Ultra violet rays can damage the fabric, therefore it is not recommended. It is very important to take good care of the PFD. They should be cleaned with mild soap and running water. Do not use concentrated detergents and never use petrol chemical products such as varsol, solvents, gas, etc. to wash out a grease stain. Leave it to dry naturally, but never put it in the dryer or exposed to the sun or near any direct heat. They must be stored as soon as they are dried otherwise the humidity could damage the fabric.

A Canadian approved PFDs or lifejacket is no longer approved if it has been repaired or altered in any way. The operator of a pleasure craft should store the personal flotation device and lifejackets inside the craft in a dry well-ventilated place and easy to access.

It is a good habit to periodically inspect and test your PFDs/lifejackets. To test them, here are the steps to follow:

1. Put on the personal flotation device or lifejacket;
2. Go into the water (in a supervised area) until it reaches your chest;
3. Bend your knees;
4. Let yourself float on your back; and
5. Be sure that the PFD or lifejacket keeps your chin above the water and that you are able to breathe comfortably.

Although you can choose between lifejackets and PFDs, keep in mind that lifejackets offer a higher level of protection. Lifesaving cushions are not approved as safety equipment on any boat.

Lifejackets come in red, orange or yellow. This makes you much easier to see in the water. Right now there are three Canadian-approved lifejacket types to choose from:

Source Transport Canada

	SAFETY OF LIFE AT SEA (SOLAS) LIFEJACKETS	STANDARD TYPE LIFEJACKETS	SMALL VESSEL LIFEJACKETS
<b>Performance in the Water</b>	Best Performance – Will turn you on your back in seconds to keep your face out of the water, even if you are unconscious	Slower Performance – Will turn you on your back to keep your face out of the water, even if you are unconscious	Slowest Performance – Will turn you on your back to keep your face out of the water, even if you are unconscious, but may do so more slowly
<b>Sizes (by weight of person)</b>	Available in 2 sizes: - Over 32 kg (70 lbs) - Less than 32 kg (70 lbs)	Available in 2 sizes: - Over 40 kg (88 lbs) - Less than 40 kg (88 lbs)	Available in 3 sizes: - Over 41 kg (90 lbs) - 18 kg (40 lbs) to 41 kg (90 lbs) - Less than 18 kg (40 lbs)
<b>Models Available</b>	Keyhole	Keyhole	Keyhole Vest

To find a list of all Canadian-approved lifejackets and PFDs, check out the Approved Products Catalogue Index at [www.tc.gc.ca](http://www.tc.gc.ca).

***A lifejacket is the best insurance you can have - so find one that suits your needs and wear it!***

If you decide to buy an inflatable PFD you need to know how it works and how to maintain it to be efficient. Find out what activities it is approved for. It is important to know that to be approved, the inflatable PFD must be worn on an open boat. If the boat is not open then you only need to wear it while you are on deck or in the cockpit.

Inflatable PFDs are NOT approved for:

- *Anyone under 16 years old;*
- *Anyone who weighs less than 36.3 kg (80 lbs);*
- *Use on a personal watercraft; or*
- *White-water paddling activities.*

Inflatable PFDs come in two styles:

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

All inflatable PFD approved in Canada are equipped with a tube. If CO2 inflation mechanism does not work, simply inflate the tube through the mouth. Time to inflate the PFD is quite short but may seem long if you are not a very good swimmer or if in panic. This tube could be hard to use when you are trying to keep your head above water.

It is important to read the PFD's User's Guide before leaving and to try it on under supervision to become familiar with its operation. You should know how to use it before you are faced with an emergency.

## Labels

For a lifejacket/PFD to be Canadian-approved, it must have a label that states it has been approved by:

- Transport Canada;
- Canadian Coast Guard;
- Fisheries and Oceans Canada; or
- Any combination of the above.

Lifejackets approved by the U.S. Coast Guard are not Canadian-approved. However, visitors to Canada may bring their own lifejacket to use on a pleasure craft as long as it fits and it conforms to the laws of their home country.

**It is important that the correct size and proper number of PFDs/lifejackets be on board for all passengers.**

## Caring for Your Lifejacket

Treat your lifejacket like an investment and take good care of it! Lifejackets that are ripped or in poor condition are not considered approved. Follow these tips to keep yours in good condition:

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

## VESSEL SAFETY EQUIPMENT

### Buoyant Heaving Lines

A buoyant heaving line is approved for use as long as it floats and is in good condition. It must be one full length and not a series of shorter pieces tied together. The line can only be used as safety equipment;



A buoyant heaving line should be in every type and length of craft. It is a rope that should be no less than 15 meters (50 feet) long. A float is attached at one end of the heaving line to help for the buoyancy and as a weight to help for accuracy when throwing it at a person overboard.

The buoyant heaving line should be readily accessible in case of emergency and it is the responsibility of the operator to inform the passengers where it is as well as the rest of the safety equipment and ensure that they know how to use it.

Boat operators should practice throwing a heaving line with an attached life ring before they need to use them in real situations. Throw either device underhand, feeding the line out of the other hand. Ensure that you securely hold on to one end of the line or that it is well tied to the boat. The life ring prevents the line from becoming tangled in the propeller and makes it easier to grasp by the person in the water. These are to be used exclusively as safety equipment in an emergency situation only.

### Lifebuoys



A lifebuoy is a life saving appliance (that should be readily accessible in case of emergency) that is thrown to a person in the water to provide buoyancy and prevent from drowning. The lifebuoys must be attached to your buoyant heaving line and is required on vessels larger than 9 meters. It must be in good condition with no tears, cracks or pieces of the material chipped away. When using the lifebuoys, the grab line must be secure and in good condition. When buying a lifebuoy, look for a Transport Canada approval stamp or label. Small vessel lifebuoys must be at least 610 mm (24") in diameter. SOLAS lifebuoys are 762 mm (30") in diameter. Smaller lifebuoys and horseshoe-type devices are not approved.

### Reboarding Devices



A reboarding device includes a ladder, lifting harness or other apparatus that does not include any part of the vessel's propulsion unit and that would assist persons in gaining access to the vessel from the water. A transom ladder or swim platform ladder meets this requirement.

### Manual Propelling Devices



A manual propelling device is a device that a person can use to manually propel a boat, for example a pair of oars or paddles, or any other piece of equipment that uses human-power to propel a vessel. An anchor can also be considered to be a manual propelling device. You simply throw it out of the boat and pull yourself with it. You must always consider the size of the boat, wind speeds and local hazards.



## Anchors



Danforth anchor



Charrue anchor

The anchor is another piece of safety equipment on a craft. There are different types of anchors and they have different characteristics. If there is a risk of bad weather, or if the pleasure craft is in trouble, a safety option is to drop the anchor. To drop anchor is a safety technique as well as an alternative to mooring at a dock when spending the night away from the marina. As a precaution, the anchor must be easily accessible. If by misfortune the engine breaks down, the craft must be anchored to proceed with repairs. The anchor prevents the boat from drifting into dangerous areas. In a storm, look for an anchorage site safe from strong winds and from other boat traffic. The site must be sufficiently deep. Make sure there is enough anchor line to keep the craft in place. There should be enough space around the boat if the wind happens to change direction.

Often operators have an anchor too small to do the job. If unsure as to what to get, buy an anchor heavier than what you believe is required. It is recommended to carry 2 different types of anchors like a Danforth anchor and a Charrue anchor (see above). This will give you more flexibility when anchoring in different terrain. It is also important to have enough length of rope and chain. It is important to have a certain length of chain between the anchor and the rope. The weight of the chain improves the efficiency of the anchor and prevents premature wearing of the rope. Do not forget (make sure that the link is locked), before dropping the anchor: fasten the opposite end to the craft (bow). Many anchors have been lost because this precaution was not taken. Selection of an anchor will depend on holding power and type of bottom of underwater.

Never throw the anchor. It could reach the bottom at a bad angle and so not hold the craft. Let it drop slowly down until it touches the bottom. Then put the craft in reverse and let the rope unwind (between 5 to 7 times the water depths). Stay in reverse until the craft stops then put the gear into neutral. Never anchor small crafts from the side or the back as they could risk overturning the boat.

## Bailers and Manual Bilge Pumps

A bailer is a container capable of removing water from a boat. It must have a minimum capacity of 750 ml and have an opening of at least 65 sq.cm (10 sq.in.). It can be plastic or metal. If you have a manual bilge pump, it is necessary that the pump and hose are long enough for someone to be able to reach the hold and dump water overboard.

You can use a rigid plastic bottle of four liters (useful for small open boats) to make your bailer. Here is how to do it:

Rinse the plastic bottle, screw cap, cut the bottom and cut the side of the handle - see the picture below.



## AXE



Depending on the size of the pleasure craft, you might be required to have an axe on board. Although any type of axe is acceptable, a spike axe, as shown is preferred. It should not be exposed to the elements (weather and water). It can also be used to cut a tow line in case of emergency.

## VISUAL SIGNALS

### Watertight Flashlights



**A watertight flashlight (that floats and can work in the water) is a piece of visual signal equipment** required on board (see chart on the requirements depending on the type of boat and length). You must ensure that the batteries are in good working order before every trip. A watertight flashlight qualifies as navigation lights on non-powered vessels as well as on sailboats less than 7m. In an emergency, it can be used to signal for help.

### Distress Flares



A visual distress signal is any device designed to show that your boat is in distress; this signal would help others locate you. A wide variety of signalling devices, both pyrotechnic and non-pyrotechnic, can be carried to meet the requirements of the regulation. Visual distress signals may only be used in emergency situations.

Distress flares are used to send a distress signal. To determine if you must carry flares and of which type in your boat, refer to the chart on minimum safety equipment carriage requirements by boat and length (pages 25 to 27). You might be exempted from carrying flares, based on the size of your boat and where you are navigating. For instance, flares are not required for a boat that is operating on a river, canal or lake in which it can never be more than one nautical mile (1.852km) from shore. Under the Criminal Code of Canada, no person in a boat shall display a visual distress signal on water, under any circumstances, except a situation where assistance is needed and there is immediate or potential danger to the persons on board. In other words, you cannot send a false message. Although flares are potentially dangerous if misused, if you have them on board, they should be easily accessible. They should be stored in a watertight container and in a cool, dry location. They must be approved by Transport Canada. You must always read the manufacturer's instructions before use.

They are usually a one-time use; you should know how to use them before you actually have an emergency situation. Use flares only in emergency. Aerial flares should be fired at an angle and downwind. In strong winds, lower the angle to 45 degree at most.

Flares are only good for four years from the date of manufacture. For disposal of expired flares, contact the local fire department, the police department, or even your retailer for places they can be safely disposed of. Remember that hand-held marine flares are to be used in emergency only and are to attract attention day or night and serve as a beacon for rescuer to identify your position.

Flares come in 4 categories:



1-Rocket parachute flare    2- Multi star flare    3- Hand-held flare    4- Buoyant or hand smoke signal flare

- Rocket parachute flares: creates a single red star, reaches a height of 300m (984'), is seen from the ground or air and burns at least 40 seconds.
- Multi star flares: creates two or more stars, reaches a height of 100m (328'1"), is seen from the ground or air and burns for four or five seconds.
- Hand-held flares: red flame torch held in your hand and is best used to help air searchers locate you as they provide poor visibility from the ground.
- Buoyant or hand smoke signal flares: creates orange smoke for three minutes and can only be used in daylight.

## Sound-Signalling Devices



Boats under 12m (39 feet 4 inches) long must be equipped with a sound signalling device such as a whistle without a ball, a compressed gas horn or an electric horn. Boaters should be able to recognize sound signals from other boats. A short blast will last one second, a long blast is 4 to 6 seconds. Sound signalling devices are used as a method to communicate manoeuvring, to alert others of your presence in restricted visibility and finally, to draw attention to emergencies. Here are various codes or combinations used to indicate manoeuvres:

- 1 short: Altering course to starboard
- 2 short: Altering course to port
- 3 short: Operating astern propulsion
- 5 short: Danger
- 1 long: A large boat is leaving the dock.

In restricted visibility, blasts are every two minutes:

- 1 long: Under power, under way and making way
- 2 long: Under power, under way and *not* making way
- 1 long, 2 short: Not under command, drifting, fishing (trawling)

### Sound-Signalling Appliances



With regards to boats of 12 meters (39 feet 4 inches) long or more, they must be equipped with a permanently fitted whistle (see above). Vessels over 20 m (65 ft 7 in) must be equipped with a bell as well. Please refer to the Collision Regulations for detailed technical requirements.

In reduced visibility, all boats must use sound signals to inform other vessels of their presence. Therefore, operators are required to know that there are various sound signals (as well as knowing how to use them) that indicates movement in a particular direction or that attract attention to themselves especially in restricted visibility such as fog. Such sound signals could be continuous fog horns, bell, whistle, or at the extreme a gun at one minute interval.

### Fire extinguisher

A pleasure craft must carry fire extinguishers. The larger the boat the more fire extinguishers will be required in different locations of the craft (see details in chart on pages 25 to 28). You must familiarize yourself with your fire extinguisher by reading the manufacturer's instructions. As for all safety equipment on board, they should be in good working conditions with sufficient pressure. Portable fire extinguishers are classed according to the type of fire that they can put out. Here are the categories of fire extinguishers:

- A: Effective against solid combustibles (wood, textile, paper, etc.)
- B: Effective against liquid combustibles (gas, grease, oil, paint and inflammables.)
- C: Effective against electrical fires; (engine, the dashboard and electric cables.)

***The number before each letter corresponds to their effectiveness for extinguishing a fire.***

### Emergency Position Indicating Radio beacon (EPIRB)



This is mandatory on many pleasure crafts, at least highly recommended. See the charts on pages 25 to 28 to determine the need to have it on your pleasure craft.

## REGULATIONS REGARDING SMALL CRAFTS

### SAFETY EQUIPEMENT

The Small Vessel Regulations states that you must carry minimum safety equipment on board your pleasure

craft based on its length and type.

Larger crafts must carry more safety equipment than smaller ones as they navigate further away from shore and need more complex safety equipment in case of emergency. All the safety equipment on board must be in good working order and must be maintained in accordance with the manufacturer's instructions. They must be readily available and easily accessible to everyone on board in case of an emergency and not **locked up** in storage compartments.

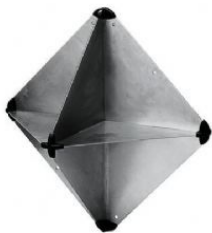
The safety equipment required by small pleasure crafts is outlined in the Small Vessel Regulations. (For additional information, visit <http://www.laws.justice.gc.ca/eng/SOR-2010-91/page-8.html>) These are based according to length and category of the craft and they fall under two categories of pleasure crafts:

- Human Powered Pleasure Crafts
- Pleasure Crafts other than human powered Crafts

***Note that, if your craft is missing the required equipment, you may put your passengers and yourself in danger and possibly receive a fine.***

### **Radar reflector**

A pleasure craft less than 20 meters long or which is mainly built of non-metallic materials must be equipped with a passive radar reflector. Radar reflectors are a valuable piece of safety equipment required under the Collision Regulations because they help larger boats detect your presence on their radar screens. It must be mounted or suspended at least 4 meters above the water. If the craft is used in light traffic conditions during the day and with favourable weather conditions, the law does not require a radar reflector be used. The craft is not required to have one if it is not essential to the safety of your vessel or it is impractical to mount.



## MINIMUM SAFETY EQUIPMENT REQUIREMENTS BY BOAT TYPE AND LENGTH

Source: Transport Canada and [www.boatingsafety.gc.ca](http://www.boatingsafety.gc.ca)

Boat Type and Length	Personal Lifesaving Appliances	Vessel Safety Equipment	Visual Signals	Navigation Equipment	Fire Fighting Equipment
<b>All Human-Powered Pleasure crafts</b> Exception: Paddleboats, watercycle, kayak: (see Note 9)	1. One (1) Canadian-approved lifejacket or PFD of appropriate size for each person on board (See Note 4)  2. One (1) buoyant heaving line at least 15 m (49'3") long  3. *One (1) reboarding device	4. One (1) bailer or manual bilge pump  OR  Bilge-pumping arrangements	<i>If more than 6 meters in length:</i>  5. One (1) watertight flashlight  6. Six (6) pyrotechnic distress signals other than smoke signals (See Note 2)	7. One (1) sound-signalling device or appliance  8. **Navigation lights (See Note 8)  9. ***One (1) magnetic compass  10. One (1) radar reflector (See Note 3)	None
<b>Pleasure Craft other than human-powered pleasure craft up to 6 m (19'8")</b> <i>Exceptions: Sailboards: See Note 10 Personal watercrafts: See Note 11</i>	1. One (1) Canadian-approved lifejacket or PFD of appropriate size for each person on board  2. One (1) buoyant heaving line at least 15 m (49'3") long  3. *One (1) reboarding device	4. One (1) manual propelling device  OR  One (1) anchor and at least 15 m (49'3") of cable, rope or chain in any combination  5. One (1) bailer or one (1) manual bilge pump (Note 1)	6. One (1) watertight flashlight  OR  Three (3) pyrotechnic distress signals other than smoke signals (See Note 2)	7. One (1) sound-signalling device or appliance  8. **Navigation lights  9. ***One (1) magnetic compass  10. One (1) radar reflector (See Note 3)	11. One (1) 5BC fire extinguisher if equipped with an inboard engine, a fixed fuel tank of any size, or a fuel-burning cooking, heating or refrigerating appliance
<b>Pleasure Craft other than human-powered pleasure Crafts over 6 m and up to 9 m (19'8" - 29'6")</b>	1. One (1) Canadian-approved lifejacket or PFD of appropriate size for each person on board	4. One (1) manual propelling device  OR  One (1) anchor and at least 15	6. One (1) watertight flashlight  7. Six (6) pyrotechnic distress signals other than smoke signals	8. One (1) sound-signalling device or appliance  9. **Navigation lights (See Note 8)  10. ***One (1)	12. One (1) 5BC fire extinguisher if equipped with a motor  13. One (1) 5BC fire extinguisher if equipped with a fuel-burning cooking, heating or

Boat Type and Length	Personal Lifesaving Appliances	Vessel Safety Equipment	Visual Signals	Navigation Equipment	Fire Fighting Equipment
	2. One (1) buoyant heaving line at least 15 m (49'3") long  OR  3. One (1) lifebuoy attached to a buoyant line at least 15 m (49'3") long  4. *One (1) reboarding device	m (49'3") of cable, rope or chain in any combination  5. One (1) bailer or manual bilge pump (See Note 1)	(See Note 2)	magnetic compass  11. One (1) radar reflector (See Note 3)	refrigerating appliance
<b>Pleasure Craft other than human-powered pleasure Crafts over 9 m and up to 12 m (29'6" – 39'4")</b>	1. One (1) Canadian-approved lifejacket or PFD of appropriate size for each person on board  2. One (1) buoyant heaving line at least 15 m (49'3") long  3. One (1) lifebuoy attached to a buoyant line at least 15 m (49'3") long  4. *One (1) reboarding device	5. One (1) anchor and at least 30 m (98'5") of cable, rope or chain in any combination  6. One (1) manual bilge pump  OR  Bilge-pumping arrangements (See Note 1)	7. One (1) watertight flashlight  8. Twelve (12) pyrotechnic distress signals, not more than six (6) of which are of smoke signals (See Note 2)	9. One (1) sound-signalling device or appliance  10. Navigation lights  11. One (1) magnetic compass  12. One (1) radar reflector (See Note 3)	13. One (1) 10BC fire extinguisher if equipped with a motor  14. One (1) 10BC fire extinguisher if equipped with a fuel-burning cooking, heating or refrigerating appliance
<b>Pleasure Craft other than human-powered pleasure Crafts over 12 m and up to 24 m (39'4" – 78'9")</b>	1. One (1) Canadian-approved lifejacket or PFD of appropriate size for each person on board 2. One (1)	5. One (1) anchor and at least 50 m (164'1") of cable, rope or chain in any combination  6. Bilge-pumping	7. One (1) watertight flashlight  8. Twelve (12) pyrotechnic distress signals, not more than six	9. One (1) or two (2) sound-signalling appliance (i.e. a fitted whistle); if the boat is longer than 20 m (65'7") it also requires a fitted bell	13. One (1) 10BC fire extinguisher at all of the following locations:  at each access to any space where a fuel-burning cooking, heating or refrigerating



Boat Type and Length	Personal Lifesaving Appliances	Vessel Safety Equipment	Visual Signals	Navigation Equipment	Fire Fighting Equipment
	buoyant heaving line at least 15 m (49'3") long  3. One (1) lifebuoy equipped with a self-igniting light or attached to a buoyant line at least 15 m (49'3") long  4. *One (1) reboarding device	arrangements	(6) of which are smoke signals (See Note 2)	10. Navigation lights  11. One (1) magnetic compass that meets the requirements set out in the Navigation Safety Regulations  12. One (1) radar reflector (See Note 3)	appliance is fitted;  at the entrance to any accommodation space; and at the entrance to the machinery space.  14. One (1) axe  15. Two (2) buckets of at least 10 L each
<b>Pleasure Craft other than human-powered pleasure Crafts over 24 m (78'9")</b>	1. One (1) Canadian-approved lifejacket or PFD of appropriate size for each person on board  2. One (1) buoyant heaving line at least 30 m (98'5") long  3. Two (2) SOLAS lifebuoys, of which:  one (1) is attached to a buoyant line at least 30 m (98'5") long; and  one (1) is equipped with a self-igniting light.  4. Lifting harness with appropriate rigging	6. One (1) anchor and at least 50 m (164'1") of cable, rope or chain in any combination  7. Bilge-pumping arrangements	8. One (1) watertight flashlight  9. Twelve (12) pyrotechnic distress signals, not more than six (6) of which are smoke signals	10. Two (2) sound-signalling appliances (i.e. fitted whistle and fitted bell) that meet the applicable standards set out in the Collision Regulations  11. Navigation lights  12. One (1) magnetic compass that meets the requirements set out in the Navigation Safety Regulations  13. One (1) radar reflector (See Note 3)	14. One (1) 10BC fire extinguisher at all of the following locations: at each access to any space where a fuel-burning cooking, heating or refrigerating appliance is fitted;  at the entrance to any accommodation space; and  at the entrance to the machinery space.  15. One (1) power-driven fire pump located outside the machinery space, with one fire hose and nozzle that can direct water into any part of the boat  16. Two (2) axes  17. Four (4) buckets of at least 10 L each



Boat Type and Length	Personal Lifesaving Appliances	Vessel Safety Equipment	Visual Signals	Navigation Equipment	Fire Fighting Equipment
	5. *One (1) reboarding device				

\* Only required if the vertical height that must be climbed to reboard the boat from the water (freeboard) is over 0.5 m (1'8").

\*\* Only required if the boat is operated after sunset, before sunrise or in periods of restricted visibility (fog, falling snow, etc.).

\*\*\* Not required if the boat is 8 m (26'3") or less and operated within sight of navigation marks.

**Note1.** Exception: if a bailer or manual bilge pump is not required for a boat that cannot hold enough water to make it capsize or even a boat that has watertight compartments that are sealed and not readily accessible.

**Note2.** Exception: pyrotechnic distress signals (flares) are not required for a boat that is operating on a river, canal or lake which can never be more than 1 nautical mile (1.852 km) from shore. Other exception: if the boat has no sleeping quarters and is engaged in an official competition or in final preparation for an official competition.

**Note3.** Radar reflectors are required on boats under 20 m (65'7") and boats that are built mainly of non-metallic material. However, it is not required if the boat operates in limited traffic conditions, daylight and favourable environmental conditions, and where having a radar reflector is not essential to the boat's safety. It is also not required if the size of the boat makes it impractical to install (should be installed at least 4 m high)

**Note4.** A PFD or lifejacket carried on board any pleasure craft operated in whitewater must be inherently buoyant.

**Note5.** Deleted

**Note6.** This could be a pea less whistle, a compressed gas horn or an electric horn

**Note7.** Deleted

**Note8.** Human-powered Pleasure Crafts and sailing vessels less than 7 m (23'4") in length can meet this requirement with a watertight flashlight

**Note9.** If every person on board a paddleboat, a watercycle or kayak is wearing a Canadian-approved PFD or lifejacket of appropriate size the only equipment required to carry on board is a sound-signalling device and a watertight flashlight, if it is operated after sunset or before sunrise or in periods or restricted visibility.

**Note10.** If a person is operating a sailboard or a kiteboard and is wearing a personal flotation device of appropriate size, the only equipment required on board is a sound signalling device and a watertight flashlight, if the sailboard or kiteboard is operated after sunset or before sunrise or in periods of restricted visibility.

**Note11.** Exception: if every person on board a personal watercraft is wearing a Canadian-approved PFD or lifejacket of appropriate size then the only equipment required to carry on board is a sound-signalling device, a watertight flashlight OR 3 pyrotechnic distress signals other than smoke signals, a magnetic compass, if the PWC is navigated out of sight of seamarks, and navigation lights (as per the Collision Regulations) if the PWC is operated after sunset or before sunrise or in periods of restricted visibility

## EQUIPMENT EXEMPTION FOR THE FOLLOWING TYPES OF PLEASURE CRAFT

Listed below, you will find the vessels that, in certain conditions, could be exempt from having to meet the minimal safety equipment required:

- Racing Canoe;
- Racing Kayak;
- Rowing shell;
- A closed multiple division Multihull;
- A Sailboard; and
- A bailer type closed hull.

To deal with situations beyond your control, you can add other safety equipment in addition to the minimum required by law such as:

- A knife;
- A first aid kit including a wilderness survival manual;
- Emergency rations;
- Drinking water;
- Dry clothes;
- VHF radio;
- Hand Compass; and
- A tool box with spare parts for the engine and other sections of the boat (i.e. a fibreglass repair kit, metal wiring, duck tape, spare batteries, matches, etc).

***All this may be useful and/or necessary in case of an emergency.***

## POINTS TO REMEMBER BEFORE HEADING OUT

It is important for boat operators to remember that negligence of their boat maintenance and inadequate preparation for boating trips can lead to unsafe boating experiences, resulting in injuries and loss of life. Boat operators must also understand the importance of demonstrating life saving equipment and providing safety instructions to their guests.

It is important to consult what is commonly known as the Pre-Departure checklist (see sample checklist at the end in the quick reference section, page 55). The goal of it is to avoid situations which could lead to emergencies.

***Get to know your boat.***

If you have passengers on board, it is essential to show them how to correctly wear the lifejacket or the PFD and make sure they are the appropriate size for each person. You must also inform your passengers on the location and how to use all the safety equipment. Make sure that all the basic tools and the necessary replacement parts are on board. A toolkit may include pliers, some keys, screwdrivers, a knife, an iron saw, tape, bolts, fuses and replacement light bulbs. Check your navigation lights even if you plan to come back before sunset. Check the electric pump and test the craft's battery. If you have an onboard engine, check the oil level if you need to add more.

If your boat is equipped with a marine radio (VHF) verify that it is working by calling the marina on the 68<sup>th</sup> or 70<sup>th</sup> channel. (The 16<sup>th</sup> channel is exclusively for emergency calls).

***Place safety equipment for easy access on board and let all passengers know their location and usage.***

Before your departure, get into the habit of always looking at your pre-departure checklist to ensure your craft is in good working condition. This will avoid unnecessary problems later. Here are some of these things you should look for:

- The weather forecast, local hazards or boating restrictions;
- The general condition of the craft;
- You have an ample amount of fuel for the trip;
- You have a complete First Aid Kit;
- You have the safety equipment according to the regulations;
- You have manual pumps available;
- All navigation lights are working properly;
- Completing the trip-plan and leave it with a responsible person;
- Closing the trip plan on your return; and
- That your drainage plug is in.

Overloading your boat with passengers, equipment or both, is extremely dangerous for you and the people on board. If the weight is too heavy, your boat will become unstable and prone to rollover. It will be difficult to stabilize it again.

In accordance with Transport Canada Compliance Notice, the craft operator must comply with maximum security limits. These limits apply only in good weather and when the weight is evenly distributed on board. In difficult conditions, you should use common sense. Keep the load as low as possible and tie down the equipment to limit its movement.

If your boat is over 6 m (19'8"), the compliance notice will not have any recommended limits. However, if overloaded, these boats can also become unstable. You should refer to your boat manufacturer's user guide for recommendations, you should also use your judgment when loading and operating the boat.

### **SAFETY PROCEDURES WHILE REFUELING**

Raw fuel is extremely harmful to the environment and the vapours can create dangerous fire hazard. Follow the fuelling procedure step by step.

- ✓ Moor the craft tightly to the dock to prevent spillage;
- ✓ Turn off the engine;
- ✓ Before beginning the procedure, extinguish all on board flames (smoking or cooking flames etc.);
- ✓ All uninvolved persons must leave the craft;
- ✓ One must not smoke while refuelling;

- ✓ Turn off all electronic devices such as radios, switches and batteries; one spark caused by a short in those electrical devices could produce an explosion;
- ✓ The doors, windows and hatches must be closed. Gasoline fumes are heavier than air, so they could spread to the bottom of the craft and cause an explosion when the engine is started;
- ✓ Portable tanks must always be off the boat while refuelling. If there is any spillage of fuel, it would not land on the boat, but on the dock so there would be less chance of an explosion;
- ✓ With a fixed tank, it is important to ground the gas nozzle against the filler pipe to ensure it is safe;
- ✓ This will avoid static as a spark could cause an explosion;
- ✓ Do not overfill the fuel tank. Any overflow could leak through the ventilation or into the water and pollute the environment. You are obligated to clean up any gasoline spilled on the craft or on the dock immediately. Throw away rags in approved containers; and
- ✓ Check for vapour odours.

**If you have an onboard engine, the blower must be on for at least 4 minutes before starting the engine. This will enable any dangerous fumes to fully evaporate.**

## **CARBON MONOXIDE AWARENESS**

Carbon monoxide (CO) is an invisible odourless poison. It is very difficult to detect without monitors and it kills hundreds of people every year. Organic material such as oil or gasoline produces CO when they are burned in an area with limited supply of oxygen. CO is also generated when a flame contacts a surface that is cooler than the flame's gas ignition temperature. The most common source of carbon monoxide is incomplete fuel burning – often from motors, generators, cooking ranges, heaters and the like. People don't realize that CO is present, since you cannot see it or smell it. You can die in minutes if you inhale large amounts of carbon monoxide. Inhaling even small amounts can cause health problems. It is important to be alert to the risk of this deadly gas.

Carbon monoxide is very dangerous because it can get into the blood stream when inhaled. Once it is there, CO interferes with the blood's ability to send oxygen to the tissues – including the heart and the brain. In worst cases, it can cause permanent brain damage or even death. The risk is even higher for pregnant women, as the blood carries the CO to the unborn child. Get the victim into a well ventilated area, call 911 and seek medical attention immediately.

You should know the symptoms of CO poisoning. At moderate level you can get severe headaches, become dizzy, mentally confused, nauseated, or faint. You can even die if these levels persist for a long time. Low levels can cause shortness of breath, mild nausea and mild headaches, and may have a longer term effects on your health. Be aware of the symptoms as the victim may have similar symptoms but another condition, like suffering from seasickness.

In order to prevent and avoid carbon monoxide poisoning choose appliances that vent their fuels to the outside whenever possible, have them properly installed, and maintain them according to manufacturer's instructions. Read and follow all of the instructions that accompany any fuel burning devices and ensure that they are certified and designed for marine use. Use a CO detector and check the battery regularly.

Boaters should be aware of the circumstances when CO can build up, for examples:

- Two vessels are tied to each other;
- You are docked alongside a seawall;
- Your load causes the bow to ride high; or
- A fuel-burning appliance or engine is running while your vessel is not moving.

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

- Let the motor run at idle only in a well ventilated area;
- Heat the cabin and cook only when there is proper ventilation;
- The extensions and cabin areas that have canvas awnings should be well ventilated;
- Engines and fuel-burning appliances must be certified or designed for marine purposes and should only be used in well ventilated areas; and
- Use a carbon monoxide detector designed for boats and check the batteries before each departure.

### **Warning to swimmers**

A swimmer can be overcome when inhaling CO and even drown within a short time. The underside of swimming platforms and the space between the pontoons of houseboats are also areas at risk.

### **Fuel-Burning Appliances**

Gas emissions and leaks of propane and butane can spread rapidly in the lower parts of a boat. They are very explosive and difficult to identify. Devices that run on propane or butane pose a higher risk than those that run on gasoline.

To use the propane and butane safely:

- Use these devices only in a well ventilated area;
- Firmly attach the cooking appliances and portable heaters so that unexpected movement does not cause leakage;
- Secure the gas cylinders and gas tanks in an area with good ventilation;
- Install any fuel-burning equipment following the manufacturer's instructions; and
- Always supervise heaters, open flame cooking or refrigeration.

### **Ignition Protection**

Every vessel that is powered by gasoline or uses propane on board is at risk of fire or explosion caused by these vapours.

Vapours, especially by gasoline, can remain behind and build up in the engine compartment of a boat, even after it's ventilation system blowers have been running for more than 4 minutes. Gasoline vapour is flammable and poses an explosion hazard if ignited. Reducing the risk of fire or explosion depends on eliminating flammable gasses and sources of ignition. Proper maintenance, safe fuel practices and use of approved parts will easily accomplish this safety task.

Here are a few steps a boater can take to reduce the risks of explosions:

- Ensure preventive maintenance is carried out regularly;
- Loose, corroded or frayed electric wires and cables can cause sparks and must be changed or repaired;

- Inadequately mounted lead-acid battery can shift in the engine compartment and should be repaired or changed;
- Cracked, broken and weathered fuel lines can lead to gasoline leaks into the engine compartment;
- Fuel filters can rust, corrode or freeze, causing leaks of their own;
- Follow safe refuelling practices as described in this manual (safety procedures while refuelling); and
- The simplest way to reduce the risk of explosion is to remove sources of heat and ignition. If an electrical component is in the engine room, fuel tank space, or space where fuel lines are, then the electrical component must be ignition protected. What does ignition protected mean? It means that a spark from the device will not ignite a fuel/air mixture in the same space. In simpler word, it won't cause an explosion.

## NAVIGATING ON THE WATER

While navigating on the water, boaters are responsible to be knowledgeable of the water ways, its rules, regulations, navigation aids, general rules of the roads, restrictions and especially how to navigate safely including speed safety, weather conditions, local hazards, etc. It is important for the operator to ensure that he or she does not operate the vessel in a careless manner without due care and attention or without reasonable consideration for other persons, vessels or the environment. This section and the information throughout the manual are meant to inform you as a boater about your responsibilities in the water.

### NAVIGATION AIDS

Navigation aids are systems or devices external to the boat that warn of any hazards or obstacles such as shallow areas. They also help determine one's position on the water and to find the best route to one's destination. These guidance devices could be buoys, lighthouses, marine maps and other aids to navigation.

On the craft, marine charts (or hydro-graphic charts) are graphic nautical representations that indicate the different bodies of water, such as shipping lanes. The charts give the depth of the water, underwater dangers and hazards, shallow areas, rocks, wrecks, etc. There are also other guides to navigation to be noted such as buoys, day beacons and lighthouses. These may point to adjacent waters for navigation (neighbouring coastal areas), points of reference such as bridges and their height, towers, buoys, etc. These are used to simplify navigation.

Marine charts have particular characteristics that do not exist on ordinary maps. They have the 32 points of the compass which allow one to trace one's exact route and even help determine one's exact position. Large scale charts, which show a section of the territory, are often very useful as they are more detailed.

The main chart includes all the signs and abbreviations used on Canadian marine charts. It is actually the reference chart that covers all Canadian territories that are scaled down in a more detailed map.

The topographic maps are used for traveling on land and show natural characteristics of the land above the water and details of the land areas, which include artificial land obstacles, elevation points, coasts and rocks.

They do not include underwater dangers, navigation aids, channels and anchorage areas.

## NAVIGATION

*For visual presentation of the buoys and of the Canadian Aids to Navigation System see the quick reference card in the centre of the manual*

### SYSTEM FOR LATERAL BUOYS

**Lateral buoys indicate both sides of the channel where potential danger or hazards exists. It is important to know if you are going upstream or downstream. This can be determined by looking at your nautical charts unless you are familiar with the area.**

Lateral buoys are located alongside the recommended channel and can be seen from a good distance. The recommended passage is between those two buoys.

The port-hand buoy is *green* and is located on the port-side (left) of your boat as you are travelling upstream. The green buoys are identified with letters and odd numbers.

The starboard-hand buoy is *red* and is located on the starboard-side (right) of your boat as you are travelling upstream. The red buoys are identified with letters and even numbers.

The port-hand day beacon is similar to a port-hand lateral buoy. It indicates the left side of a preferred channel. It must be on the left when the craft is going upstream. It has a black or green square centered on white and is surrounded by a green reflective boarder. It has no lights and is visible only during daylight.

The starboard-hand day beacon is similar to a starboard-hand lateral buoy. It indicates the right side right of a preferred channel. It must be on the right when the craft is going upstream. It is identified as a red triangle with a white contoured line. It has no lights and is visible only during daylight.

### THE FAIRWAY BUOY

This buoy is situated at the entrance to a marina. It is *white and red* and indicates the center of the navigation channel. It indicates safe water on each side of the buoy, but it is better to proceed on the port side.

### THE ISOLATED DANGER BUOY

This buoy is moored on an isolated danger or hazard. It is *black with a red horizontal stripe*. If it has a light on it, it is white.

## THE CARDINAL BUOY SYSTEM

Cardinal buoys refer to the four cardinal points to indicate the location of the hazard (north, south, east, and west). These four buoys are coloured yellow and black and have two black cones on top. To identify them, the cones on top differ from one another.

A **North cardinal buoy** indicates the safest water is north of the buoy. The top half of the buoy is black and the lower half is yellow. On the upper part, there are two black cones both pointing upward.

An **East cardinal buoy** indicates that the safest water is east of the buoy. The buoy is black with a yellow band in the center. It has two black cones at the top, the top cone is pointed upward and the bottom cone is pointed towards the water.

A **South cardinal buoy** indicates that the safest water is south of the buoy. The top half of the buoy is yellow and the bottom half is black. It has two black cones on the top, both pointed towards the water.

The **West cardinal buoy** indicates that the safest water is west of the buoy. The buoy is yellow with a black band at the center. It has two black cones, the top one is pointed downwards and the bottom one is pointed upward, thus pointing at each other.

## POSTED COMMAND SIGNS OR WARNING SIGNS INCLUDE:

1. No wake zone signs;
2. No anchorage area signs.
3. Speed limit zone signs;
4. Low head dam hazard signs;
5. Power line hazard signs; and
6. Pile line hazard signs.

## SPECIAL BUOYS

There are many special buoys:

A **yellow, cautionary buoy** indicates dangers or hazards such as firing ranges, race courses, seaplane bases, traffic separations, underwater structures or areas where there are no through channels. It displays identification letter(s). If it has a top mark, it is a single yellow «X».

The **keep out buoy** marks an area where boats are prohibited. These buoys are *white with an orange diamond* with a cross of the same color on the two opposite sides on the inside and *two orange bands over and below the diamond*.

The **control buoy** marks an area where boats are also restricted. The buoy is white, with an orange open-faced circle on two opposite sides and two orange horizontal bands, one above and one below the circles.



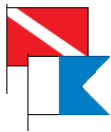
A number or a symbol inside the circle indicates the nature of the restriction in effect.

**The hazard buoy** marks random hazards such as rocks and shoals. It is white with an orange diamond at the center of two opposite sides and has a band above and below the diamond. Information regarding the hazard is illustrated inside the diamond.

**The information buoy** displays, by words or symbols, information of interest to the craft operator. It is white with an orange open-faced square symbol on two opposite sides and two orange horizontal bands, one above and one below the square symbol.

**The swimming buoy** marks the perimeter of a swimming area.

### The diving buoy



The diving buoy marks an area where diving activities are in progress and are not usually shown on charts.

The blue and white flag (flag A) of the International Code of Signals is to be displayed on the diving boats. The buoy is a red flag with a white diagonal line across it and it indicates the location where the divers are under the water. This flag can be seen floating on the water or sometimes it can be attached to the diver so that when the diver moves the flag will follow. You should be careful and prudent to ensure that you stay outside a radius of 100 m (328 ft) of their flag. If you see one of these two flags, stay outside a radius of at least 100 m (328 ft). If you cannot keep such a large distance, slow down as much as possible, move cautiously and stay away from the boat and the diving area in order to avoid any under water collisions between the engine's propeller (s) and the diver(s).

**Remember: keep your distance from divers below the surface**

## COLLISION REGULATIONS

Much like the road, there are rules that govern the waterways. These are the Collision Regulations. All pleasure craft operators must respect these rules or they can be charged with severe penalties and even imprisonment. These rules apply on all Canadian bodies of water and regulate all types of crafts. The regulation states that a pleasure craft operator must take early and substantial action to keep clear of other vessels in order to avoid a collision, otherwise if the course is clear, the operator simply maintains his course and speed.

The Collision Regulations defines a power driven vessel as a vessel that is propelled by an engine, be it gasoline, diesel, steam or even electric.

A sailing vessel propelled by machinery is considered to be a power driven vessel, even if the sails are rigged. When a craft is strictly driven by the power of the wind, it is considered a sailing vessel.

***Please consult the quick reference card in the middle of the Guide for the rules of the road***

## **Keep Watch to Avoid Collisions**

### **Rules of the road**

All operators of a pleasure craft must navigate safely and above all, share the waterways so as not to create situations of risk or potential danger to other boaters, swimmers, divers, wildlife and the environment in general.

You must always maintain a constant lookout, meaning you must always look around you to see if there are hazards or other boaters giving distress signals. This is also part of the Criminal Code of Canada.

### **Steer Clear of Shipping Lanes**

Some boaters do not realize the risk they take when they cross shipping lanes or pass in front of larger vessels. You must never interfere with the passage of large shipping vessels in a shipping lane. A shipping lane is the predetermined channel used by commercial vessels. You must always give way to those vessels. It is very difficult for them to change their course and they require a very long distance to come to a full stop. The crew of those vessels are standing very high above the water line which makes it very difficult for them to see smaller boats on the water. Most of the time they will navigate using sophisticated electronic equipment such as radars and GPS.

Since these vessels probably will not see you until it is too late, remember to:

- Always watch for others on the water and be ready to yield to large vessels in the safest way - keeping in mind the water and weather conditions. Use radar and radio if you have them;
- Navigate in groups of other small boats when possible, to be more visible;
- Stay off the water in fog or high winds; and
- Stay clear of docked ferries, ferries in transit, vessels in tow and working fishing vessels.

To remind you of the requirement to give way, the large ship will issue five or more short blasts. This means that the situation has reached the level of urgency and you need to clear the way.

### **Give plenty of space to tugs and other towing or pushed vessels**

Tugs may tow boats with a long tow line that extends behind them. Sometimes the tow line is so long that it hangs below the water surface and is almost invisible. Never pass between a tug and the tow line. If your boat strikes the submerged tow line, it could capsize and/or can cause serious damage to your boat, thus endangering people onboard. A large number of objects being towed also leave a long trail behind them so make sure to leave the tug and the tow line a large space in each direction, move away as safely as possible since these vessels cannot manoeuvre as easily. The same safety precautions apply to pushed vessels.

All motorized crafts must take early and substantial action to stay clear of sailing crafts or active pleasure fishing crafts, paddle craft, canoes and kayaks. However, pleasure crafts that practice line or fly-fishing must also abide by the same regulations as those of other power driven vessels. A sailboat operator must take early and substantial action to keep clear of a pleasure craft on which the passengers are fishing.

An active net-fishing craft is not manoeuvrable.

In addition, an operator must take into consideration other important issues while encountering other vessels.

### Action by Stand-on vessel

Where one of two vessels is to keep out of the way, the other shall keep her course and speed. The latter vessel may however take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these rules.

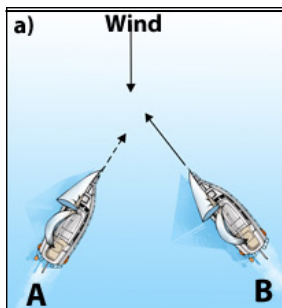
### Action by Give-way vessel

Give-way vessel means a vessel that is required by these Regulations to keep out of the way of another vessel.

Every vessel which is directed to keep out of the way of another vessel shall, so far as possible take early and substantial action to keep well clear.

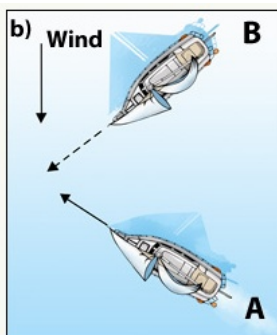
Here are some of the rules that apply to sailboats:

### Rules of the road



- When each sailing vessel has the wind on a different side, the vessel that has the wind on its port (left) side must keep out of the way of the other. As you can see above, vessel A keeps clear of vessel B.

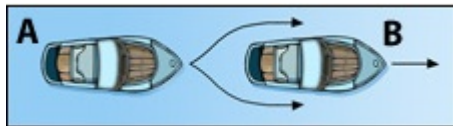
If a sailing vessel has the wind on its port side and the operator is not sure if the other vessel has the wind on its port or starboard (right) side, the first boat must keep out of the way of the other.



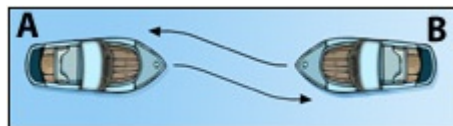
When both sailing vessels have the wind on the same side, the vessel to windward\* must keep out of the way of the vessel to leeward. As you can see above, vessel B keeps clear of vessel A.

*The windward side is opposite to the side that carries the mainsail or, in the case of a square-rigged vessel, the side opposite to the side that carries the largest fore-and-aft sail.*

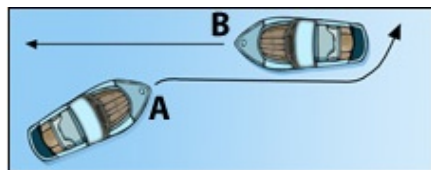
A craft that overtakes another craft must take early and substantial action to keep clear of the other craft in front of it. (see below)



Two crafts that come face to face must both steer to their respective starboard side in order to avoid a collision (see below).



The operator who sees other power driven vessels on his starboard side, and who must cross their path thus risking collision, must manoeuvre and take early and substantial action to keep clear of the craft and, if possible, avoid crossing ahead of the other vessel.



Here is an example. The color showing the right of way is green and the color blocking the right of way is red. On a craft, always ask yourself, «Which side of the craft am I going to cross? Will I cause a collision if we change direction? If I see the red side (port), I must keep clear of the other craft. On the contrary, if I see the green side (starboard), then I have the right of way and even then I must keep my course and speed».

***Look for more rules of the road in the quick reference cards at the centre of this guide.***

## NAVIGATING RESPONSIBILITY

Safety is a shared responsibility of Canadian waterway users and the organizations that govern them. Boaters must operate their boats safely. Boaters should be aware of situations that could jeopardize the safety of a boat and everyone on board, while on the water, they must be able to adapt to changing conditions.

## SPEED AND SAFETY

The Vessel Operation Restriction Regulations do not specify speed limits because a safe speed depends on the craft and the prevailing conditions.

The operator, when determining a safe speed, must take into account the following factors: visibility, traffic density, wind conditions, tides, currents, ice weather conditions and navigational hazards. The operator of a pleasure craft that is not within sight of other vessels and in or near an area of restricted visibility must navigate at a safe speed at all times, operators must adapt to the prevailing circumstances and conditions of restricted visibility.

When operating a craft at high speed, a longer distance is required to stop the craft. The operator has to be more attentive because his reaction time to changing conditions has diminished. At times of low visibility, the regulations require an operator to adopt a speed based on the prevailing conditions, like at night or when there is fog. The operator must slow down in bad weather to avoid losing control of the craft and endangering persons on board.

It is dangerous to navigate close to the wake of a big ship. The water turbulence that it produces could cause a loss of control of their craft. The wake produced by a pleasure craft is not like those of a big ship, but they could easily overturn a canoe. Therefore, keep in mind when navigating that the wake created could endanger other pleasure craft operators.

Each operator is responsible for the wake that he or she creates. Therefore, you must be alert and overtake another boat with care at all times and at a safe speed so that your wake will not adversely affect:

1. Other vessels, including anchored vessels, grounded vessels, wrecks, dredges, tows, rowboats or canoes;
2. Work being done on the shoreline, docks, floats, or wetlands;
3. Other waterway users such as swimmers; or
4. Areas of bathing beaches, areas where divers are working, or areas of anchorage.

## THE WEATHER FORECAST

The operator of a pleasure craft should always check the weather forecast before departing to ensure that his vessel and persons on board are safe from possible danger. The weather and water conditions can play an important role in your safety on the water. Before you leave, make sure you get the latest weather forecasts for your area. You should also be aware of local factors (such as topography) that may affect the weather. A good source of information for specific situations is local people who are familiar with the area. Summer thunderstorms can strike quickly and without warning when you are navigating. Remember to keep an eye on the sky. If the sky starts to look dark and cloudy and conditions are changing rapidly, head for shore. Remember to check your references for navigation, including charts, before you leave so you know where to find a refuge quickly in time of need if the threatening weather continues you can refer to the Charts and Sailing Directions and Cruising guide, published by CHS. If you do not have charts, you could find your bearings by observing the shore or the area and establish reference points.

You can obtain the weather forecast via all media (radio, television, newspaper, etc). For example, one can look at the weather station on TV. Most newspapers also show local forecast charts.

You can also contact Environment Canada, use the marine radio and, finally, you can make your own personal observations. There are many ways of observing the local weather: by flying a flag: by watching the movements of tree branches, the direction of smoke from a chimney, or by the direction and height of waves and, for the well informed, by observing a barometer and the clouds.

## WIND SPEED AND WEATHER WARNING FORECAST

The wind speed in knots: 1 knot = 1.8 km / hour  
1 knot = 1.1 miles / hour

When high wind speeds are expected, Environment Canada will issue a wind warning in the marine forecast and categorize them in four levels:

- **Strong Wind Warning** (20 – 33 knots) (37 – 61 km/h)
- **Gale Warning** (34 – 47 knots) (62 – 87 km/h)
- **Storm Warning** (48 – 63 knots) (88 – 117 km/h)
- **Hurricane Force Wind Warning** (64 knots or more) (118 km/h or more)

## LOCAL HAZARDS

There are various local risks and hazards on each body of water and each have their own characteristics. Rapids are a hazard because of the speed of the current that prevents you from being able to properly manoeuvre your craft. Rapids are usually shallow water with large rocks scattered beneath the surface of the water. If you hit a rock, the boat or the propeller could be damaged. Low-head dams, white water and bridges can also impede the operation of a pleasure craft. If navigating a sailboat, it is important to properly evaluate the space between the top of the mast and overhead electric cables as many pleasure craft operators have been electrocuted because of carelessness.

You must always be ready for all unforeseen eventualities. You must also ensure that your boat and all its equipment are in good condition and operate according to standards. You must also:

- Carry navigation charts of the area where you are navigating so that you are aware of the location of raised obstacles, bridges and underwater cables;
- Learn how to read and interpret navigation charts - consulting tide tables and other documentation will also help you learn more about water levels, periods of low tide and high slack, and the direction of the current;
- Always keep clear of swimming areas - even boats without engine such as canoes and kayaks can cause accidents and injure swimmers;
- Avoid navigating too close to shore as this can damage the banks by creating erosion; and
- Prior to navigating in an area where you are not familiar, it is strongly recommended that you contact the area residents who are familiar with the waters, especially if you are in uncharted areas. They may be able to identify local hazards such as shallow areas or rapids and white water, and to describe the local wind conditions, currents and areas where high waves are easily formed.

**Underwater cables** also represent danger. When the anchor is dropped, it can get caught on the underwater cable and potentially cause an electrocution. A craft can also be overturned while trying to haul up an anchor that is caught on the cables. Marine charts point out underwater cables. There are often signs set in the water that mark the presence of these underwater cables.

Lakes surrounded by hills are susceptible to sudden wind changes. There can be a rapid change in wind speed and direction without warning, thus, causing a craft to become unstable and possibly overturn.

Areas where tides and different currents exist, all add to the complexity of navigation, they must not be overlooked.

When the tide is in the opposite direction of the wind, you can face ripples of the waves which may overturn a craft, even if the wind is light. If the amplitude of the tide is not known when a craft is anchored, you could be surprised to find the craft completely out of the water when the tide recedes.

When the water is shallow and the intensity of the wind increases, waves can become very large and will break. You must always be alert to wind conditions and always maintain a constant watch on weather patterns and changes.

## THE TRIP PLAN

The main objective of the Trip Plan is to help a search and rescue team in the event you get lost.

Before heading out, complete the Trip Plan with the necessary details that could assist if an emergency call is necessary.

The first section of the trip plan should include a full and detailed description of the boat (size, color, make, engine type etc). It should also include a list of the major safety equipment on board and type of monitored radio channel (HF, VHF, MF). A section of the trip plan should include details of the trip: itinerary, dates, length of the trip, etc. Finally, it should also include information on the owner (or operator if different) and all passengers onboard. All this information can be proven to be very important and pertinent when a search and rescue party is sent out.

In the last part, provide instructions in case of emergency. Before heading out, it is important to leave a copy of the plan with a responsible person such as the port master, a good friend or a family member.

If, for any reason, your itinerary changes and you decide to return to the marina earlier or later than planned, inform the person who has your trip plan so they will not inadvertently start a search. It is then very important to close the trip plan when it has been completed.

***Please refer to a sample trip plan in the quick reference section at the end of this manual***

## EMERGENCY PROCEDURES AND COMMUNICATIONS

### Marine Radio Communications

When an emergency occurs on the water it is essential to be able to communicate with the authorities on the shore or with other vessels in the area in order to get assistance. To achieve this, a new international system called the Global Maritime Distress and Safety System (GMDSS) has been developed. This system increases the efficiency of marine communication. This system can be used by any types of vessels, from the smallest one to the biggest one. It can quickly transmit a distress call to the Coast Guard and to other vessels in the area. Finally, it also enables other types of non-emergency communications, like ship to shore, ports of calls and canal locks system authorities. Marine radios are used to incorporate safety calls as well, after an indication that the station calling is about to transmit a message concerning navigation safety as well as important weather warnings.

At time of printing, the law stipulates that you must have a restricted operator's certificate (ROC) issued by Industry Canada.

Here is a list of regulated marine distress and safety communication equipment:

- Marine VHF radios (with the new Digital Selective calling (DSC) option on channel 70);
- Marine MF/HF – DSC radios;
- Emergency Position Indicating Radio Beacons (EPIRBs);
- NAVTEX; and
- Immarsat.

Although it is not mandatory, it is recommended that pleasure crafts carry GMDSS-compatible equipment. If your pleasure craft has such equipment on board, connect it to a Global Positioning System (GPS). This way, your exact position can be transmitted automatically as a distress signal and in a digital format. Marine VHF radios are the most common way of communicating a distress signal. When you can, always keep your VHF radio on channel 16. VHF radio channel 16 is used for emergency calling purposes only. Once you contact another vessel on channel 16 to give your exact position and the nature of your emergency, switch to another working frequency. The newer VHF marine radios have a new feature called the digital selective calling (DSC) on channel 70. This is used for digital communication and not for voice communication. This new feature provides automatic digital distress alerts. The Canadian Coast Guard has updated their systems to provide this service in many areas. If you are using marine VHF radios you must be familiar with their operations and must follow strict procedures as described in the VHF Radiotelephone Practices and Procedures Regulations. To use channel 70 you must obtain a 9-digit Maritime Mobile Service Identity (MMSI) number from Industry Canada (call 1-800-667-3780) This service is free of charge. Once your number is assigned to you, read the instructions in your owner's manual on how to make a DSC call to another boat or to a shore station that has DSC capability.

If you have a marine VHF radio on board and you need to make an emergency distress call (for example your craft is rapidly taking water and / or you are in immediate danger of capsizing or sinking) use the channel 16 to make that call. Then say very clearly "Mayday – Mayday – Mayday" and give the name of your boat, its position, the nature of your problem and the type of help you need.

If you need help but are not in immediate danger (for example your motor has stopped working and you cannot reach the shore), use channel 16 and say "Pan Pan – Pan Pan – Pan Pan" then give the name of your boat, its position, the nature of your problem and the type of help you need.

Depending on where you are located and if you have a cellular signal, you may use your cell phone to get search and rescue assistance by dialling \*16. Because cell phones are not always in range of a signal this should not be considered as a substitute to marine radio. These radios are recommended in case of emergency to ensure that your distress calls are received properly.

## **GLOBAL POSITIONING SYSTEM (GPS)**

Marine GPS were originally used by the Coast Guard to be able to track ships as they travelled along the coastline. This gave them an idea as to what direction they were heading and how quickly they were travelling. It also enabled them to maintain communication between land and the vessel in case of an emergency.



Marine GPS units have greatly evolved over the years; the technology now enables us to determine our exact position and use them along with marine charts to plan our routes and determine the safest way to get to our destination. More and more boaters have and use GPS systems on board. It is a world-wide radio-navigation system that links satellites and monitoring stations. It can determine your exact position within 30 metres. This type of technology could also allow you to avoid collisions with other crafts by determining your position and that of other crafts in the area. Although all this new technology is very reliable and has proven itself over the years, it is always a good thing to have a backup system, like marine charts.

If you use a GPS on the water, make sure it is a marine GPS. Road GPS will not provide you with all the information you need on the water.

## OTHER DISTRESS SIGNALS

- **Arm signal:** outstretch your arms on each side and do slow repetitive gestures from top to bottom. (Do not use this technique near a helicopter because the meaning is different).
- **Emergency position indicating radio beacons (EPIRB):** this is used to signal an emergency location.
- **Signal transmitted by radiotelephony or by any other signal system**
- **S O S (...---...)** in Morse code or possibly using a flashlight.
- A **shot gun** or other explosive signal may be fired at intervals of about 1 minute.
- A **continuous sound** with any fog-signalling device.
- **Rockets or shells that shoot up red stars** one at a time at short intervals.
- Use **distress flags N and C** from the International Code of Signals.
- A **rocket parachute flare or hand flare** shoots up a red light.
- A **smoke signal** that gives off orange coloured smoke.
- A **piece of orange canvas** with a black square and a black circle
- A **dye marker**.
- A **square shape**
- A **high intensity white light** flashed at regular intervals of 50 to 70 times per minute
- A **signal consisting of a square flag** with a ball or anything resembling a ball.

***Please refer to the quick reference card at the centre of this guide under  
“Standard Maritime Distress Signals”***

In case of engine malfunction or the breakdown of a pleasure craft, take the following steps depending on the circumstances:

1. Alter the speed of the craft;
2. Anchor the craft;
3. Investigate the problem;
4. Correct the problem if possible; or
5. Use or exhibit signals to indicate distress and need of help.

## HULL LEAK OR OTHER EMERGENCIES

There are a few steps and procedures to take when your boat takes on water.

First, locate the source of the water leak. Is there a leak in the hull? Is an underwater component defective such as the engine's water cooling system or electric pumps? Did you forget to install the rear drain plug? Once you have discovered where the water is entering the vessel, stop the leakage. If it is an underwater hull breach, use any type of plug (such as a piece of wood) in order to try to close the hole. If it is a crack caused by friction on a rock use an epoxy that hardens or catalyses underwater. If the hole is below the water line, you must generally remove the pleasure craft from the water in order to correct the problem. These are things to do with the assumption that you carry some or all the repair material on board, or that you can easily have access to damaged areas. Every emergency situation must be assessed properly in order to prevent further emergencies or even loss of life.

Once the leak has been sealed, remove the water that has accumulated in the hold or other compartments by using the handheld bailers, manual pumps or the bilge pumping system. This might be a situation where you might have to use distress signals to indicate you need assistance. If necessary use channel 16 on your marine radio with a <<MAY DAY>> signal or use the pyrotechnic distress signals. The pleasure craft operator should always have the tools and the necessary material onboard to stop a hull leak or a flood. The operator should always assess the situation and establish the safety risks for all people on board.

#### **OVERTURNED, SUBMERGED, SHIPWRECKED. GROUNDED OR MECHANICAL BREAKDOWN:**

##### **How to react:**

Depending on the circumstances, do the following:

- Ensure that everyone puts on a personal flotation device or a lifejacket;
- Keep close to the craft depending on the circumstances;
- Do a head count of those who were on board; and
- Use or show the signals to indicate distress and need of assistance.

#### **RECOVERING A PERSON OVERBOARD**

The most common causes of on-water incidents and fatalities are due to a collision with other vessels, capsizing and people falling overboard. There are many other causes such as reckless driving, excessive speed, operator inattention, and lack of experience of the operator. Every boating fatality and reported incidents are investigated and it was determined that most of these accidents could have been prevented, sometimes with just basic boating knowledge from the operator. The majority of the victims falling overboard and drowning were not wearing a personal flotation device. Alcohol was shown to be involved in near 40% of boating fatalities. Statistics also show that 25% of people who fall overboard and 40% of people involved in their boat capsizing have drowned.

Getting in and out of a boat can sometimes be tricky and can create additional risks of falling overboard. When getting into a boat, make sure you are starting from a stable position; remember you are going into a boat that is probably not as stable as solid ground since it floats on water. Always shift and adjust your weight and your body position accordingly, and try to hold on to something stable, like a dockside post, a cable on a ramp post or even another person. In the event you do fall into the water and the water is deep enough, swim to the nearest place where you can get out of the water easily, either by simply walking or using equipment, such as a ladder fixed to the dock, a reboarding device or a swimming platform, if these are already installed on the boat. Depending on the time of the year, the water might be cold and you might want to get out of the water as soon as possible in order to prevent hypothermia.

People can fall overboard while the boat is moving. This could happen for instance if the boat hits a wave at a wrong angle, then the weight of a person is thrown off balance and they can be ejected from their seat. When people are boarding a pleasure craft, the operator (who is responsible for the people on board) should always decide everybody's seating position so as to distribute all the weight evenly, thus stabilizing both the people and the material on board. When the boat is moving, passengers should always stay seated. This will also maintain a low centre of gravity, which helps to stabilize the boat. Passengers should never stand in a moving boat as it might render it unstable. You should have equipment on board to help a person who has fallen in the water, back in the boat. Know your water depth to avoid damage to the propeller, turn off engine when retrieving a person from the water.

In the event of a person falling overboard, alert everyone immediately. Proceed very cautiously taking the following steps, when possible:

- Slow down, stop if possible and throw a floating object to help him out (or to indicate where the person has sunk); When the person is being retrieved from the water, the engine should be turned off; this could prevent further emergencies, like the person being hit by the propeller;
- If you have other passengers onboard, ask them to maintain eye contact with the person who fell overboard. Otherwise, if the operator is alone in the boat he or she must operate the boat and maintain eye contact. Emergency situations can happen very quickly, we must always be prepared to react and maintain control;
- Steer your boat with care while keeping the person who has fallen in your field of vision to recover the person in a safe manner; and
- Throw the person a buoyant heaving line or lifebuoy attached to the boat and pull the person up on the windward side. Please note that if the vertical height to climb back aboard the boat from the water (freeboard) is more than 0.5 m (1 ft 8 in), you are required under the Small Vessel Regulations to have a reboarding device on the boat, such as a ladder.

Boaters should be familiar of different methods to recover someone who has fallen overboard. They should also be able to decide which method to use based on the conditions of both the water and the person overboard. Safety is always the most important issue, even after the emergency has occurred.

## **CAPSIZING**

The majority of incidents where a boat capsized are caused by mistakes from the operator, such as changing the boat's direction too quickly while using excessive speed. Another reason would be when they anchor the boat inappropriately or against the current or during strong winds, thus rendering the boat unstable. However, it is not always due to errors by the operator. The weather can change quickly, winds can pick up, sudden thunderstorms occur seemingly out of nowhere. You might start a boating expedition early in the morning, the weather is nice, the water is calm, but then hours later everything can change. If the operator is not experienced to face these sudden changes, this is when incidents can happen and worsen because of that. Always keep in mind that the operator is ALWAYS responsible for the persons on board. His or her decision to go boating could unfortunately turn things around very quickly.

As mentioned before, boats capsize because they become unstable. A well designed boat will resist capsizing in severe weather if it is properly operated. There are many things to keep in mind to reduce the risk of capsizing:

- Check the weather forecast before departure. Be aware of external forces such as wind, waves, water depth and the period of the year;

- Don't overload the pleasure craft. Be aware of your boat capabilities and the fact that adding weight into the boat will affect the available freeboard (distance between the water and the working deck of the boat). If it is overloaded, the freeboard will be reduced which could cause the water to go overboard;
- Try to operate your pleasure craft with fuel tanks and water ballasts filled as much as possible. This reduces the possibility of weight shifting, thus reducing the boat's stability;
- Keep all your hatches, doors and windows closed. This will prevent water from entering the lower parts of the boat. Checking the conditions of the seals and gaskets will also prevent water from entering;
- Adjust your course and speed accordingly in order to minimize the boat's motion and its stability; and
- Avoid sharp or high speed turns when loss of stability is possible.

There are always warning signs that will tell you if your boat becomes unstable and if you run a risk of capsizing, swamping or sinking. Perform visual checks of your boat. If it lists on one side, it could mean it is taking water or if the trim is not adjusted properly it could take in water. As simple as it may seem, check if the drain plug at the stern is fitted properly. Check if the cargo has shifted during your trip. On larger boats, make sure the bilge level alarms are operational. Sometimes if the bilge pump is operating at unusual frequencies, it could be a sign that the boat is taking in water. These warning signs, along with preventive maintenance and efforts will greatly reduce the risk of instability and possibly save many lives.

If the boat capsizes, everybody should stay close to the pleasure craft; it is easier to locate a boat and the people close to it instead of trying to locate people with their heads sticking out of the water scattered everywhere. Everybody should try to climb up on the capsized craft as high as possible. This could prevent hypothermia. If the boat has actually sunk, then everybody should stay close together and ensure that everybody is accounted for.

## **RUNNING AGROUND**

Running aground is often due to the fact that the operator is not familiar with the area they are navigating. The Collision Regulations stipulate that you must carry charts on board so as to be familiar with the area, unless you are experienced in navigating in that particular area. You must know your water depth, not only for safety, but to avoid damages to the engine's propeller. Propeller strikes on the bottom of the water area can also cause important ecological and sometimes environmental damages.

## **SURVIVING IN COLD WATER**

Many of the fatal boating accidents occur in the months when the water is cold (out of season). Many hunters for instance will navigate on the waters to get to their hunting grounds. Cold-water shock occurs when you are suddenly plunged in water that is 15 degrees Celsius and below. Most people do not understand the dangers and do not know how to deal with it. Canada's cold waters are particularly dangerous should you fall in them accidentally.

The first hazards to contend with are panic and shock. The initial shock can place severe strain on the body; it could paralyze your muscles instantly and in some cases, even produce instant cardiac arrest. Wearing a life jacket during this phase is critically important to keep you afloat and breathing.

During the first minute of exposure, survivors of cold water accidents have reported the breath taken out of them on the first impact with the water. Should your face be in the water during that first involuntary gasp of breath, you may well be inhaling water rather than air. Cold water shock will pass in about 1 minute. During that time concentrate on avoiding panic and getting control of your breathing. Emersion in cold water can quickly numb the extremities to the point of uselessness. Cold hands cannot fasten the strap of the lifejacket, grasp a thrown rescue line, or hold onto an overturned boat. Within minutes severe pain will cloud rational thoughts. Finally hypothermia (exposure) sets in, and without rescue and proper first aid treatment, unconsciousness and death will follow.

Cold water robs the body of heat 32 times faster than cold air. If you should fall into the water, all efforts should be given to getting out of the water by the fastest means possible. It is very important here, when navigating in cold water, that everyone should wear their PFD or their lifejacket since it may save their life. If possible, wear an immersion suit or an anti-exposure suit. These are usually a one-piece suit that acts both as a jacket to keep you warm and as a personal floatation device. They must follow the same criteria as other PFDs: they must be Canadian approved.

Should you find yourself in the water, avoid panic. Air trapped in clothing can provide buoyancy as long as you remain still in the water. Swimming or treading water will greatly increase heat loss and can shorten survival time by more than 50%. The major body heat loss areas are the head, the neck, armpits, chest and groin. If you are not alone, huddle together or in a group facing each other to maintain body heat.

## **HYPOTHERMIA**

Treatment for hypothermia depends on the condition of the person. Mild hypothermia victims who show the only symptoms of shivering and are capable of rational conversation may only require removal of wet clothes and replacement of dry clothes and blankets.

In more severe cases where the victim is semi-conscious, immediate steps must be taken to begin the re-warming process. Remove clothing only if it can be done with a minimum of movement to the victim's body. Do not massage the extremities. Lay the semi-conscious person face up, with the head slightly lowered, unless vomiting occurs. The head down position allows more blood to flow to the brain. A first aid course is obviously helpful when anyone is faced with emergency situations. Consult organizations in your community that offer such programs. Never give alcohol to a hypothermia victim.

Most people recovered in cold water (near drowning) show typical hypothermia symptoms.

- Shivering, slurred speech and semi-consciousness;
- Cyanotic (blue) skin coloration;
- Breathing difficulty (hyperventilation);
- Muscle spasm;
- Loss of body movement;
- Pupils fully dilated (open);
- Become unconscious; or
- Increased heart rate and blood pressure.

Numerous children have been brought up from freezing water after 30 minutes and have been successfully resuscitated.

The major lesson learned is very simple. It is not enough to carry a PFD or a lifejacket on your boat. Once in the water, you may not be able to swim the 2 or 3 meters necessary to find it. And once you have reached it, you may not have the dexterity to put it on.

The only effective prevention is to wear a PFD or a lifejacket at all times where there is a risk of falling overboard or being ejected from the small boat. Once you have entered the water it is too late – the psychological and neurological response of your body to the sudden cold may make it impossible to you to keep your airway above water.

Things to do that may help you survive in cold water:

- Wear your PFD/lifejacket; some PFD's come as a one-piece suit commonly used by ice fishermen;
- Climb onto a nearby floating object to get as much of your body out or above the water as possible;
- Cross your arms tightly against your chest and draw your knees close to them to help you keep your body heat; or
- Huddle with others with chests close together, arms around mid-lower back, and legs intertwine.

You can protect yourself by wearing multiple layers of dry clothing and a water or windproof outer layer under a lifejacket. Other equipment that can offer extra protection against hypothermia could include:

- Floater or survival suits: a full nose-to-toes lifejacket;
- Anti-exposure work suits: a lifejacket with a thermal protection rating;
- Dry suits: to be used with a lifejacket and a thermal liner;
- Wet suits: to be used with a lifejacket – trap and heat water against the body; or
- Immersion suits: to be used in extreme conditions when abandoning a vessel.

Remember to always make sure that your safety equipment is adequate for navigation in cold water and that everybody on board knows how to operate that equipment.

## NAVIGATION LIGHT SIGNALS

### Navigation Lights and Shape Requirements and Options by Boat Type and Length (Consult the reference guide in the middle of this manual)

Navigation lights are required on your vessel if you are operating it at night or in restricted visibility. Night time is considered after sunset and before sunrise. Restricted visibility could also be during the day, for instance in heavy fog or even bad weather, like rainfall or even snowfall. The important thing to remember is that you must be seen by other boaters from all around; the same is true for yourself: you must also see other boaters all around you. Navigation lights fall under two regulations. First, under the Small Vessel Regulations (SVR), which specifies the safety equipment required on board based on the type and size of the boat. The SVR also stipulates that all equipment, including navigation lights, must be in good working order and be checked before every trip. It also falls under the Collision Regulations, which describes how and when to use navigation lights. By looking at the navigation lights, operators must be able to first recognize that there are other boats navigating in the area and in which direction they are going so as to avoid a collision. It could also help determine if it is a power driven boat or a sailboat; it

also determines if the boat is moving or is anchored. Their specific colour identification, their meaning and the appropriate action to take when approaching a vessel showing navigation lights are all part of operating a boat safely and in shared waterways. Everyone must be aware of how to use them. Sharing the waterways responsibly and safely is a fundamental part of boating safety.

Under the collision Regulation (Rule 22) the lights showing on your vessel must have a minimum range of visibility. The range is based on the length of the vessel. For complete listing of these ranges, please go to <http://www.tc.gc.ca/eng/marinesafety/tp-tp10739-part-c-2823.htm>.

Large ships, fishing vessels, tugboats pulling barges and official government (police) boats are equipped with additional lights to identify their specific type of vessel.

Here is a list of the lights found on vessels and their corresponding color:

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

**Side lights:** a green light on the starboard side and a red light on the port side, near the bow and each showing an unbroken light over an arc of the horizon of 112.5 degrees; the sidelights may be combined with one lantern installed in front (or bow) of the vessel.

**Stern light:** a white light placed as close as possible at the stern, showing an unbroken light over an arc of the horizon of 135 degrees.

**Masthead light:** a white light placed over the fore and aft centreline of the vessel.

**Blue flashing light:** Used by any government vessels and or operated by law enforcements; they are identified by an all-around blue flashing light when they are engaged in duties in Canadian waters.

**Yellow light:** used when the vessel is engaged in towing operations; same characteristics as a stern light

**Special flashing light:** a yellow light placed at the forward end of a towing vessel or vessel being towed

The charts in the centre of the manual describe the requirements and different options for such lights and shapes based on the type and length of your boat. Here is also a brief description:

The color of the light on the other craft determines who has priority. Except for three types of pleasure crafts, all must have side lights and stern lights. On the starboard (right side), there is an unbroken green light. On the port side (left) there is an unbroken red light. The stern light is an all around (360 degrees) white light placed as close as possible to the stern.

In the event that the boat (or a sailboat) has a cabin or is bigger in size and the stern light is not seen from all around, we split that stern light in two. We then have a stern light showing a light with an arc of 135 degrees and a second light on the fore and aft of the pleasure craft (top of the mast), the mast headlight, showing an arc of 225 degrees. The sum of the two is 360 degrees, meaning that the boat is seen from all around.



If a power driven pleasure craft is operated after sunset or before sunrise, or even in periods of low visibility (i.e. fog) it must exhibit the required navigations lights. They must be seen from all around.

The navigation lights will also determine in what direction the boat is going or if the boat is moored. Most importantly, it will determine who has the right of way when approaching another boat. All the boats will show their sidelights and either their stern light or a combination of stern light / mast headlight. If you see a red side light from the other boat, this means you do not have the right of way; you must stay clear of the other boat. That other boat will then see your green side light, meaning he has the right of way. If you do not follow these simple rules a collision will occur, putting all the persons on board at risk.

The Collisions Regulations require that all-round lights on all horizons (unbroken light on an arc of 360 degrees) be lit from sunset to sunrise and in reduced visibility (fog or clouds).

Motor boats of less than 12 meters *underway from sunset to sunrise* must exhibit sidelights and either an all-round white light or a masthead light and a stern light.

### Sailboats

A sailboat is also required to exhibit sidelights and a sternlight. However, if the sailboat is less than 20 metres these three lights may be combined in one light fixture installed at or near the top of the mast. Another option for sailboats is to install two all-round lights at or near the top of the mast, the upper one red and the lower one green. These lights are combined with the regular sidelights and the sternlight but not in a combined light fixture.

A sailboat of less than 7 meters in length, underway from sunset to sunrise must exhibit, if possible, side lights and a sternlight. If the operator does not have these, he or she must have at hand an electric torch or lighted lantern showing a white light in order to avoid collision. A watertight flashlight qualifies as navigation light on non-powered vessels (rowboats and canoes) as well as on sailboats less than 7m. In an emergency, it can also be used to signal for help.

### Fishing vessels



Anchored, after sunset and before sunrise, showing an all-round white light



Anchored, during daylight, displaying a black ball



while under way, at night with all-round lights sidelights and one all-round red light

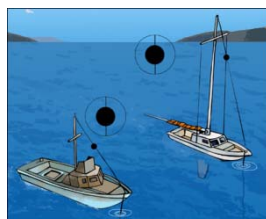


while under way during daylight, displaying proper equipment



fishing vessel engaged in trawling, two all-round lights in a vertical line, the upper green and the lower white

### Anchored Vessels



The operator of a pleasure craft of less than 50 meters that is anchored must exhibit at the fore part one all-round white light at night or one ball during the day and one all-around white light at the stern or one all-round white light. A pleasure craft less than 7 metres that is not anchored in or near narrow channel or where other vessels normally navigate is not required to exhibit anchor lights.



### *Towing Vessels*

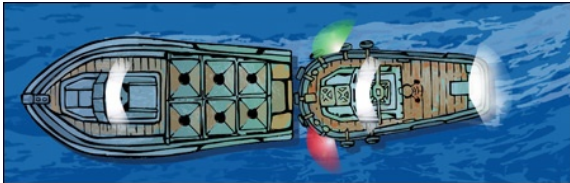


A towing vessel engaged in towing must exhibit in addition to sidelights and a stern light, a flashing yellow light mounted above the stern light and two masthead lights forward in a vertical line, (if more than 200 m long, 3 masthead lights).

Another towing situation is when a pleasure craft is towing another pleasure craft. In addition to the regular navigation lights, when a vessel not normally engaged in towing operations is engaged in towing another vessel in distress or otherwise in need of assistance it shall take all possible measures to indicate the nature of the relationship between the towing vessel and the vessel being towed in particular, by illuminating the tow-line.

### *Pushing Vessels and Vessels Being Pushed*

A special yellow flashing light shall be placed at the forward end of a towing vessel or vessel being pushed.



The vessel engaged in pushing should have sidelights, stern light and two masthead lights. The vessel being pushed should have sidelights at the forward end. When both vessels are rigidly connected in a composite unit, the lights are the same as a power-driven vessel.

### **Passive Radar Reflectors**

A passive radar reflector can enhance your safety on the water, but only if it is big enough and well placed on your boat. Reflectors help larger vessels to see small boats on their radar screens, which is sometimes the only way that they will be able to spot you while navigating in or close to shipping lanes.

When buying a reflector, there is no substitute for size – so buy one that will be efficient for your boat. Height is also very important, so keep this in mind also. A passive radar reflector is only efficient if it is installed at least 4 m (13'1") above the water level.

### **THE EFFECT OF ALCOHOL ON BOATING SAFETY**

We must always be aware of the fact that alcohol consumption as well as the motion of the pleasure craft, the sun, the waves, the wind and sound can seriously limit a person's capacity to operate a pleasure craft. It can negatively affect operators and passengers on board in terms of:

- Balance;
- Coordination;
- Reflexes;

- Judgement;
- Response time;
- Eyesight; and
- Hearing.

The effect of one glass of alcohol while on water is equivalent to three on land. Illicit drugs (even prescribed drugs) and other controlled substances may also impair a person's ability to operate a vessel.

The Criminal Code of Canada severely penalizes anyone who does not respect the alcohol or drug limit allowed on a craft.

Although the Criminal Code of Canada falls under a federal law, certain application (i.e. alcohol levels) falls under provincial jurisdiction. Some province will have a .08 % acceptable alcohol content, while other province will have a zero level of tolerance.

**Please verify with your local and provincial law enforcement offices**

## **WATER-SKIING**

Water-skiing and other water sports include all sports in which a person is being towed by a craft. The Small Vessel Regulations (section 1005) gives very precise rules that must be followed in order to ensure everybody's safety, both on board and on the water. Other than the operator, there must be another person on board to keep a lookout at every person being towed and is communicating with the operator of the boat. There must also be enough seating capacity in the boat to accommodate every person being towed. For instance, if you are towing someone with a personal water craft, it must have seating capacity of at least three people to tow one person. The initial two-seater PWC's are thus no longer acceptable for water sport towing. Every person being towed must be wearing a personal flotation device or lifejacket or it must be available in the boat for all those who being towed. This is the same rule that requires that every person on board must have a personal flotation device or lifejacket of appropriate size to be available for them.

It is prohibited to tow anybody in periods of restricted visibility or in the period beginning one hour after sunset and ending at sunrise. Water sports have a certain degree of risk and danger; it would be responsible and logical not to increase these risks and danger by not following these safety regulations on water sports.

The Small Vessel Regulations, section 1005 that was just explained is not applicable in situations where a vessel is operated during formal training, during competition or during a skill demonstration. However, the vessel must nonetheless meet the safety requirements of a governing body respecting that training, competition or demonstration.

## **NAVIGATING RESPONSIBLY**

The rules state:

- Stay clear of swimmers, paddle craft, wildlife and adjacent private properties;
- When you start out, the speed of the craft must be adjusted so that the wake and the wave disturbance created do not injure other people, erode the shoreline or do damage to property;
- Follow collision regulations; and

- Use courtesy and common sense so as not to create a hazard, a threat, a stress or an irritant to passengers, to others nearby, to the environment or to wildlife.

The operator of a pleasure craft should never move a sign in the water by mooring the craft to a sign or a buoy used for navigation purposes. He must never wilfully remove or conceal a buoy or other sea-mark used for navigation purposes. If an operator moors his craft to a channel buoy, charges could be brought against him. The reason is very simple. If the craft is large and hides the buoy, other pleasure craft operators will not be able to see it and risk running their craft aground or they may take the wrong route. The weight of the craft could also move the buoy.

The operator of a pleasure craft must never send a false distress call. For example, sending a MAY DAY, if not in a life-threatening situation may lead to a fine, under the Criminal Code of Canada.

**A responsible pleasure craft operator (as well as its passenger(s)) must be attentive to distress signals from other craft operators at all times and shall render assistance. Use all your senses, look and listen attentively, always maintain a constant lookout.**

### **Be Aware and Polite**

Be courteous and polite when you navigate on the water. Boating accidents happen very quickly and mostly occur when the operator has misjudged the distance or exceeds a safe speed. Therefore, stay away from other boats, swimmers, do not cut in front of another boat or jump the wake. Boating accidents involving friends or family members are even more dramatic if you are the driver.

### **Reduce Engine Noise**

Every boat equipped with a motor other than a stock (unmodified) outboard engine must have a muffler and must be used while operating within five (5) nautical miles (9.26 km) of shore.

This is not applicable if your boat was built before January 1, 1960, or if you are in an official competition or in formal training or final preparation for an official competition.

## **THE ENVIRONMENT CONCERNS US ALL**

### **Respect and Protect Canada's Waterways**

Canada's lakes, rivers and coastal waters are ours to share, so do your part to take good care of them. It is against the law to pollute the water with things like fuel, oil, garbage, hydrocarbons, anti-freeze, other toxic substances such as cleaners and untreated sewage in inland waters.

Canada has laws that protect our waterways and shorelines, and some of them apply to pleasure crafts. It is your responsibility to make sure you know and obey the laws wherever you go boating.

### **Preventing Pollution in our Waterways**

The Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals address major risks to the health of our waterways and shorelines such as sewage, garbage and hydrocarbons. Sewage contains, among other things, human or animal body waste, drainage and other waste from toilets.

These regulations prohibit the use of freestanding portable toilets. They also require that boats fitted with toilets be equipped with either a holding tank or a marine sanitation device. If your boat was built before May 3, 2007, you must comply with these regulations by May 3, 2012. Boats built on or after May 3, 2007,



must comply immediately.

### **Holding Tanks and Marine Sanitation Devices**

Choose a holding tank or a marine sanitation device that works for you. A holding tank is only used to collect and store sewage or sewage sludge and must be emptied at approved pump-out facilities on dry land only. Be sure to follow pumping instructions and avoid using disinfectants, as they may harm the environment. A marine sanitation device is designed to receive and treat sewage on board. Only sewage treated with a marine sanitation device that meets the standards set out in the regulations may be discharged in inland waters.

### **Reducing Pollution from Bilges**

Oil, fuel, anti-freeze and transmission fluid are a few examples of pollutants that harm the environment when pumped overboard – usually by automatic bilge pumps. Bilge cleaners, even the biodegradable ones, just break down the oil into tiny, less visible droplets. Absorbent bilge cloths are very useful because they are designed to absorb petroleum products and repel water. Here are a few tips to help keep bilge pollution at a minimum:

- Turn off automatic bilge pumps. Only use them when needed and when the bilge contains only water; and
- Use towels or bilge cloths to absorb oils, fuel, and antifreeze and transmission fluid. Dispose of used towels or bilge cloths in an approved garbage container.

### **Spread of invasive species**

By doing your part in helping to protect Canada's waterways, boat operators must be concerned of the possible spread of invasive species. You must keep your hull clean especially if you operate your boat in different lakes, rivers, major waterways and tow it overland between usages. Rinsing or cleaning your hull after use or before entering new waters will help remove spores and other organisms. Certain municipalities have adopted severe policies regarding this matter, be vigilant when putting boats in their waterways.

### **Reading Signs based on the Vessel Operation Restriction Regulations (VORR)**

The signs described under the Vessel Operation Restriction Regulations come in five shapes. The colour of the frame is orange and it is recognized internationally. When part of a sign has a green border, a special condition applies to the restriction. The symbol tells you the type of restriction that it applies to. If the sign is arrow-shaped, the restriction applies in the direction of the arrow. Know what these signs mean.

Note: Certain provinces, have adopted shoreline speed restrictions; boaters should refer to Vessel Operation Regulations (VORR) at <http://www.tc.gc.ca/eng/marinesafety/tp-tp14799-vessel-restrictions-2240.htm> for detailed information on speed restrictions.



**No power vessels**



No internal combustion or steam engine permitted



NATIONAL BOATING  
SAFETY SCHOOL



INSTITUT NATIONAL  
SÉCURITÉ NAUTIQUE



Power limit



No skiing



Standardized speed limit (normally 5, 10, 25, 40, 55)



No regatta



No Vessels



No power driven vessels in the direction indicated by the arrow



Combined sign (no skiing and speed limit)



No skiing north of the sign



No power vessel between the  
hours and days in red

**PRE-DEPARTURE CHECKLIST**

- ☐ Lifejackets
  - \* In good condition and Canadian approved
  - \* Proper size for each person on board
- ☐ Pleasure Craft Operator Card
  - \* Keep it on board
- ☐ Weather forecast
- ☐ Safety equipment (In good condition and easy to reach)
  - ☐ First aid kit, basic tools and spare parts
  - ☐ Bilge pumping arrangements or manual pump
  - ☐ A Buoyant heaving line of 15 m
  - ☐ Sound signaling appliances
  - ☐ A safety buoy
  - ☐ A class 5BC fire extinguisher
  - ☐ 2 Oars
  - ☐ Anchor
  - ☐ Pyrotechnic distress signals
  - ☐ Appropriate rope to lift someone out of the water
- ☐ Boat condition
  - ☐ Hull is not damaged
  - ☐ Electric, fuel, propulsion and cooling systems.
  - ☐ Throttle and steering both work well
  - ☐ Clamps and belts are secure and in good shape
  - ☐ Oil
  - ☐ Hoses and lines
  - ☐ Spark plugs
  - ☐ Check battery's charge
  - ☐ Drainage plug is in place
  - ☐ Spare plugs
  - ☐ Load on the boat is well distributed
  - ☐ Run the blowers for 4 minutes
- ☐ Charts, compass and local hazards
- ☐ Fuel (Advice: 1/3 to go, 1/3 to return, 1/3 reserve)
- ☐ Show EVERYONE where the safety equipment is located and how to use it
- ☐ Trip plan
  - \* Give the trip plan to a responsible person.

## Quick Reference

### OUTBOARD MOTOR PROBLEMS / Help Guide

The motor will not start if:

- ✓ The gas tank is empty;
- ✓ The feed line is disconnected;
- ✓ The gas switch is not at the start position; or
- ✓ A spark plug wire is loose.

The motor has difficulty starting if:

- ✓ The gas level is too low;
- ✓ The gas tank's air intake valve is closed;
- ✓ The feed line is being pinched;
- ✓ The gas has not reached the carburetor (pump more gas);
- ✓ There is water or impurities in the gas;
- ✓ A spark plug wire is loose; or
- ✓ A spark plug is dirty.

The motor is over revving if:

- ✓ The propeller is blocked by seaweed or debris;
- ✓ The gear is in neutral; or
- ✓ The split ring is broken.

The motor stops for no apparent reason if:

- ✓ The gas tank is empty;
- ✓ There is not enough oil in the gas;
- ✓ There is a spark plug problem; or
- ✓ The water inlet is blocked.

### STARTING THE MOTOR PROPERLY

Here are the steps to be followed:

1. Link the gas tank to the motor and pump gas until a resistance is felt;
2. Lock the motor;
3. Put the handle in the neutral position;
4. Put the gas button in the «on» position;
5. Pull on the rip cord; and
6. ***Make sure the motor is running smoothly.***

## TRIP PLAN

Step 1- Fill out applicable information for EACH TRIP

Step 2- Leave with responsible person or file with a Canadian Coast Guard Marine Communications and Traffic Service (MCTS) Centre by telephone, radio or in person

Step 3- Close sail plan upon termination of trip

### Owner information

Owner's name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Emergency Contact number: \_\_\_\_\_

### Boat information

Boat name: \_\_\_\_\_

License or Registration number: \_\_\_\_\_

Sail boat ☐ Power driven ☐ Type of engine: \_\_\_\_\_ Power: \_\_\_\_\_

Length: \_\_\_\_\_ Type: \_\_\_\_\_

Color: \_\_\_\_\_ Hull: \_\_\_\_\_ Deck: \_\_\_\_\_ Cabin: \_\_\_\_\_

Other distinguishing features: \_\_\_\_\_

Radio channels monitored HF ☐ VHF ☐ MF ☐

MMSI (Maritime Mobile Service Identity) number: \_\_\_\_\_

Satellite or Cellular telephone number: \_\_\_\_\_

### Safety equipment on board

Number of lifejackets or PFD's: \_\_\_\_\_

Life rafts: \_\_\_\_\_

Dinghy or small boat (include colour): \_\_\_\_\_

Flares ( include number and type): \_\_\_\_\_

Other safety equipment: \_\_\_\_\_

### Trip details (include *these details every trip*)

Date of departure : \_\_\_\_\_ Time of departure: \_\_\_\_\_

Leaving from: \_\_\_\_\_ Heading to: \_\_\_\_\_

Proposed route: \_\_\_\_\_

Estimated date and time of arrival: \_\_\_\_\_

Stop-over point: \_\_\_\_\_

Number of people on board: \_\_\_\_\_ Search and rescue telephone number: \_\_\_\_\_