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Chapter 7

EMERGENCIES

According to *Boating Immersion and Trauma Deaths*, a 2011 report published by Transport Canada and the Canadian Red Cross, about 40% of all drowning deaths in Canada result from boating activities. Many victims died within swimming distance of a boat, a dock, or the shore. In all cases, the fatality was classified as an accident (in other words it was usually preventable).

The seven chapters of this study guide contain the information that you must know to pass a Transport Canada Boating Safety Test in order to obtain your Pleasure Craft Operator Card (PCOC).
This chapter contains the following sections:

7.1 COMMON TRAITS OF BOATING FATALITIES

The 2011 report *Boating Immersion and Trauma Deaths*, , which examined the deaths of more than 3,000 Canadian boaters over a period of 18 years, found that the most common types of incidents resulting in boating emergencies and fatalities are:

- Capsizing
- Falling overboard
- Swamping; and
- Collision.

The two most common contributing factors to boating emergencies and fatalities are:

- **Failing to wear a personal flotation device**;
- and
- **Alcohol- and drug-related boat operation**.

Victims of boating fatalities almost never intended to get wet. Many victims fell overboard (27 percent) or were in a boat that capsized or was involved in a collision (39 percent). The people who found themselves in these situations were almost never wearing a personal flotation device (PFD) or lifejacket. In fact, only about 13 percent of victims of boating fatalities were wearing a flotation device when they drowned. The rest (about 86%) were not wearing a flotation device. One in four victims (25%) did not even have a PFD or lifejacket in their boat. In addition 43% of victims died less than two metres from shore or safety.

Alcohol consumption is also often a contributing factor in boating accidents and is involved in four out of 10 (40 percent of) preventable boating fatalities.

Failure to wear a flotation device is the leading contributing factor in boating fatalities. Thus, when on the water, the single-most important thing that one can do to prevent drowning, is to always where a properly adjusted PFD or lifejacket of appropriate type, size, and fit.

Dangerous Misconceptions

The Canadian Safe Boating Council conducted a survey of Canadian boaters in 2004. One question the survey asked was: “Why not wear a life preserver?” The typical answers (misconceptions) were:

- You do not need a life preserver if you can swim well
- Wearing a life preserver is not required if a boater is skilled
- You do not need to wear a life preserver within sight of shore
- Wearing a life preserver is only necessary if the boat is moving

All of the above answers are dead WRONG. Wearing a life preserver is not yet a legal requirement and surveys show that most boaters feel that one need only make sure that a life preserver is close by when boating (which is about the same as thinking that you need not fasten your seat belt until just before your car crashes into something).

7.2 RESPONDING TO MALFUNCTIONS

The operator of a pleasure craft should check and maintain his or her pleasure craft on a regular basis to reduce the probability of breakdowns occurring.

In addition, when conducting regular maintenance checks of a pleasure craft, the operator should also check and maintain all personal and boat safety equipment to ensure that the equipment will function properly at all times.

What is the definition of “on a regular basis”? As a rule of thumb, check your craft and all personal and boat safety equipment at the beginning of every boating season and monthly thereafter to the end of the season.

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

1. **Alter the speed of the craft as appropriate to the circumstances –** this means that you should slow down enough to investigate the problem. If your engine is acting up, stop completely unless you are in danger and must maintain headway.

2. **Anchor the craft as appropriate to the circumstances –** if you have lost power and are drifting into a dangerous area, drop your anchor as soon as possible to maintain your position. If you are in a busy waterway, use paddles or oars to leave the channel and then either set an anchor or pull the boat up on shore;

3. **Investigate the problem –** if there is a problem with the engine, refer to the trouble-shooting section of the engine’s owner’s manual;

4. **Correct the problem if possible using your onboard tool kit –** freecourse.ca® recommends that all pleasure craft operators should carry an onboard tool kit which should contain at least: fuses, bulbs, a spare propeller and shear pin, nuts and bolts, penetrating oil, duct tape, spark plugs, and a spark plug wrench); **and**

5. **Use or exhibit signals to indicate distress and need of assistance if necessary**.

7.3 RESPONDING TO FIRE

If a fire breaks out on board, make sure that everyone puts on a flotation device immediately while the operator uses extinguishers to control the fire.

Always familiarise yourself with your fire extinguisher by reading the manufacturer's instructions (so that you know how to use it quickly and effectively in the event of a fire).

In the case of a small fire, activate a fire extinguisher per the manufacturer's instructions and aim the discharge nozzle at the base of the flames.

Sweep the discharge nozzle from side to side and for a few seconds after the flames are completely out. Otherwise, the fire may restart and there might not be enough charge left in the extinguisher to put it out again.

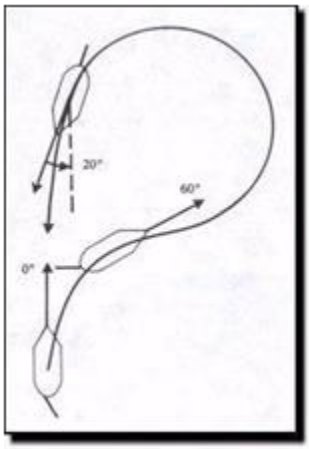
If your boat is moving when a fire starts, bring it to a stop and orient it so that the fire is downwind from you and stop the engine if it is safe to do so under the weather conditions.

Use extinguishers to control the fire and, if safe to do so, shut off the fuel source.

Even if your craft has an automatic fire extinguishing system, it must also carry the required portable extinguishers listed in Chapter 2 of this course.

7.4 RECOVERING A PERSON OVERBOARD

If a person falls overboard from a boat moving at only 3 knots (5.6 kph), in only 10 seconds he or she will be approximately 15 metres away (15 metres is the typical length of a buoyant heaving line).



The manoeuvre shown at left can be used to return to the position where the person fell overboard. When recovering a person overboard, **always manoeuvre to a position <u>downwind</u> of the person in the water so that the wind cannot push your boat over them (pushing them under your boat). Thus, you will recover the person over your windward side**.

To retrieve persons in the water, you should use a lifebuoy, a buoyant heaving line, a ladder, or other device designed to aid re-boarding the vessel. **Heaving lines and life buoys increase your ability to reach a person in the water without risking your life by leaving your vessel.**

The following procedure should be used if someone falls overboard:

1. **Sound the alarm immediately**;
2. **Slow down, stop if possible, and throw the person something buoyant to help stay afloat (it will serve as a marker if they become submerge**d);
3. **Assign one person (other than the driver) to keep sight of the person in the water and to continuously point to the victim's location; and**
4. **Carefully manoeuvre your vessel to a position that is downwind of the person in the water and recover them over the windward side of your vessel**.

As soon as you are close enough, throw the victim a buoyant heaving line or a lifebuoy secured to your boat with a line. As shown at left, always recover the person over the windward side of the vessel.

Emergencies occur without warning and progress relentlessly toward disaster. **Thus, always make sure that your buoyant heaving line is at hand and untangled (i.e.: ready to throw)**

A line attached by both ends to the vessel and draped over the side, approximately touching the water, provides a good makeshift step to help a person overboard climb back up to the deck.

The technique for recovering a person overboard should be practised to **familiarise you and your crew with emergency procedures and verify that all safety equipment is on board and in proper working order.** If someone falls overboard, you must be able to locate and retrieve them quickly, even at night or in rough weather, and especially in cold water. Practice by “rescuing” an object such as a stick of wood.

The main concerns for a person falling overboard are hypothermia and drowning. The severity of these risks varies based on weather, water temperature, sea state, time of day, speed of the pleasure craft, amount of clothes worn, whether or not one is wearing a flotation device, and the ability of others onboard to manoeuvre the vessel safely back to effect a pick-up.

Although falling overboard is common in some boating activities (ex: falling off a PWC) and uncommon in others (swept overboard at sea); this type of event must always be treated seriously.

Prevention

While the steps outlined above will aid you and your crew in dealing with this type of life-threatening emergency, the best way to deal with this eventuality is to prevent it from occurring in the first place. To avoid going overboard, take the following suggestions to heart:

- Don't rock the boat – Keep oneself low in the boat on or near the boat's centreline when moving around on board.
- Watch your step – Do not step on the gunwale when boarding or leaving the boat.
- Stay inside the boat – Do not sit on the gunwale (especially when the boat is underway) and never ever ride the bow when the vessel is underway. Most falls overboard are due simply to the fact that the victim was standing at the side of the boat.
- Stay in touch – Hold onto a rigid part of the boat when moving around on board. While using one hand to perform whatever task is required, use the other to hold onto some part of the boat; there is a reason why real sailors learn to tie knots one-handed.
- Do not cruise with booze – Consuming alcohol will reduce balance and co-ordination, increase reaction time, and impair judgment. According to the Canadian Coast Guard, alcohol is a leading contributing factor in boating fatalities.
- Stay on shore in bad weather – Go ashore when conditions start to exceed one's ability or equipment. If you get caught out on the water in heavy weather such as a thunderstorm, reduce speed and head for the nearest shore that you can approach safely.

7.5 RESPONDING TO A COLLISION

Collisions on the water can result from hitting a submerged object or from colliding with a surface object, such as another vessel.

If your vessel strikes a submerged object, have all passengers don flotation devices immediately, adjust your vessel's course and speed to proceed immediately toward safety, and investigate if possible to see if your vessel is taking on water.

If your vessel is involved in a collision with another vessel, immediately have all on board don flotation devices and assess the damage to both vessels. The best way to keep you and your passengers safe is to stay out of the water. Thus, if both vessels are in danger of sinking and there is a risk of loss of life, issue a distress signal. Then **concentrate your efforts on saving the vessel that is least damaged**. Once damage is brought under control on the lesser-damaged vessel, shift efforts to keeping the other vessel afloat.

Under the *Criminal Code of Canada*, if you are involved in an accident with another vessel you must render assistance to that vessel. If you happen upon the scene of a collision, then **under Section 451 of the *Canada Shipping Act*, 2001, the operator of a pleasure craft, insofar as he/she can do so without serious danger to his/her craft and passengers, must assist any person found on any waters and in danger of being lost.**

It may be that damage in an accident is slight. Regardless, all operators of vessels involved in an accident must exchange their names, addresses, and contact information.

Preventing Collisions

The best way to prevent a collision is to reduce the risk by always adhering to the following practices:

- Maintain a safe speed – A safe speed is one that allows you enough time to avoid a collision)
- Slow down in congested areas – Give yourself more time to react
- Be alert for swimmers and divers – Keep well outside of marked or known swimming and diving areas
- Maintain a proper lookout – Be constantly alert to the speed and direction of all traffic around you.
- Do not cruise with booze – Consuming alcohol will reduce balance and co-ordination, increase reaction time, and impair judgment.

7.6 RESPONDING TO COLD WATER SHOCK

According to data from Transport Canada, an average of 149 people die annually due to cold water immersion. Many victims died within swimming distance of a boat, a dock, or the shore.

In 2004, 60% of drowning victims succumbed in water that was less than 10 degrees C. And 34% drowned in water that was between 10 to 20 degrees C. The statistics bear out the cold, hard facts: Most people who die on the water do not expect to get wet (most fall in or their boat capsizes), are not wearing a flotation device, and fall into cold water (water that is colder than 15 degrees C).

The facts are: If you go into the water while not wearing a life preserver (flotation device), then it is unlikely that you will survive. And if you are in cold water (colder than 15 degrees C) and you are not wearing a flotation device, then it is *very* unlikely that you will survive.

Cold water shock – Many boaters mistakenly think that if they can swim, then they do not need to wear a flotation device. This is wrong. Sudden immersion in cold water will cause you to experience a condition called **cold water shock**, characterised initially by involuntary gasping, deep hyperventilation, and your muscles are almost instantly paralyzed. This period of paralysis will last about one minute. If you are not already wearing a flotation device during this period, then it is very likely that you will drown. Trying to get a hold of a flotation device while experiencing cold water shock, let alone putting one on, will be nearly impossible because of the dramatic physiological changes your body will be experiencing. You can protect yourself when falling into cold water by always wearing a flotation device. A lifejacket or PFD (personal flotation device) will keep you afloat while you gain control of your breathing and will prevent you from drowning from loss of muscle control. Sadly, many people do not understand cold water shock and the simple steps that will help them to avoid this danger.

Recognising symptoms of cold water shock – The immediate (first-stage) symptoms (within one minute of immersion) are involuntary gasping, difficulty breathing (deep hyperventilation), increased heart rate, and increased blood pressure. The first stage of cold water shock will pass in about one minute. During that time you must concentrate on suppressing panic, staying afloat, and getting control of your breathing. In the second stage of cold water shock, the initial shock is followed in a short time by progressive cold incapacitation during which; as the muscles and nerves in the limbs get colder, a person loses the ability to self-rescue or even to swim. 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 succumb to the effects of cold water shock.

Treatment – If there is no way to get to a medical facility within 30 minutes, then a person suffering from cold water shock (i.e.: a person who is mildly hypothermic) should be warmed up as follows:

- Shivering is a very effective warming process, especially when the person is well insulated. Shivering should be fuelled by calorie replacement with warm fluids containing sugars. The sugar content is actually more important than the heat in warm liquids. Make sure that the person is capable of ingesting liquids without choking or vomiting. Alcohol and tobacco use should not be permitted because they constrict blood flow.
- External, warm heat can be applied to high heat transfer areas such as the chest and underarms. Active heating of the skin is beneficial as it increases comfort, preserves energy stores, and reduces cardiovascular stress.
- Light exercise such as walking produces heat but should only be attempted after a mildly hypothermic person is dry, has had calorie replacement, and has been stable for at least 30 minutes. A warm shower or bath should ***never*** be given as part of the warming process.

Preventing Cold Water Shock

The best way to prevent cold water shock is to reduce or eliminate the risk of falling overboard or capsizing. Thus preventative actions one can take include:

- Not overloading your vessel
- Avoiding heavy weather conditions (strong winds and large waves)

Always ensure that everyone on board is wearing a Transport Canada approved flotation device (i.e.: a flotation device cannot help you if you are not wearing it). Accidents happen quickly; it is too difficult to find and don a life preserver when one is already in the water.

7.7 RESPONDING TO HYPOTHERMIA

If you have survived **cold water shock**, then **hypothermia** is the next danger that you face.

Prolonged exposure to low temperatures (such as by immersion in cold water) will lead to **hypothermia. Hypothermia is a drop in core body temperature to below the normal level** (to below 37° C or 98.6° F). Hypothermia weakens a person's muscles, reduces co-ordination, and slows mental functions. A person suffering from hypothermia will exhibit the following progressive signs and symptoms:

- **Early Stage – Shivering and slurred speech. Victim is conscious but withdrawn.** Involuntary full-body shaking or shivering is a natural response of the body to try and keep warm.
- **Intermediate Stage – Slow and weak pulse, slow respiration, lack of co-ordination, shivering is reduced or absent** (the body is too exhausted to keep shivering)**. Victim may be irrational, confused, and sleepy.**
- **Final Stage – Weak, irregular, or absent pulse or respiration.** In the final stage, the victim will lose consciousness.

To extend your survival time in water, you must conserve energy and body heat. An average person, wearing light clothing and a PFD or lifejacket may survive 2.5 to 3 hours in 10° C (50° F) water by remaining still. This survival time can be increased considerably by getting as far out of the water as possible and covering the head.

You lose body heat 25 times faster in cold water than in cold air at the same temperature, and that factor can be increased substantially with movement like swimming if you are not wearing thermal protection such as a floater jacket and pants or a one-piece survival suit.

Ways to delay the onset of hypothermia

If you find yourself in cold water, in addition to having proper flotation, there are some things that you can do to delay the onset of hypothermia:

1. **Wear your PFD or lifejacket**. The PFD helps insulate the body. In addition, energy is lost trying to stay afloat without it.

2. **Boaters can protect themselves further by wearing their PFD in conjunction with multiple light layers of clothing, a water- or wind-proof outer layer of clothing, or survival clothing (such as a dry suit, wet suit, immersion suit, or exposure coverall)**. **Keep your clothing on when in cold water**.

3. **If alone, climb onto a nearby floating object** to get at least part of your body out of the water. **Getting part or all of your body out of the water will double your survival time.**

4. If you cannot get all or part of your body out of the water and you are alone, then **adopt the heat escape lessening position** (HELP) by crossing your arms tightly across your chest, crossing your legs at the ankles, and then drawing the knees up close.

5. HUDDLE - If you cannot get out of the water and you are in a group, **huddle with the other persons by getting the sides of everyone's chest close together**, with arms around the mid to lower back, and legs intertwined.

Treatment for Mild (Early-Stage) Hypothermia

Hypothermia will eventually cause the body's normal functions to stop altogether (i.e. the victim will pass out, go into shock, and die) unless the following steps are taken to reverse the effects of hypothermia:

1. **Remove the victim from the source of the cold or exposure;**

2. **Provide dry shelter such as in a boat cabin, tent, or cottage;**

3. **If possible, prevent a further decrease in body temperature and warm the person's body gradually by:**
   - **Replacing wet clothing with dry clothing (only remove wet clothing if you can provide a warm dry covering such as a sleeping bag or a warm environment).**
   - **Wrapping the person in blankets.**
   - **Placing dry coverings over the person.**
   - **Covering the person's head and neck.**
   - **Covering the person with an insulating device and vapour barrier.**
   - **Applying warm dry objects at a temperature between 40°C and 45°C. Under arms and the chest are good areas to warm gradually. Direct body-to-body contact is an effective way to provide heat.**

4. **If asked for, offer warm milk, water, or juice but do not give alcohol or a stimulant** (a stimulant is something that contains caffeine; such as tea, coffee, hot chocolate, cocoa, or cola).

5. **Do not rub or massage the surface of the victim's body or extremities as this can send cool blood to the body's core causing the heart to defibrillate. It can also damage nerve endings at the skin.**

6. **Use or exhibit signals to indicate distress and need of assistance**.

Always carry an emergency kit on board your vessel. At a minimum, it should include a flashlight, whistle, knife, first aid kit, emergency rations, drinking water, and dry clothing.

Treatment for Moderate to Severe Hypothermia

Moderate to severe hypothermia is a serious medical condition requiring proper handling and treatment and, in severe cases, immediate transport to a medical facility. There are some specific things you can do (see next paragraph) to help stabilize the individual prior to the arrival of paramedics.

Great care must be taken in handling a moderate or severely hypothermic person:

- Extraction from the water must be as gentle as possible to avoid ventricular fibrillation.
- No part of the body should be rubbed or manipulated.
- The person should be placed in a horizontal position, wet clothing gently cut from the body, and the body dried and insulated as best as possible using dry blankets, dry clothing, or other protective materials.
- If shelter is available, keep the person protected from the elements and insulated from the cold ground or snow using sleeping bags, clothing, backpacks, or even evergreen boughs.
- If vital signs (temperature, pulse, and respiration) are present, the person should be warmed up as previously described but not allowed to sit up or stand until warmed up. **Under no circumstances should the person be placed in a warm shower or bath**. **No oral fluids or food should be given and no attempts should be made to warm up with exercise, including walking**.

After-drop

In any hypothermic individual, core body temperature continues to decrease after rescue as cold blood from the extremities continues to return to the core, thus lowering the core temperature further. **This is a condition called after-drop, which may last several hours in a moderate to severely hypothermic person.**

If you are helping a hypothermic person, be gentle; internal organs will be sensitive to physical shocks. The victim should remain at rest as inactive as possible so that blood from their cold extremities will not reach their core too quickly. A cold heart is particularly susceptible to ventricular fibrillation. Warm the victim up gradually and gently (thus do not use a warm bath or a warm shower). During all first aid efforts, watch for changes in the victim's vital signs, which are: body temperature, blood pressure, pulse, and respiratory rate.

7.8 RESPONDING TO HEAT STROKE, HEAT EXHAUSTION, AND SEASICKNESS

Heat Stroke

Condition - **Heat stroke** is an acute condition that is caused by prolonged exposure to excessive heat and/or humidity. The heat-regulating mechanisms of the body eventually become overwhelmed and unable to effectively deal with the heat, causing body temperature to climb uncontrollably.

Symptoms - Common symptoms and signs of heat stroke include: High body temperature, absence of sweating, hot red skin (flushed dry skin), rapid pulse, difficulty in breathing, strange behaviour, hallucinations, confusion, agitation, and disorientation.

Treatment - Heat stroke is a medical emergency and an ambulance should be called immediately. While waiting for help to arrive, move the person to a cooler environment, or place them in a cool bath of water (but only as long as they are conscious and can be attended continuously). Alternatively, moisten the skin with lukewarm water and use a fan to blow cool air across the skin. You can give cool beverages by mouth but only if the person has a normal mental state and can tolerate it.

Heat Exhaustion

Condition - **Heat exhaustion** is a condition in which the body is unable to cool itself. At high temperatures, the body cools itself largely through perspiration and evaporation of sweat. Perspiration transports heat from inside to the outer layers where it is then dissipated by radiation or convection. The evaporation of sweat from the skin's surface furthers cooling, since the heat required for the evaporation process to occur is drawn from the body. Note: If the body becomes so dehydrated as to prevent the production of sweat, then this avenue of heat reduction is closed. When the body is no longer capable of sweating core temperature begins to rise swiftly.

Symptoms - Symptoms of heat exhaustion include headache, muscle cramps, dizziness, fainting, skin that is cool and moist, a pulse rate that is fast and weak, and breathing that is fast and shallow.

Treatment - Home care is appropriate for mild forms of heat exhaustion (but heat stroke is a medical emergency and an ambulance should be called immediately). For mild cases of heat exhaustion: rest in a cool, shaded area, give cool fluids such as water or sports drinks (that replace the salt that has been lost). Salty snacks are appropriate as tolerated. Loosen or remove clothing. Apply cool water to skin. Do not use an alcohol rub. Do not give any beverages containing alcohol or a stimulant (caffeine, for example, is a stimulant).

Seasickness

Condition - The cause of sea sickness has never been completely clarified but it is felt that it results from sensory conflicts between what one sees and feels compared to what the body is used to.

Symptoms – Symptoms start with a feeling of mild nausea and can progress to a bad case of the sweats, followed by an upset stomach and possibly vomiting.

Treatment - Sea sickness can be much reduced by the use of Scopolamine, which can be administered transcutaneously (via a patch). This drug causes drowsiness and should not be used regularly by a person piloting a vessel.

7.9 RESPONDING TO HULL LEAKS OR FLOODING

During the operation of a pleasure craft the hull may suffer damage that causes a leak (such as striking a submerged object hard enough to hole or crack the hull) or a component of the hull may fail and cause a leak (such as when a gasket around a through-hull fitting fails).

The following are actions that you should take in response to a hull leak or flooding:

- **If your craft is moving, bring it to a complete stop –** this will reduce water pressure against the hull and, thus, the amount of water entering through the hole or leak;
- **Start bailing out the water –** water can be removed from a bilge, hold, or other compartments of the pleasure craft by using either hand bailers, manual pumps, or bilge pumping systems as appropriate to the circumstances and the craft;
- **Locate the source of the hull leak or flooding –** if possible, search for holes or failed gaskets while maintaining bailing;
- **Stop the leakage or the source of flooding if possible –** some items that can be used to stop or to slow a leak include tapered soft wooden plugs, rags, foam sponges, towels, or some other soft material; and
- **Use or exhibit signals (as outlined in Section 7.11 of this chapter) to indicate distress and need of assistance.**

Bilge Pumps:

On larger pleasure craft (14 metres in length and longer) you will rely on the vessel's built-in bilge pumps to remove leakage from the craft. Built-in bilge pump arrangements can remove water from your vessel faster than manual bailing alone. You still must have manual bailing equipment (bailer or a manual pump) on board.

If the bilge pumps fail, then manual bailing may not be sufficient to keep the craft afloat. Long before you are in such an emergency, you should have ensured that you have one or more manual pumps on board and that all bilge spaces on your boat are accessible by manual pumps.

7.10 RESPONDING TO CAPSIZING, SWAMPING, SINKING, OR RUNNING AGROUND

The first action to always take when a vessel has run aground is to determine whether the vessel or passengers are in danger.

The following actions should always be taken in the event that your craft should capsize, swamp, run aground (and be in danger), or sink:

1. **Immediately ensure that everyone on board is wearing a PFD or a lifejacket;**
2. **Stay with the craft when it is appropriate to do so** (i.e.: the craft is designed not to sink when swamped)**;**
3. **Check that all on board are accounted for and safe; and**
4. **Use or exhibit signals to indicate distress and need of assistance.**

If your boat capsizes but is in no danger of sinking, climb onto the overturned hull and signal for assistance. Removing yourself from the water will prolong your survival time in cold water as well as make you more visible to potential rescuers. Do **not** leave a floating vessel to swim ashore; **the shore is always more difficult to reach that it appears.**

Abandoning Ship

The method you should use to abandon a vessel depends on how much time is available. If, for instance, your boat is on fire and sinking, then grab a PFD and go over the side as quickly as possible. If you have the presence of mind, be sure to jump over the windward side; so that your sinking or burning boat will drift away from you once you are in the water. When jumping from your boat, jump feet first, with your legs together and mouth closed.

Once you are in the water, move clear of the boat and check to make sure that all crew members are accounted for. If the hull stays afloat, stay nearby or climb back aboard; the hull is larger than you and easier to spot and hypothermia can be avoided longer by getting out of the water. Compared to being in the water, keeping your body above water can double the time that you can resist hypothermia.

If serious injury does not seem to be imminent, you can take more time in abandoning ship. Instruct all on board to put on their PFDs. If you have a radio, send a distress call. If you are in sight of land, launch a distress flare or use some other method to signal for help (see list of common distress signals in Section 7.11). If you have a raft or dinghy, launch it and put everybody on board.

Prevention of Capsizing or Swamping

The best way to prevent capsizing or swamping is to reduce or eliminate the risk in advance by always adhering to the following practices:

- Obey your vessel's Compliance Notice:
  - Do not carry too many passengers or too much weight
  - Do not install an outboard motor that is too large for your boat
- Position passengers and gear on board so as to evenly distribute their weight
- Keep the load's centre of gravity as low as possible in the boat. Lash gear down or stow it under seats or in lockers to prevent uncontrolled movement of the gear.
- Do not go out on the water during bad weather, strong winds, or heavy wave conditions.

7.11 DISTRESS SIGNALS

Knowing how to send a distress message and to request help can mean the difference between life and death in an emergency. **The midst of an emergency (such as trying to keep your boat from sinking or trying to put out a fire) is not the best time to sit down and figure out how to signal for help. On the water, you may only get one chance to call for help**.

Types of Distress Signals

You should recognize and know how to send the various different types of distress signals for two reasons:

1. To be able to signal for help in the event of an emergency; and
2. To be able to recognize a distress signal so as to be able to come to the aid of someone in distress.

Under Section 131 of the *Canada Shipping Act*, 2001, every person who is the qualified operator of a vessel in any waters, on receiving a signal from any source indicating that a person, a vessel, or an aircraft is in distress, shall proceed with all speed to render assistance and shall, if possible, confirm to the persons in distress or the sender of the signal that the signal was received. If the person receiving the distress signal is unable or, in the special circumstances of the case, considers it unreasonable or unnecessary to proceed to the assistance of a person, a vessel, or an aircraft in distress, then that person is required to enter the reason in the official log book of the vessel.

The *Criminal Code of Canada* requires all boaters to assist those in distress if it can be done without endangering your own life or the safety of your vessel. If you have an operating radio or mobile phone, you must also contact the nearest Rescue Co-ordination Centre and inform them of the type and location of a distress signal that you see or hear. **It is also an offence under the *Criminal Code of Canada* to make or report a false distress signal.** False alarms can cause search and rescue personnel to be unavailable for a real emergency.

The *Collision Regulations* require that as a pleasure craft operator, you must be able to recognise, use, or exhibit the following signals (presented below) to indicate distress and need of assistance.

Knowing these standard distress signals will enable you to recognise when other boaters need help as well as be able to signal for help yourself should it ever be required.

- A continuous sound signal from a fog horn, air horn, whistle, or bell, or gun shots or other explosive sound signals fired at intervals of one minute.

- Parachute flares

- Multi-star rockets - throwing aloft two red-coloured star flares, the second fired 15 seconds after the first.

- A hand-held flare giving off red-coloured light.

- A smoke signal giving off orange-coloured smoke

The most common feature of pyrotechnic distress signals (distress flares) is that they are valid for four years from their date of manufacture.

- Slowly and repeatedly raising and lowering arms outstretched to each side (used when help is close by and there is no need to fire a flare to get someone's attention). Note: Frantically waving ones arms, or a hat, or a towel, is not a distress signal.

- Flames showing onboard the vessel

- A signal consisting of a square black-coloured flag having above or below it a black-coloured ball (or anything resembling a black-coloured ball).

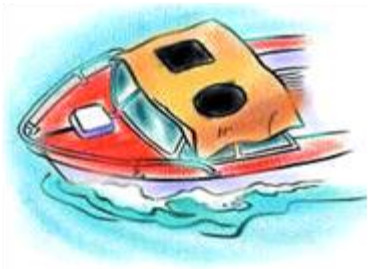
- A signal consisting of the word "Mayday" broadcast by radiotelephone. The signal "Mayday" indicates a serious, life-threatening emergency (such as a sinking vessel). On waters serviced by the Canadian Coast Guard, the VHF marine radio is generally the most effective way to broadcast your distress. Use channel 16 and repeat "Mayday" three times; then state the nature of your emergency and your location.

- A signal consisting of the words "Pan-Pan" broadcast by radiotelephone. The signal "Pan-Pan" indicates a non-life-threatening emergency (such as a break-down). On waters serviced by the Canadian Coast Guard, the VHF marine radio is generally the most effective way to broadcast your distress. Use channel 16 and repeat "Pan-Pan" three times; and then state the nature of your emergency and your location.

- The Morse code SOS signal (dot-dot-dot, dash-dash-dash, dot-dot-dot) transmitted by any signalling method (ex: by flashlight)

- The International Code Signal of distress; indicated by displaying together the international code flags for the letters 'N and 'C'.

- A piece of orange-coloured material (such as canvas) displaying a black square shape (or anything resembling a square shape) and a black circle, big enough to be seen from the air.



- A high-intensity white light flashing 50 to 70 times per minute.

- A signal transmitted from an emergency position-indicating radio beacon (EPIRB).

- Marker dye (various colours) discharged onto the water beside your vessel.

Using Emergency Marine Communications Equipment

Having emergency communications equipment onboard and knowing how to use it to communicate distress messages and seek assistance in an emergency could save your life. **Regulated marine distress and safety communication equipment includes devices such as**:

- Marine VHF radios with optional digital selective calling (DSC), on channel 70
- Marine MF/HF DSC radios
- Emergency Position-Indicating Radio Beacons (EPIRBs)
- NAVTEX
- Inmarsat

Global Maritime Distress and Safety System

Regulated marine distress and safety equipment (such as radios and EPIRBS) work together to form the **Global Maritime Distress and Safety System** (GMDSS). **This combination of equipment quickly relays distress alerts to the Canadian Coast Guard and vessels in the immediate vicinity**.

Although recreational vessels are not required to have equipment that is GMDSS-compatible, it is highly recommended. If your pleasure craft is equipped with GMDSS-compatible equipment, you should connect it to a global positioning system (GPS) receiver so that your exact position is transmitted automatically during a distress call.

Marine VHF Radios 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 sends automatic digital distress alerts. The Canadian Coast Guard supports DSC Channel 70 services in many areas.

Remember, **VHF radio Channel 16 is used for emergency 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 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 VHF/DSC radio to get maximum benefits from the DSC 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 to users free-of-charge by Industry Canada. For more information, call Industry Canada at 1-800-667-3780 or visit their web site (http://www.ic.gc.ca).

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

Under Section 5(1)(a)(iii) of the *Radio Communication Act*, operators of VHF marine radios must obtain a Restricted Operator Certificate - Maritime (ROC-M).

Levels of Distress when Reporting an Emergency

There are four levels of priority (levels of distress) when reporting an emergency verbally on a marine radio using standard marine communications rules:

1. **Distress** – **A condition of being threatened by grave and/or imminent danger and requiring immediate assistance**. If you are in grave and imminent danger (for example, your craft is taking on water and you are in danger of sinking or capsizing), then use Channel 16 and repeat the word "**MAYDAY**" three times. Then state the name of your vessel, its location, the nature of your emergency, and the type of assistance needed.

2. **Urgency** – **A condition concerning the safety of a vessel or of someone on board or within sight but which does not require immediate assistance**. If you need assistance but are not in immediate danger (for example, your craft's motor has quit and you are adrift and unable to reach shore), then use Channel 16 and repeat the phrase "**PAN-PAN**" three times. Then state the name of your vessel, its location, the nature of your problem, and the type of assistance needed.

3. **Safety** – When a station calling is about to transmit a message concerning the safety of navigation or important meteorological warnings, the caller will precede the message by repeating the word "**SECURITY**" three times, and then will state the warning message.

4. **Non-urgent communications** – Non-urgent communications can be made on any channel other than Channel 16 or Channel 70. Channels 16 and 70 are reserved strictly for emergency situations only.

Boaters should always pay attention to safety ("Security") calls preceding meteorological warnings that can affect their safety on the water.

Cellular Telephones (Cell *16)

With a cellular phone, you can contact a Rescue Co-ordination Centre directly by dialling *16 for the Canadian Coast Guard Marine Communications and Traffic Services Centres. **However, a cell phone is not a reliable substitute for a marine radio and not the best means of issuing a distress call. Cell phones can lose reception and are damaged easily by moisture. In addition, calling from your cell phone does not alert 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.

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

Global Positioning System (GPS)

More and more pleasure craft operators rely on a global positioning system (GPS) device to tell them where they are on the water. The GPS is a worldwide radio-navigation system that incorporates a network of satellites and monitoring stations.

GPS receivers can calculate your location anywhere on the planet to within 30 metres (the Canadian Coast Guard supports a differential GPS that has an integrity monitoring feature and provides accuracy to within 10 metres).

If your craft is equipped with a GPS receiver, connecting it to your DSC radio is a very good idea. This ensures that when a distress alert is transmitted rescuers will immediately know your precise location and will arrive sooner. Keep in mind that you should not rely on a GPS system exclusively (they are easy to damage on a boat); thus, it is recommended that you have a back-up system (such as an up-to-date marine chart).

Emergency Position-Indicating Radio Beacon

Distress signals can also be sent via a device called an **Emergency Position-Indicating Radio Beacon** (EPIRB). An EPIRB is a buoyant radio distress beacon that, when activated, repeatedly transmits a distress signal that can be picked up by overhead weather satellites.

These devices can be activated manually with a switch or they can activate automatically when submerged as they float free of a sinking or overturned vessel. The devices can transmit for hours. Their signals communicate your position to a network of satellites which transfer the signal to joint search and rescue co-ordination centres.

Although pleasure craft are not required to carry an EPIRB, carrying this type of device is highly recommended.

Although recreational craft are not required to carry an EPIRB, if you are boating offshore or in a remote location (such as the Labrador coast where VHF radio coverage is limited), then carrying an EPIRB on board is a must.

EPIRBs must be registered with the Canadian Beacon Registry.
Phone: 1-877-406-7671.
E-mail: cbr@sarnet.dnd.ca
Web site: https://www.cbr-rcb.ca/cbr/presentation/other_autre/index.php

Using Pyrotechnic Distress Signals (Flares)

Use flares only in times of real distress. **If an emergency requires you to use a flare, first familiarise yourself with the operation of your flares (i.e. read the manufacturer's instructions**) **to ensure that you know how to use the device(s) safely and effectively**.

Before purchasing flares, make sure that they are approved by Transport Canada. Pyrotechnic distress signals (distress flares) are **valid only for four years from the date of manufacture**. The date of manufacture is stamped on each flare. **To dispose of your outdated flares, seek advice from the retailer selling the flares, your local fire department or law enforcement agency, or Transport Canada.**

Store flares vertically in a cool, dry, secure location (such as a watertight container) to help them retain their efficiency, but keep them accessible in case of an emergency. Note: "Secure location" means keep them away from children.

It is a good idea to always carry more than one type of pyrotechnic distress signal on your vessel. There are four types of approved distress flares. Each type of flare has specific characteristics and uses:

1.) **Parachute Flare** – This type of aerial flare employs a single red star flare. Propelled by a rocket, the magnesium flare reaches a height of approximately 300 metres (984 ft.) and, with the aid of a parachute, drifts back down to earth slowly. This flare burns for about 40 seconds and is easily observed from the surface or from the air.

When launching this type of distress flare, it should be fired at an angle into the wind so that the wind will cause the parachute to drift back over your position. In a situation with high wind velocities, you should lower the angle at which the flare is fired into the wind (but never let the angle at which the flare is launched decrease below an angle of 45 degrees from the horizontal).

2.) **Multi-Star Rocket** – This type of aerial distress flare employs two or more red star flares (magnesium flares propelled by rockets) fired from a flare gun. When fired straight up, they can reach a height of 100 metres (328 ft.). They burn for four or five seconds and are easily visible from the surface or from the air.

Multi-star flares should be fired almost straight up from your vessel to get maximum altitude. Some multi-star flare guns fire two red star flares simultaneously, others fire only one flare at a time. When using a single-shot flare gun, you must fire two flares in rapid succession; within 15 seconds of each other. Thus, read the instructions and know how to re-load and fire the second shot quickly.

3.) **Hand-held Flare** – A hand-held flare is a red-flame torch that can be held aloft in one's hand. It has limited surface visibility. Thus, it is best suited to helping rescuers pin-point your location during an air search when rescuers are close by.

When employing this type of distress signal, be sure to ignite the flare while holding it clear of the vessel on the downwind side. A hand-held type of flare burns for about one (1) minute. **While it is burning, keep the flare clear of the vessel on the downwind side so that sparks blow away; and if a spark does burn your hand, you will drop the flare into the water instead of into your boat. To preserve your night vision, do not look at the flare while it is burning**.

4.) **Smoke Flare** – This type of flare produces a dense, orange-coloured smoke for approximately three (3) minutes. Some types are made especially for pleasure craft, last for only one minute, and are available in packages of three.

Smoke flares are insulated (you can hold one aloft in your hand) and some are buoyant (they can be placed in the water). **If a smoke flare is buoyant, it is advisable (once it is activated) to place it in the water on the *downwind side* of the vessel (so that the smoke and fumes blow away from you)**.

Pleasure craft greater than 6 m (19’8”) in length and pleasure craft up to 12 metres (39’4”) in length are exempt from carrying pyrotechnic distress signals if:

- Operating in a river, canal, or lake in which it can at no time be more than one nautical mile (1.85 km) from shore
- Engaged in an official competition, or in final preparation for an official competition, and have no sleeping arrangements.

End of Chapter 7

Chapter 7 Review Quiz

The questions included in the following quiz are not sample questions taken from actual tests. They are provided merely to acquaint you with the breadth and depth of knowledge required to pass a Transport Canada Boating Safety Test. Merely memorizing these questions and answers will not be adequate preparation to pass the Boating Safety Test; you must acquire an understanding of the material contained in all seven chapters of this free course. Every topic in this course is a potential test question.

QUESTIONS

Select the response that best answers the question.

1. **What are the four most common incidents that result in boating fatalities?**

2. **What are the two most common contributing factors to boating emergencies and fatalities?**
3. **What percentage of victims of boating fatalities were wearing a flotation device when they drowned?**

4. **What is the leading contributing factor to boating fatalities?**

5. **Alcohol consumption is a contributing factor in what percentage of preventable boating fatalities?**

6. **What is the single-most important action a boat operator must take to prevent drowning?**

7. **If your pleasure craft's engine has quit, you are adrift, and drifting toward shore of some other hazard, what is the first thing to be done?**

8. **What steps should be taken immediately upon a malfunction occurring on a pleasure craft?**

9. **What actions should you take if your vessel has run aground or is sinking?**

10. **What is the fastest way to remove water from the bilge of a larger pleasure craft (a pleasure craft that is 14M in length or longer)?**

11. **What are the immediate steps to take if a fire breaks out on board?**

12. **What is the best thing to do if one finds oneself in cold water (such as in Spring or Autumn) but the overturned hull is still afloat?**

13. **What are some ways to retrieve persons in the water?**

14. **Describe the basic re-boarding equipment that is required on all vessels.**

15. **What steps should be followed when a person is lost overboard.**

16. **On what side of the boat should you recover a person from the water, the windward side or downwind (leeward) side? Why?**

17. **What must you do when coming upon any person in Canadian waters who is in danger of being lost?**

18. **What is cold water shock?**

19. **How does the human body react to cold water shock?**

20. **What are some symptoms of hypothermia?**

21. **How do you treat hypothermia?**

22. **What is after drop?**

23. **Why is after drop so dangerous?**

24. **What is the first step that one should take after running aground?**

25. **What do you do if your vessel springs a leak?**

26. **What series of actions should you take if your vessel runs aground, capsizes, or is sinking?**

27. **What are the symptoms of heat stroke?**

28. **How do you treat heat stroke?**

29. **What are the symptoms of heat exhaustion?**

30. **How do you treat heat exhaustion?**

31. **What are the four levels of distress when reporting an emergency via VHF radio?**

32. **List five or more types of distress signals that every pleasure craft operator should know.**

33. **Should a parachute flare be fired upwind or downwind?**

34. **Should a smoke flare be deployed upwind or downwind?**

35. Why is it important to keep as much of your body as possible out of the water in the event of capsizing or sinking?

36. If you have a VHF radio on board, which channel should you use to send a distress call?

37. Which is the better device for emergency communications: VHF radio or a cellular telephone? Why?

38. What is/are the major factor(s) governing the number and types of distress flares to be carried on board a pleasure craft?

39. What is the proper way to store pyrotechnic distress signals (flares)?

40. What is one thing you must always do before attempting to use flares?

41. Which of the following is a distress signal?

a.) 

b.) 

c.) 

d.) 

42. What is the best way to dispose of outdated flares?

43. Why should boaters learn all of the various types of distress signals?

ANSWERS

1. The four most common traits of boating fatalities are:
   - Capsizing;
   - Falling overboard;
   - Swamping; and
   - Collision.

2. The two most common contributing factors to boating emergencies and fatalities are:

   - Failing to wear a personal flotation device; and

   - Alcohol- and drug-related boat operation.

3. Only about 13 percent of victims of boating fatalities were wearing a flotation device when they drowned. The rest (about 86%) were not wearing a flotation device.

4. The leading contributing factor to boating fatalities is the failure to wear a flotation device while on the water.

5. Alcohol consumption is involved in four out of 10 (40 percent of) preventable boating fatalities

6. To prevent drowning, always ensure that everyone on board is wearing a properly adjusted PFD or lifejacket of appropriate type, size, and fit. Note: Having one “at hand” is not the same as wearing one.

7. Drop anchor, then proceed to trouble shoot

8. The following actions should be taken in the event of any malfunction:
   - Slow down (if this helps, head for shore).
   - If slowing down does not help, then shut off the motor and anchor the craft or paddle to shore;
   - Find the problem if you can.
   - Fix the problem if you can.
   - If you cannot fix it, then signal for help (you are in trouble)

9. Most pleasure boats must have at least a buoyant heaving line on board that is at least 15 m long.

10. On larger pleasure craft (14 metres in length and longer), to remove water from the bilge, one will have to rely on the bilge pumps.

11. If a fire breaks out on board, make sure everyone puts on a flotation device immediately while the operator uses extinguishers to control the fire.

12. If shore seems to be close by, ignore it. Cold water is deadly. The best thing to do is to get your body out of the water by mounting the overturned hull. If help does not seem likely, then use your arms and hands to paddle the overturned hull closer to shore.

13. To retrieve persons in the water, you should use a lifebuoy, a buoyant heaving line, or a ladder or other device for re-boarding the vessel. Heaving lines and life buoys increase your ability to reach a person in the water without risking your life by leaving your vessel.

14. A heaving line is basic reboarding equipment for all types and sizes of vessels. Longer vessels and vessels that stand high out of the water (i.e.: have high freeboards) must carry better equipment such as reboarding ladders and lifting slings.

15. Sound the alarm, slow down or stop, throw them something buoyant, assign a spotter, manoeuvre to a position downwind, and recover over the windward side.

16. Windward side

17. Under Section 451 of the Canada Shipping Act, the operator of a pleasure craft, insofar as he/she can do so without serious danger to his/her craft and passengers, must assist any person found on any waters and in danger of being lost.

18. Cold water shock is characterised initially by involuntary gasping, deep hyperventilation, and your muscles are almost instantly paralyzed.

19. The human body's reaction to the condition called cold water shock is characterised initially by involuntary gasping, deep hyperventilation, and your muscles are almost instantly paralyzed. Thus, trying to get a hold of a flotation device while in cold water, let alone putting one on, will be nearly impossible because of the dramatic physiological changes your body will be experiencing. You can protect yourself when falling into cold water by always wearing a flotation device. 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 cold water shock and the simple steps that will help you to avoid this danger.

20. Initial symptoms of hypothermia are shivering and slurred speech.

21. Remove the victim from the source of cold or exposure, dry the victim from head to toe, replace wet clothing with layers of dry, warm clothing.

22. After drop is a condition experiences by any hypothermic individual, in which core body temperature continues to decrease after rescue.

23. After drop is dangerous because the victim is not safe just because they have been rescued. In any hypothermic individual, core body temperature continues to decrease after rescue (after drop), which may last many hours in a moderate to severely hypothermic person when no shivering is present and metabolic heat production may be less than 50 per cent of normal. Gradual warming of the heart will help avoid cardiac arrest and ventricular fibrillation.

24. If your vessel runs aground, first determine if the vessel and passengers are in any danger.

25. If your vessel springs a leak, immediately begin bailing (or pumping) and locate the source of the leak. Then use whatever is at hand to plug the leak and continue removing water. If the leak persists, then you must signal for help.

26. In the event that a vessel has run aground, capsized, or is sinking, these steps must be followed: Ensure that everyone dons on a PFD, stay with the vessel when appropriate, keep track of everyone on board.

27. Common symptoms and signs of heat stroke include: High body temperature, absence of sweating, hot red skin (flushed dry skin), rapid pulse, difficulty in breathing, strange behaviour, hallucinations, confusion, agitation, and disorientation.

28. The recommended treatment for a person showing the symptoms of heat stroke is to seek medical assistance immediately; call an ambulance. While waiting for help to arrive, move the person to a cooler environment, or place them in a cool bath of water (as long as they are conscious and can be attended continuously). Alternatively, moisten the skin with lukewarm water and use a fan to blow cool air across the skin. You can give cool beverages by mouth but only if the person has a normal mental state and can tolerate it.

29. Symptoms of heat exhaustion include headache, muscle cramps, dizziness, fainting, skin that is cool and moist, a fast, weak pulse rate, and breathing that is fast and shallow.

30. Home care is appropriate for mild forms of heat exhaustion (but heat stroke is a medical emergency and an ambulance should be called immediately). For mild cases of heat exhaustion: rest in a cool, shaded area, give cool fluids such as water or sports drinks (that will replace the salt that has been lost). Salty snacks are appropriate as tolerated. Loosen or remove clothing. Apply cool water to skin. Do not use an alcohol rub. Do not give any beverages containing alcohol or a stimulant (caffeine).

31. There are four levels of priority (levels of distress) when reporting an emergency verbally on a marine radio using standard marine communications rules:
    - Distress – A condition of being threatened by grave and/or imminent danger and requiring immediate assistance.
    - Urgency – A condition concerning the safety of a vessel or of someone on board or within sight, but which does not require immediate assistance.
    - Safety – When a station calling is about to transmit a message concerning the safety of navigation or important meteorological warnings.
    - Other communications – Non-urgent communications can be made on any channel other than Channel 16 or Channel 70. These channels are reserved strictly for emergency.

32. Flare, S-O-S, signal flags, sound signals, raising-lowering arms, EPIRB, dye (see the full list in Section 5.11).

33. Upwind.

34. Downwind.

35. It is important to keep as much of your body out of water as possible in order to delay the onset of hypothermia. Compared to being in water, keeping your body above water level will at least double your survival time.

36. Channel 16 is the channel used to transmit a distress call.. Thus, 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. Remember, **VHF radio Channel 16 is used for emergency calling purposes only**. Once you call another vessel on Channel 16, take your conversation to a working frequency to continue. Anyone who uses a VHF radio must follow the procedures described in the *VHF Radiotelephone Practices and Procedures Regulations*.

37. A VHF radio is better than a cell phone for emergency communications. A cell phone is not a reliable substitute for a marine radio and not the best means of issuing a distress call. Cell phones can lose reception and are damaged easily by moisture. In addition, calling from your cell phone does not alert 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.

38. The major factors governing what types of flares to carry on board your pleasure craft are: 1) length of the vessel and 2.) are of operation.

39. Store flares vertically in a cool, dry, secure location (such as a watertight container) to help them retain their efficiency, but keep them accessible in case of an emergency. Note: “Secure location” means keep them away from children.

40. If an emergency requires you to use a flare or rocket, first familiarise yourself with the operation of your flares (i.e. read the manufacturer’s instructions before using a flare) to ensure that you know how to use the device(s) safely and effectively.

41. a.)

42. To dispose of your outdated flares, seek advice from the retailer selling the flares, your local fire department or law enforcement agency, or Transport Canada.

43. There are two reasons why boaters should learn distress signals: 1) So that they will recognize a distress signal when they see or hear one, and 2) So that they will know how to send a distress signal in an emergency.

