www.notmar.com. Obtain as much information as possible about the area you will be navigating before you go.

The Canadian Hydrographic Service is the top source for information on nautical charts, tide and current tables, Sailing Directions, the Canadian Aids to Navigation System, Radio Aids to Marine Navigation, the List of Lights and Buoys and Fog Signals. Visit www.charts.gc.ca for more information.

Emergency! What are you going to do?

Act smart and call early! Knowing how to communicate distress messages and seek assistance in an emergency can make the difference between life and death.

Marine radio communications

Regulated marine distress and safety communication equipment such as:

- marine VHF radios (with the new digital selective calling (DSC) option, channel 70)
- marine MF/HF – DSC radios
- Emergency Position Indicating Radio Beacons (EPIRBs)
- NAVTEX
- Inmarsat

work together to form the new international system know as the Global Maritime Distress and Safety System (GMDSS). This combination of equipment quickly relays distress alerts to the Coast Guard and other vessels in the immediate vicinity.

Pleasure craft do not have to carry GMDSS-compatible equipment, but it is recommended. If your pleasure craft has this equipment, connect it to a Global Positioning System (GPS) receiver to ensure your exact location is automatically transmitted in a digital distress alert in an emergency.

Marine VHF radio and GPS

Marine VHF radio is generally the most effective and reliable means of issuing a distress alert. If you have a VHF radio keep it tuned to channel 16. Know where you are at all times and be prepared to describe your specific location.

If you are buying a new VHF radio, make sure it has the new digital selective calling (DSC) feature on channel 70. This feature provides automatic digital distress alerts. The Canadian Coast Guard has upgraded its facilities to provide DSC channel 70 service in many areas.

Remember, VHF radio channel 16 is used for emergency and calling purposes only. Once you call another vessel on channel 16, take your conversation to a working frequency to continue. VHF channel 70 should be used only for DSC (digital) communication and not for voice communications. Anyone who uses a VHF radio must follow the procedures described in the VHF Radiotelephone Practices and Procedures Regulations.

Obtain a nine-digit Maritime Mobile Service Identity (MMSI) number for your radio to get maximum benefits from this automated system. Your owner's manual will explain this feature and how to make a DSC call to another vessel or to a shore station that has DSC capability. These numbers are assigned, free-of-charge, by Industry Canada. Call 1-800-667-3780 or visit www.ic.gc.ca for more information.

On a VHF radiotelephone, in case of grave and imminent danger (for example, your boat is taking on water and you are in danger of sinking or capsizing), use channel 16 and say "Mayday" three times. Then give the name of your boat, its position, the nature of your problem and the type of assistance needed.

If you need assistance but are not in immediate danger (for example, your boat's motor has quit and you are unable to reach shore) use channel 16 and say "Pan-Pan" three times. Then give the name of your boat, its position, the nature of your problem and the type of assistance needed.

An important feature of a VHF/DSC radio is its ability to send a distress alert that tells the Coast Guard and nearby vessels you require immediate assistance. To find out where VHF/DSC services are available visit www.ccg-gcc.gc.ca or contact a Canadian Coast Guard Marine Communications and Traffic Services centre.

Currently, all VHF marine radio operators are required to have a restricted operator's certificate (ROC) with maritime qualifications. Contact your local Industry Canada office or the Canadian Power and Sail Squadrons at 1-888-CPS-BOAT for more information on procedures and radiotelephone licence requirements.

Global Positioning System (GPS)

More and more pleasure craft operators rely on the GPS to tell them where they are on the water. The GPS is a worldwide radio-navigation system consisting of a network of satellites and monitoring stations. Its receivers can calculate where you are, anywhere on the planet, to within 30 metres. The Coast Guard supplies a Differential GPS that has an integrity monitoring feature and provides an accuracy of within 10 metres.

If your boat is equipped with a GPS receiver, connecting it to your DSC radio may be a good idea. This ensures that when a distress alert is transmitted rescuers will immediately know your precise location and will arrive sooner.

Emergency Position Indicating Radio Beacon (EPIRB)

These buoyant radio distress beacons can be manually activated or float free of a sinking or overturned vessel and transmit for hours. Their signals communicate your position to a network of satellites for transmission to Joint Search and Rescue Coordination Centres. In an emergency, their function is invaluable. Although pleasure craft are not required to carry them, an EPIRB is highly recommended.

EPIRBs must be registered with the Canadian Beacon Registry at 1-800-727-9414 or at beacons@nss.gc.ca.

Cellphones and *16

With a cellular phone, you can contact Rescue Coordination Centres directly by dialling *16 for the Canadian Coast Guard Marine Communications and Traffic Services centres. However, a cellphone is not a reliable substitute for a marine radio and not the best means of issuing a distress call. Cellphones can lose reception or get wet and damaged. Calling from your cell does not alert other vessels close to you that you are in distress — the occupants of those other vessels could be the ones to help you if they could hear you. Unlike VHF transmissions, some wireless phone signals cannot be followed back to your location by rescuers.

Not all cellular providers offer the *16 service. Contact your wireless provider to find out if the *16 service is available from your phone.

Distress signals

If you see a distress signal, it is your legal responsibility to determine if you can assist those in distress without endangering your life or the safety of your boat. When possible, you must also contact the nearest Rescue Coordination Centre to inform them of the type and location of the distress signal you have seen.

Learning the common distress signals will help you recognize those in trouble and place a call for help that much faster. See page 65 for common distress signals.

Never send a distress signal unless you are in a real emergency. Sending false distress signals is an offence and takes time from Search and Rescue personnel, making them potentially unavailable or farther away from real emergencies.

Overboard recovery techniques

In certain weather conditions, and on some boats, wearing a safety harness with a quick release mechanism and a safety line secured to your boat would be wise. This keeps you from falling overboard unless, of course, your boat capsizes. Knowing and practicing the following procedures with your guests will lessen panicked moments in an emergency.

If someone falls overboard, sound the alarm immediately and then:

- Slow down, stop if possible and throw something buoyant to assist the person (this will also mark the spot if the person submerges).
- Assign someone to monitor the person overboard.
- Carefully manoeuvre to recover the person overboard.

Use a buoyant heaving line, or a lifebuoy secured to the vessel with a line, and recover the person from the windward side. A heavy rope, chain or cable secured at both ends and draped over the side (almost touching the water) can provide a makeshift step if necessary. If the freeboard of your boat is more than 0.5 metres (1'8") you must have a reboarding device.

Sailors and power boaters should be familiar with different overboard recovery techniques and consider how effectively these manoeuvres can be performed, with such things as sea-state and condition of the person overboard in mind.

Could you retrieve a person from water if they could not assist in their own recovery? If you fell overboard, could your guests lift you to safety? When someone's size or when the freeboard of the vessel makes it difficult to carry out a rescue by hand, equipment such as lifting slings and rigging may be a good idea (if not already mandatory for your size of vessel).

Surviving in cold water

It is a warm day — you are on your boat and get up to grab something. Suddenly you lose your balance and teeter off the side, falling into water that is less than 15°C. Your muscles are instantly paralyzed and there is no one around to help you. You are experiencing cold shock. There is no time to figure things out.

Cold water shock likely causes more deaths than hypothermia. Canada's typically cold waters are especially dangerous if you are unexpectedly immersed in them. For three to five minutes after sudden immersion you will gasp for breath. You could also experience muscle spasms or a rise in your heart rate and blood pressure. Worse yet, you could choke on water or suffer a heart attack or a stroke. Even strong swimmers can succumb to the effects of cold water shock.

Cold water can paralyze your muscles instantly. Trying to get a hold of a device while in the water, let alone putting one on, will be nearly impossible because of the physiological changes your body will be experiencing. A lifejacket or personal flotation device (PFD) will keep you afloat while you gain control of breathing and prevent drowning from loss of muscle control. Sadly, many people do not understand this danger and how to avoid it.

If you have survived the shock of cold water, hypothermia is the next danger.

Hypothermia is a drop in core body temperature below the normal level that occurs from a prolonged exposure to cold weather, particularly in water-soaked clothing or from direct immersion. At this

lower temperature a person's muscle and mental functions are affected. Someone who is exposed to cold water, and becoming hypothermic, can exhibit progressive signs and symptoms such as:

- Shivering, slurred speech and semi consciousness
- Slow and weak pulse, slow respiration, lack of coordination, irrational, confused and sleepy behaviour
- Weak, irregular or absent pulse or respiration
- Loss of consciousness

If you end up in the water, do everything you can to conserve energy and body heat. Swim only if you can join others or reach a safe haven. Do not swim to keep warm.

Extend your survival time by:

- Wearing a Canadian-approved lifejacket or PFD. Valuable energy will be lost keeping your head above water if you are not wearing one.
- Climbing onto a nearby floating object to get as much of your body out of or above the water as possible.
- If possible, adopt a heat escape lessening position: cross your arms tightly against your chest and draw your knees up close to them.
- Huddle with others and make sure the sides of everyone's chest are close together, with arms around mid to lower back and legs intertwined.

Protect yourself by wearing a lifejacket or PFD, multiple light layers of dry clothing and a water or wind-proof outer layer. Other equipment that comes in a variety of styles and names, and provides additional protection from hypothermia include:

- Floater or survival suits: a full nose-to-toes PFD
- Anti-exposure worksuits: a PFD with a thermal protection rating
- Dry suits: to be used with a flotation device and a thermal liner
- Wet suits: to be used with a flotation device, traps and heats water against the body
- Immersion suits: to be used in extreme conditions when abandoning a vessel (usually for off-shore use)

Knowing how your safety equipment works, especially in water, is a good idea. Test it in a warm swimming pool or in calm water before you may have to use it in an emergency.

If there is warning your boat may be sinking, put on as much clothing as possible beneath your lifejacket or PFD.

Fuel safety and carbon monoxide awareness

Enclosed spaces containing fuel-burning engines or appliances should be well ventilated to avoid carbon monoxide build-up. Fuel-burning engines or appliances should also be certified or designed for marine use.