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(11/2012)

SMALL VESSEL COMPLIANCE PROGRAM (SVCP) DETAILED COMPLIANCE REPORT AND GUIDANCE NOTES

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Responsible Authority	Approval
The Director, Domestic Vessel Regulatory Oversight, is responsible for this document, including any change, correction, or update.	**"Original signed by Julie Gascon"** Julie Gascon Director, Domestic Vessel Regulatory Oversight Marine Safety **Date signed:** December 4th, 2012

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REVISIONS

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Revision No.	Date of Issue	Affected Pages	Author(s)	Brief Description of Change
1	**November 2012**	**ALL**	**Small Vessel Compliance Program National Working Group**	**Formatting changes to meet TP standards; improved wording for some questions; administrative changes to address some differences between English and French versions; addition of "Important Note" on page 1.**

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IMPORTANT NOTE

The purpose of this Guideline is to assist the owners of small powered non-pleasure vessels to complete their Small Vessel Detailed Compliance Report (Form 85-0475E). Each guidance note is associated with a question on the Small Vessel Detailed Compliance Report, a copy of which can be found at https://wwwapps.tc.gc.ca/Saf-Sec-Sur/4/svcr-rcpb/dl.aspx?lang=e.

These Guidelines do not replace the regulations and the final authority for any regulatory requirement is the latest relevant regulations. References to regulations and standards are included in this document; however, this list is not exhaustive of all relevant regulations and standards. The reader should consult the Department of Justice website for a comprehensive list of the latest regulations under the *Canada Shipping Act, 2001*: http://laws-lois.justice.gc.ca/eng/acts/C-10.15/FullText.html.

GROSS TONNAGE

Gross tonnage is the measure of the overall size of a vessel as determined in accordance with the *Vessel Registration and Tonnage Regulations* and the Standard for the Tonnage Measurement of Ships (TP 13430) (available at http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm), by using one of the following:

1) Form 4A: Simplified Method of Tonnage Measurement;
2) Form 4B: Tonnage Measurement of a Simple Multihull Vessel; or
3) A duly appointed Tonnage Measurer.

The forms and additional information are available at www.tc.gc.ca/vessel-registry.

YEAR BUILT

If you do not know the year that your vessel was built, indicate "1900" as the year built on page 1.

AREA OF OPERATION

Near coastal voyage, Class 1 means a voyage (a) that is not a sheltered waters voyage or a near coastal voyage, Class 2; (b) that is between places in Canada, the United States (except Hawaii), Saint Pierre and Miquelon, the West Indies, Mexico, Central America or the northeast coast of South America; and (c) during which the vessel engaged on the voyage is always (i) north of latitude 6°N, and (ii) within 200 nautical miles from shore or above the continental shelf.

Near coastal voyage, Class 2 means a voyage (a) that is not a sheltered waters voyage; and (b) during which the vessel engaged on the voyage is always (i) within 25 nautical miles from shore in coastal waters of Canada, the United States (except Hawaii) or Saint Pierre and Miquelon, and (ii) within 100 nautical miles from a place of refuge.

Sheltered waters voyage means a voyage (a) that is in Canada on a lake, or a river above tidal waters, where a vessel can never be further than one nautical mile from the closest shore; (b) that is on the waters listed in Schedules 1 and 2 of the Vessel Certificate Regulations.

Unlimited voyage means a voyage that is not a sheltered waters voyage, a near coastal voyage, Class 2 or a near coastal voyage, Class 1.

Note: The definitions of the voyage classifications are found in the *Vessel Certificate Regulations*, section 1.

PRINCIPAL OPERATOR CERTIFICATION AND TRAINING

(See note 17 below for additional information.)

Master Limited. The general requirements for Master Limited can be found in section 131 of the *Marine Personnel Regulations*. The Master Limited training program description is found in Chapter 12 of Transport Publication (TP) 2293 available at http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm .
SVOP – Small Vessel Operator Proficiency. The SVOP training program description is found in Transport Publication (TP) 14692 available at http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm .
SVMO – Small Vessel Machinery Operator. The general requirements for SVMO can be found in section 151 of the *Marine Personnel Regulations*. The SVMO training program description is found in Chapter 33 of Transport Publication (TP) 2293 available at http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm .
ROCM - Restricted Operator's Certificate (Maritime). The ROC(M) is required by anyone using a marine VHF radio or other marine radios (each person on the boat who will use the radio needs their own card).
PCOC – Pleasure Craft Operator Card. The PCOC is obtained after passing an accredited boating safety test. To find a course provider in your area, visit www.boatingsafety.gc.ca.
MED A3 – Marine Emergency Duties A3 (Small Non-Pleasure Vessel Basic Safety). The MED A3 training program description is found in Transport Publication (TP) 4957 available at http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm .
ROCMC – Restricted Operator's Certificate – Maritime Commercial. The Restricted Operator's Certificate - Maritime Commercial (ROC-MC) is intended for mariners serving on compulsorily-fitted non-pleasure vessels within the North American A1 Sea Area as defined in ***Radio Aids to Marine Navigation*** (available through the Canadian Coast Guard at www.ccg-gcc.gc.ca).

SECTION 1: REGISTRATION

QUESTION 1

Section 46 of the *Canada Shipping Act, 2001* (CSA 2001) requires that **all** vessels (with the exception of those listed below) be registered in either the Canadian Register of Vessels or in the Small Vessel Register. This includes government vessels. No vessel shall be operated without a valid Certificate of Registry if that vessel is required to be registered.

The following vessels are NOT required to be registered:

a) Vessels used solely for pleasure (pleasure craft may need to be licensed – see the Office of Boating Safety Web site for more information – www.boatingsafety.ca).
b) Vessels registered in another country.
c) Sailing vessels and small vessels (including government vessels) fitted with propulsion motors less than 7.5kW (10 horsepower).

Registration of your vessel can be done by one of two methods.

1) Registration in the Small Vessel Register. For this option all registration documentation **must** be sent to Ottawa (Transport Canada, Vessel Registration, Marine Safety, 330 Sparks Street, Ottawa, ON K1A 0N8, 1-877-242-8770). This address is indicated on Forms 19 and 20.
2) The second way to register your vessel is to apply for registration at one of the Ports of Registry in the Canadian Register of Vessels. (Each region has several Ports of Registry – please contact your local Transport Canada office or click here for more details).

Applicable Registration Forms (Small Vessel Register)

	Form 20 Registration	Form 3 Statement of Qualification	Form 4A or 4B Tonnage	Form 14 Authorized Representative	Form 19 Registration (Govt. Vessels)	Bill of Sale or Affidavit (note 1)	Fee	Fleet of 2 or more vessels (note 2)
Individual	**Yes**	**Yes**	**Yes**	**If more than 1 owner**	**No**	**Yes**	$50	**Yes**
Company	**Yes**	**Yes**	**Yes**	**If more than 1 owner**	**No**	**Yes**	$50	**Yes**
Federal Government	**No**	**No**	**Yes**	**No**	**Yes**	**Yes**	$50	**No**
Provincial Government	**No**	**No**	**Yes**	**No**	**Yes**	**Yes**	$50	**No**
Municipal Government	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**	$50	**No**

Note 1 A 'Bill of Sale' is a document attesting to the sale of the vessel from a legally qualified vendor and that you are identified as the purchaser. If you do not have the bill of sale, you must provide an Affidavit/Declaration (a sample can be found on the Registration of Small Commercial Vessels Web site).

Note 2 Provided that all vessels are 5 gross tons or less and all applications are received together, registration of 2 or more vessels is $50 total (see CSA 2001 section 75.01 and 75.02).

For additional information regarding Vessel Registration call 1-877-242-8770. For any additional documents required, please refer to the Procedures for Registration in Canada at the Transport Canada Web site: www.tc.gc.ca/vessel-registry.

QUESTION 2

Your Certificate of Registry is not valid until the vessel has been marked in accordance with the instructions on the Certificate of Registry.

If your vessel is registered in the Small Vessel Register, it must be marked with the Official Number (C Number, example: C12345AB) in block characters not less than 75 millimetres high and in a colour that is in contrast with the background. This Registration number must be located on each side of the bow of the vessel, or on a board permanently attached to the vessel as close to the bow as practicable.

If your vessel is registered in the Canadian Register of Vessels, it must be marked with the name of the vessel and Port of Registry in clearly legible letters (Latin alphabet or Arabic or Roman numerals) at least 10 centimetres in height, on some clearly visible **exterior** part of the hull such as the bow and the stern. The Official Number (example: O.N. 897654) and registered tonnage must be marked on some clearly visible **interior** part of the hull in block-type Arabic numerals at least 4 centimetres in height.

QUESTION 3

To ensure that your certificate remains valid, any change(s) to the information shown on the Certificate, including a change of address, must be reported in writing to the Port of Registry within 30 days of the change.

Failure to report may result in the suspension or cancellation of the registry for your vessel and rendering your Certificate of Registry invalid.

QUESTION 4

Once a Certificate of Registry has been issued, a copy of it must be carried on board at all times.

SECTION 2: SAFETY PROCEDURES

Note: For more information on developing procedures, and to find templates for these procedures, visit http://www.tc.gc.ca/eng/marinesafety/debs-small-vessels-procedures-2992.htm.

QUESTION 5

Emergencies happen when least expected. Practicing responses to a variety of emergency situations will enable crewmembers to react quickly and properly to any situation. Consider scenarios applicable to your area of operation.

QUESTION 6

If your vessel does not require a life raft and where the water temperature is less than 15 degrees Celsius, you must develop procedures to protect all persons on board against cold-water shock and hypothermia. For your own practical and legal protection, you must establish and document suitable procedures, based on local conditions or established industry best practices to fulfill this requirement. For more information or to see what happens during cold-water immersion visit www.coldwaterbootcamp.com or read TP 13822 (available at http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm).

QUESTION 7

Gasoline vapours are highly explosive, particularly in confined spaces. Enclosed gasoline engine and fuel tank compartments must have a blower and an underway ventilation system in accordance with the Construction Standards for Small Vessels (TP 1332 chapter 6). Remember that gasoline vapours are heavier than air and will sink to the lowest point.

Immediately before every start up, the blower must be operated for **at least four minutes** or the length of time recommended by the vessel manufacturer, whichever is longer.

A notice similar to the one shown here should be posted at the normal operation positions.

WARNING

GASOLINE VAPOUR MAY EXPLODE RESULTING IN INJURY OR DEATH

BEFORE STARTING THE ENGINE

Operate blower for 4 minutes and verify blower operation

QUESTION 8

You must be able to close all engine space openings.

- Engine spaces protected by gas suppression agents must be gastight to prevent leakage of gas into accommodation & service spaces.
- The systems must have a manual release device outside the engine space.
- When activated, all of the fire suppression agent must be released simultaneously.
- There must be a means to stop all engine space ventilation fans.
- If the engine space is normally occupied by people, the system **cannot be capable of automatic discharge**.
- There must be a way to indicate at the operating position when there has been a release of gas from the system.

QUESTION 9

Before any firefighting is initiated there must be a way to shut off fuel and power to machinery in the engine space. Failing to shut off fuel and power could result in a serious depletion of fire fighting agent, resulting in a failure to extinguish the fire.

QUESTION 10

Leaking or spilled fuel not only harms the marine environment but is also a fire hazard. In developing fuel safety procedures you must consider the following:

- Mooring your vessel securely to prevent spills
- Shutting off all engines
- Sending all passengers ashore
- Putting out all open flames
- No smoking
- Turning off electrical switches and power supplies
- Not using electrical devices such as portable radios or cellular telephones when refuelling

- Closing all windows, portholes, hatches and cabin doors
- Removing portable tanks from the vessel before refuelling
- Grounding the nozzle against the filler pipe
- Knowing how much fuel your tank can hold and not overfilling it — you have a duty to prevent fuel leaks and spills into your boat's hull and the water
- Wiping up spills and disposing of used cloths or towels in an approved container

SECTION 3: NAVIGATION EQUIPMENT

QUESTION 11

All vessels ***under 12m*** length overall without a fitted sound-signalling appliance must ***carry*** a sound-signalling device. This can be a pea-less whistle, a hand held compressed gas horn or an electric horn.
All vessels ***over 12m*** length overall must be ***fitted*** with a sound-signalling appliance. This sound-signalling appliance may be a compressed gas or electric horn.

QUESTIONS 12 & 13

	Vessel 12-20 metres in length			**Vessel less than 12 metres in length**	
Masthead light	Required. Must be visible for 3 miles.	**Example:** 	**Masthead light**	An all-round white light is accepted in lieu of the required masthead light and sternlight. Must be visible for 2 miles.	**Example:** 
Sternlight	Required. Must be visible for 2 miles.		**Sternlight**		
Sidelights	Required. Must be visible for 2 miles.		**Sidelights**	Required. Must be visible for 1 mile.	

"Masthead light" means a white light placed over the fore and aft centreline of the vessel showing an ***unbroken*** light of 225 degrees, fixed to show the light from right ahead to 22½ degrees aft of the beam on either side of the vessel.

Note: The masthead light or all-round white light on a power-driven vessel of less than 12 metres in length may be offset from the fore and aft centreline of the vessel if centreline fitting is not practicable, provided that the sidelights are combined in one lantern which shall be carried on the fore and aft centreline of the vessel or located as nearly as practicable in the same fore and aft line as the masthead light or the all-round white light.

"Sidelights" means a green light on the starboard side and a red light on the port side each showing an ***unbroken*** light over an arc of the horizon of 112.5 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on its respective side. In a vessel of less than 20 metres in length the sidelights may be combined in one lantern carried on the fore and aft centreline of the vessel.

"Stern light" means a white light placed as nearly as practicable at the stern showing an unbroken light over an arc of the horizon of 135 degrees and so fixed as to show the light 67.5 degrees from right aft on each side of the vessel.

"All-round light" means a light showing an ***unbroken*** light of 360 degrees.

With your vessel documentation there should be information to show the make and rating of the navigation lights. If not, the lights may be marked or stamped with approval information. You should check and make note of this information.

QUESTION 14

If your vessel is less than 20 metres in length or is constructed primarily of non-metallic materials it should be equipped with a radar reflector or other means to enable the vessel's detection by other vessels navigating by radar.

QUESTION 15

If your vessel is over 8 metres it ***must*** be fitted with a compass. This compass should be able to be adjusted and corrected for deviation as well as being capable of being lit for night viewing. If your vessel is not more than 8 metres in length and you navigate within sight of seamarks, you are not required to carry a magnetic compass. However, due diligence and common sense should dictate that even if you are operating in areas within sight of seamarks, given the possibility of restricted visibility, this item should be considered as essential.

QUESTION 16

Every vessel shall be equipped with one non-portable VHF radiotelephone if the ship is of closed construction, more than 8 metres in length or carrying passengers engaged on a voyage of which any part is in a VHF coverage area, or is more than five miles from shore, or is a tow-boat.

Unless the vessel is equipped with two VHF radiotelephones, the VHF radiotelephone shall have dual watch capability if it was installed after April 28, 1996.
A VHF radiotelephone on a vessel shall be capable of transmitting and receiving communications on:

- The distress and safety frequency of 156.8 MHZ (channel 16);
- The primary inter-ship safety communication frequency of 156.3 MHZ (channel 6);
- The bridge-to-bridge communication frequency of 156.65 MHZ (channel 13);
- The public correspondence frequency specifically assigned for the area in which the ship is navigating; and
- Any other VHF frequencies that is necessary for safety purposes in the area in which the ship is navigating.

However, a vessel other than a closed construction vessel that does not carry more than six passengers may carry a portable VHF radiotelephone provided that it has a source of energy sufficient for the duration of the voyage.

SECTION 4: VESSEL MANNING AND CREW QUALIFICATIONS

QUESTION 17

		Near Coastal, Class 1	**NEAR COASTAL, CLASS 2 (NC2)**		**Sheltered Waters**
			More than 2 nautical miles from shore	2 nautical miles or less from shore	
Passenger-Carrying Vessels	More than 5 gross tons (GT)	Master 150 GT (Domestic) (if endorsed for limited, contiguous waters)	**Limited Master < 60 GT**	**Limited Master < 60 GT**	**Limited Master < 60 GT**
	Less than or equal to 5 GT **and** more than 8 metres		SVOP (Small Vessel Operator Proficiency)	SVOP (Small Vessel Operator Proficiency)	SVOP (Small Vessel Operator Proficiency)
	More than 6 passengers **and** no more than 8 metres		SVOP (Small Vessel Operator Proficiency)	SVOP (Small Vessel Operator Proficiency)	SVOP (Small Vessel Operator Proficiency)
	No more than 6 passengers **and** no more than 8 metres		SVOP (Small Vessel Operator Proficiency)	SVOP (Small Vessel Operator Proficiency)	PCOC (Pleasure Craft Operator Card)
Workboats	More than 5 GT	Master 150 GT (Domestic) (if endorsed for limited, contiguous waters)	**Limited Master < 60 GT**	**Limited Master < 60 GT**	**Limited Master < 60 GT**
	Less than or equal to 5 GT **and** more than 8 metres (except tugs)		SVOP (Small Vessel Operator Proficiency)	SVOP (Small Vessel Operator Proficiency)	SVOP (Small Vessel Operator Proficiency)
	Less than or equal to 8 metres (except tugs)		SVOP (Small Vessel Operator Proficiency)	PCOC (Pleasure Craft Operator Card)	
	Tugs		**Limited Master < 60 GT**	**Limited Master < 60 GT**	**Limited Master < 60 GT**

PCOC (Pleasure Craft Operator Card) Also Marine Basic First Aid ***or*** Provincial/Territorial Recognised First Aid Training.

SVOP (Small Vessel Operator Proficiency) Also Marine Basic First Aid ***or*** Provincial/Territorial Recognised First Aid Training and MED A3.

Limited Master less than 60 GT Also Marine Basic First Aid and MED A1 for non-passenger vessels and MED A2 for passenger vessels.

Engineering Certificates: Small Vessel Machinery Operator - Restricted is the minimum Marine Engineer Certificate required for **passenger vessels** operating that have propulsive power from 75 kW to 749 kW (1 hp = 0.746 kW) and do not go beyond a Limited Near Coastal Voyage, Class 2. Not required on vessels of open construction or on vessels fitted with outboard engines.

- No vessel length or tonnage cut-off
- Vessel specific (limited to vessel which person is tested on)

For more detailed information, please refer to the *Marine Personnel Regulations* or contact your local Transport Canada Marine Safety office.

QUESTION 18

Three factors determine the minimum crew required for ordinary operating conditions: vessel size, number of passengers and area of operation. As well, every vessel must have a sufficient crew respond to foreseeable emergency situations.
The crew should be able to respond to the following emergencies on board: fire, man overboard, engine failure, flooding, passenger control, distress calls and launching life rafts. Many of these tasks are required to be done simultaneously, for example: maintaining order and calm among the passengers, sending out distress messages if required, and launching the life raft (if applicable).

QUESTION 19

Before being assigned any duty on board, each member of the crew shall be provided with written instructions that describe the procedures to be followed in order to ensure their competency with:

- The shipboard equipment specific to the vessel;
- The operational instructions specific to the vessel;
- Their assigned regular and emergency duties; and
- The effective performance of assigned duties vital to safety or to the prevention or mitigation of pollution.

SECTION 5: NOTICES

QUESTION 20

Appropriate danger, warning, or caution labels (reference American Boat and Yacht Council ABYC T5 for label layout) written in English and French, should be considered if all of the following four conditions exist:

- The hazard is associated with the use of the product
- The hazard is not obvious or readily discoverable by the user
- The manufacturer knows of the hazard
- The hazard will exist during normal use or foreseeable misuse

When used, the pictorial signs should normally have a black picture on a white background.

QUESTION 21

From April 29, 2011, a compliance notice must be attached to all new small commercial vessels. The builder, manufacturer, rebuilder or importer of the vessel must also prepare a Declaration of Conformity and give a copy of this declaration to the first owner of the vessel.

Compliance notices are a statement by the builder or importer declaring that the vessel met the construction requirements as they read on the date of construction, manufacture, rebuilding or importation of the vessel.

Check that the Compliance Notice has wording (in English and French) stating that the manufacturer declares that your vessel complied with the ***non-pleasure craft*** construction requirements (if the vessel is more than 6 metres), as they read on the day that the construction of the vessel was started or on the day on which it the vessel was imported. If the vessel is not more than 6 metres long, the construction requirements are the same for both pleasure craft and non-pleasure vessels.

The compliance notice will indicate the vessel model, the builder or importer, the category of construction requirements and the design limitations, such as the ISO (International Organization for Standardization) design category for stability (category A, B, C or D).

The Compliance Notice should be fixed in a position where you and your crew can readily see it. It also would be very useful to bring the information contained in the Compliance Notice to the attention of your passengers when conducting your safety briefing.

SECTION 6: STABILITY, SAFETY AND FIREFIGHTING EQUIPMENT

QUESTION 22

Stability is the characteristic of a vessel that helps it stay upright. The *Small Vessel Regulations* require the owner and operator of a commercial vessel to ensure that the vessel has adequate stability to safety carry out its intended operations.

Vessels 6 metres and under: Acceptable and suitable standards for demonstrating stability evaluation are contained within TP 1332, chapter 4 (available at http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm) and may be detailed in the conformity Label/Notice (example shown below).

CANADIAN COMPLIANCE NOTICE
SAFEBOAT COMPANY INC. (MIC) **CITY, PROVINCE, COUNTRY** MODEL: **RUNABOUT 555X**
** ADDITIONAL INFORMATION*
The manufacturer declares that this vessel complied with the non-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 This vessel is also suitable for pleasure craft use.

Because it is more difficult for smaller vessels to have a level of stability that will prevent capsizing, the primary requirement is for the vessels to remain afloat when swamped and to provide something to hang on to. This is provided by flotation material being fitted by the manufacturer. These vessels should have a capacity label onboard that states the maximum horsepower, capacity and load.

a) Does the vessel have a Canadian Capacity Plate (not over 6 metres in length)?

b) Does it have a CE mark? If so, was it verified using ISO stability standard 12217 or 6185?

c) If it has no plate or mark, TP 1332 provides formulae for calculating maximum horsepower, capacity and load.

These are rather complex and it is recommended that you contact a Marine Consultant to determine these values.

Vessels greater than 6 metres:

Acceptable and suitable standards for demonstrating stability evaluation on vessels greater than 6m:

Vessel Type	Vessel Length	Suitable Standard
Monohull vessel	More than 6 metres	ISO 12217-1 or standards set out in TP 1332 section 5.3
Pontoon vessel	More than 6 metres and not more than 8 metres	ABYC H-35 or standards set out in TP 1332 section 5.4
	More than 6 metres	Standards set out in TP 1332 section 5.4
Inflatable or rigid inflatable vessel	More than 6 metres and not more than 8 metres	ABYC H-28, or ISO 6185-3
	More than 8 metres	ISO 6185-4
Sailing vessels	More than 6 metres	ISO 12217-2

Note 1: For vessels other than a monohull, in addition to the standards listed above, other recommended practices and standards of a marine classification society, government agency or industry association that are recognized by the marine industry for the type of vessel may also be used

Note 2: Monohull vessels other than inflatable or rigid hull inflatable vessels may have their stability evaluated with the standard TP 7301, instead of the standard ISO 12217-1.

Note 3: For existing vessels, that is those built on or before March 31, 2005, Transport Canada has produced ***TP 14619 - Transport Canada Simplified Assessment of Intact Stability & Buoyancy of Small Non-Pleasure Vessels Assessment Guide*** to help owners and operators move beyond relying on "feel" in assessing their vessels' stability characteristics.

For new vessels, Transport Canada established minimum stability criteria for new small commercial vessels – those built after March 31, 2005. New vessels must be assessed using the **ISO 12217-1 –** ***Small Craft Stability and Buoyancy Assessment and Categorization*** or **STAB 6 of the** ***Stability, Subdivision and Load Line Standards*** **(TP 7301)** to determine the maximum wave height and wind speed the vessel can be expected to handle safely given its stability characteristics.

Vessels that have met any of the above standards will have been provided with supporting documentation provided by the boat builder.

If a vessel has been satisfactorily assessed to one of these standards and has not been modified since the assessment was carried out, no additional assessment need be done.

See sections 708 and 709 of the *Small Vessel Regulations* or call a Transport Canada Centre for details on equivalents.

QUESTION 23

The owner of a vessel shall ensure that the structural strength and watertight integrity of the vessel continue to be adequate for its intended use. For example:

- Your vessel should meet the requirements of the construction standards (TP 1332, section 3); or

- Your vessel's design has been used for a vessel of the same type that was operated for at least five years without a marine occurrence or other event related to a deficiency in its construction or maintenance in an area where the wind and wave conditions are no less severe than those likely to be encountered in the vessel's intended area of operation; or
- Your vessel is built to standards approved by the Nordic Boat Standard (for commercial vessels less than 15 metres), the International Organization for Standardization (ISO) or a classification society such as the American Bureau of Shipping (ABS), Lloyd's Register of Shipping (LRS), Bureau Veritas (BV), Det Norske Veritas (DNV) or Germanischer Lloyd (GL).

QUESTION 24

A first aid kit shall be packed in a waterproof case capable of being tightly closed after use and shall be either:

1) a first aid kit that meets the requirements of the *Maritime Occupational Health and Safety Regulations* or of provincial regulations governing workers' compensation (with the addition of a resuscitation face shield and two pairs of examination gloves if the kit does not already contain them); ***or***
2) a marine emergency first aid kit that contains the following:
   - An up-to-date first aid manual or up-to-date first aid instructions, in English and French
   - 48 doses of analgesic medication of a non-narcotic type
   - Six safety pins or one roll of adhesive first aid tape
   - One pair of bandage scissors or safety scissors
   - One resuscitation face shield
   - Two pairs of examination gloves
   - 10 applications of antiseptic preparations
   - 12 applications of burn preparations
   - 20 adhesive plasters in assorted sizes
   - 10 sterile compression bandages in assorted sizes
   - 4 metres of elastic bandage
   - Two sterile gauze compresses
   - Two triangular bandages
   - A waterproof list of the contents, in English and French.

QUESTION 25

You must be sure that the batteries in your watertight flashlight are fully charged before every trip. Apart from its use as emergency lighting, your watertight flashlight may be your only way to signal for help.

QUESTION 26

Lifejackets

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:

1) **Safety of Life at Sea (SOLAS) lifejackets** meet very high performance standards and are approved for all vessels. They:
- Will turn you on your back in seconds to keep your face out of the water, even if you are unconscious;
- Come in two sizes: for those over 32 kg (70 lbs) and those less than 32 kg; and
- Are available in comfortable and compact inflatable configurations that can be automatically, manually or orally inflated.

2) **Standard Type lifejackets** are approved for all vessels, except SOLAS vessels. They:
- Will turn you on your back to keep your face out of the water, even if you are unconscious; and
- Come in two sizes: for those less than 40 kg (88 lbs) and those greater than 40 kg.

3) **Small Vessel lifejackets** are approved for small vessels. They:
- Have less flotation than Standard Type lifejackets;
- Will turn you on your back, but may do so more slowly;
- Come in two models: keyhole and vest; and
- Come in three sizes.

Personal Flotation Devices (PFDs)

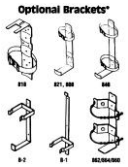
Transport Canada will now accept a PFD as the sole flotation device IF it meets the following conditions. The PFD must:

1) be worn when the Master or Operator deems there is a risk that can be decreased by wearing it;
   Note: If it is an inflatable PFD, it must be worn at all times in an open vessel and when on deck on a vessel of closed construction as required by the *Small Vessel Regulations*;
2) be approved by Transport Canada, Canadian Coast Guard or Department of Fisheries and Oceans;
3) provide a minimum 100 newtons buoyancy unless it is an approved suit or jacket designed to offer thermal protection as well as buoyancy;
4) be of a highly visible colour (yellow, orange, or red); for inflatable PFDs, it is the internal bladder (the part that pops out when activated) that must be a highly visible colour, not the external cover;
5) be fitted with retro-reflective tape and a whistle, and (for vessels going beyond the limits of a Near Coastal Voyage, Class 2) a personal locator light; and
6) be self-righting, unless it is an approved suit or jacket designed to offer thermal protection as well as buoyancy.

QUESTION 27

When the freeboard exceeds 0.5 metres (approximately 20 inches) you will need a re-boarding device. However, your vessel already meets this requirement if it has transom ladders or swim platform ladders. An outboard engine may not be used as a re-boarding device.

QUESTION 28



Fire extinguisher brackets are needed to mount a fire extinguisher securely and ensure that it is accessible. You need to feel confident that in case of fire, an extinguisher is immediately ready for use.

QUESTION 29

Extinguishers for use in accommodation spaces must **not** contain gas extinguishing agents such as carbon dioxide (CO_2), halon or any other gas.

QUESTION 30

A 23 kilogram (kg) fire extinguisher is approximately 50 pounds (lbs).

QUESTIONS 31 & 32

Self explanatory – answer yes or no.

QUESTION 33

Where portable extinguishers are provided for engine compartment firefighting, the vessel shall be equipped with at least 2 portable carbon dioxide (CO_2) fire extinguishers containing sufficient quantity of extinguishing agent to flood the engine space.

Check to confirm that the nozzle will fit in the discharge port. The fire extinguisher to be discharged directly into the enclosed engine space is in addition to the existing required fire extinguishers for the vessel. It shall contain at least 1.2 kilograms (kg) of CO_2 per cubic meter of gross enclosed engine space volume or contain a sufficient quantity of clean agent to provide the same fire fighting protection as CO_2. The fire extinguisher must be capable of being discharged in not more than 60 seconds if it contains CO_2 or in not more than 10 seconds if it contains a clean agent.

QUESTION 34

The port or provision for the discharge must be clearly labelled to show its purpose so that in the event of an emergency, it can be easily found and accessed.

QUESTION 35

If fitted, the fixed fire suppression system must be certified for marine use and installed as per the manufacturer's instructions. "Certified for marine use" means that it is listed for marine use by a product certification body or classification society, following accepted fire extinguishing standards such as the National Fire Protection Association (NFPA) standards.

If a gas other than carbon dioxide (CO_2) is used as the fire-extinguishing agent, it must provide at least the same fire fighting protection as CO_2. The system must be up to the specifications and standards of NFPA 12 (for CO_2 systems), NFPA 2001 (for clean agent systems), NFPA 2010 (for aerosol systems), and installed/maintained by a certified technician. It must be fitted in accordance with the construction standards and maintained as per manufacturer recommendations.

SECTION 7: BATTERIES

QUESTION 36

Batteries must be well protected from damage. They must be installed in a dry, well-ventilated area, above the high bilge water level. Any ignition source should be avoided in the vicinity of the batteries as recommended by the manufacturer.

Further safety requirements for batteries:

- Batteries shall not be tapped for power exceeding the total available voltage.
- Batteries must be in approved boxes or trays and securely fastened. Pull on the battery to make sure it is held securely. It shall not be able to move more than 1 inch (2.5 centimetres) in any direction.
- Batteries must be able to withstand inclinations of up to 40° (degrees) without spilling electrolyte and there should be absorbent cloths or pads around the battery to contain any accidental spillage.
- The battery terminals must be correctly labelled.
- All wiring, connectors and contacts should be checked. Wire insulation should be intact and contacts should be secure and clean.
- Connections **must not be** of the spring tension type (for example, **Gator Clips**).
- Metallic fuel lines and fuel system components, within 30 centimetres (12 inches) of a battery, must be shielded with di-electric material.
- There must be a means to adequately ventilate dangerous and explosive hydrogen gas. Vented batteries cannot be located in accommodation spaces.
- Battery charging systems must be automatic.

QUESTION 37

Means for adequate ventilation shall be provided to prevent the accumulation of hydrogen from the battery during charging or discharging cycles. Vented batteries shall not be installed in accommodation spaces.

QUESTION 38

Self explanatory – answer yes or no.

QUESTION 39

A battery disconnect switch shall be installed in the positive conductor from each battery or group of batteries, with a cold cranking average rating greater than 800 amperes, except for small vessels less than 8.0 metres (approximately 26 feet 3 inches) in length.
The following devices may be connected to the battery side of the battery switch described here, however, each device shall be provided with circuit protection:

- Electronic equipment with continuously powered memory;
- Safety equipment such as bilge pumps, alarms, carbon monoxide detectors, and bilge blowers; and
- Battery charging equipment.

Battery switches shall be placed in a readily accessible location as close as practicable to the battery, or batteries.
Battery disconnect switches shall be capable of carrying the maximum current of the distribution system including the intermittent load of the starter motor circuit.

SECTION 8: WATERTIGHT INTEGRITY

QUESTION 40

Means shall be provided for positively shutting off underwater penetrations (except wet exhaust systems) and to ensure the watertight integrity of the hull, deck and the superstructure means of closure.

- Every closure shall be of a strength and design to maintain watertight integrity.
- Hull penetrations shall be kept to the minimum, consistent with the operational needs of the vessel.
- Hull penetrations shall have adequate local strength compensation equivalent to the un-pierced structure in which it is located.
- Openings and penetrations in structures shall be kept to a minimum.
- Openings and penetrations shall be fitted with a reliable means of closure.
- Closing appliances such as exterior doors, hatches, windows and portlights shall be of marine construction, and fitted with means of securing them.
- Where practicable hinged doors and hatches shall open outward and be hinged on the forward or outboard side.
- Windows, portlights, and skylights shall be fitted with safety glass or equivalent material of equal strength.
- If you intend to operate more than 25 nautical miles from shore, windows, portlights, and skylights shall be mechanically fastened.
- For vessels whose construction started after April 1, 2005, the standard for watertightness of openings and penetrations in structures is the international standard ISO 12216.
- For vessels whose construction started after April 1, 2005, cockpits and recesses are to be designated either as "watertight" or as "quick-draining" and they shall comply with the requirements of the international standard ISO 11812.
- Motor wells shall be designed so that they tend to reverse the flow of any water striking the forward face of the well rather than directing it upward and forward.
- Motor wells shall be designed so that they have openings of a minimum size for safe operation and are located as high as possible and not lower than the normal motor cut-out in the transom.
- The motor well has drains fitted that will allow the complete drainage of water within a maximum of five (5) minutes.

The watertightness of all means of closure (under and above waterline) shall be verified regularly as part of the planned maintenance schedule.

QUESTION 41

In areas where there is a risk of fire, the means to shut-off all underwater penetrations shall be made of material that is not susceptible to fire damage

SECTION 9: POLLUTION PREVENTION

QUESTIONS 42 & 43

Canada Shipping Act 2001 section 191*:* Every person or vessel that discharges a pollutant is liable on summary conviction to a fine of not more than $1,000,000 or to imprisonment for a term of not more than 18 months, or to both. See also the *Vessel Pollution and Dangerous Chemicals Regulations*.

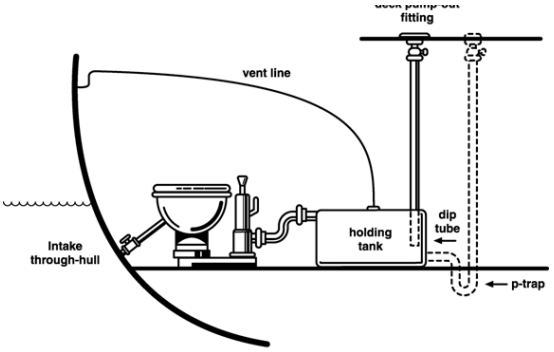
QUESTION 44

A toilet fitted on a vessel shall be secured in a manner that ensures its safe operation in any environmental conditions liable to be encountered.

A holding tank shall be constructed:

- in a manner such that it does not compromise the integrity of the hull;
- of structurally sound material that prevents the tank contents from leaking;
- so that the potable water system or other systems cannot become contaminated;
- to be resistant to corrosion by sewage;
- with an adequate volume for the ship's human-rated capacity on a normal voyage;
- with a discharge connection and piping system for the removal of the tank contents at a sewage reception facility;

EXAMPLE OF AN ACCEPTABLE SYSTEM



- so that the level of sewage in the tank may be determined without the tank being opened and without contacting or removing any of the tank contents or be equipped with a device that allows the determination to be made; and
- with a ventilation device that has its outlet located on the exterior of the ship, in a safe location away from ignition and areas usually occupied by people and with a flame screen of non-corrosive material fitted to the vent outlet.

QUESTION 45

See question 42.

SECTION 10: ELECTRICAL SYSTEMS

QUESTION 46

In the case of an electrical system of less than 50 volts, it shall meet

- the requirements of TP 1332 section 8; or
- the requirements of American Boat and Yacht Council Standards E-10, Storage Batteries, and E-11, AC and DC Electrical Systems on Boats.

QUESTION 47

In the case of an electrical system of 50 volts or more, it shall meet

- the requirements of American Boat and Yacht Council Standard E-11, AC and DC Electrical Systems on Boats; or
- the requirements of the recommended practices and standards that are appropriate for the system voltage and that provide a level of safety at least equivalent to that provided by Standard E-11 and TP 127.

QUESTION 48

The marking on electrical equipment, such as ignition systems, motors, pumps, fans, and controllers, shall include the following:

- Manufacturer
- Product ID, serial number, type, model
- Voltage
- Amperage
- Wattage
- Polarity
- Ignition protection information (if applicable)

QUESTION 49

In respect of an electrical device, "**ignition-protected**" means that the device is designed and constructed in such a manner that under its design operating conditions:

- It will not ignite a flammable hydrocarbon mixture surrounding it when an ignition source causes an internal explosion;
- It is incapable of releasing sufficient electrical or thermal energy to ignite a hydrocarbon mixture; or
- Its source of ignition is hermetically sealed (airtight).

SECTION 11: VENTILATION

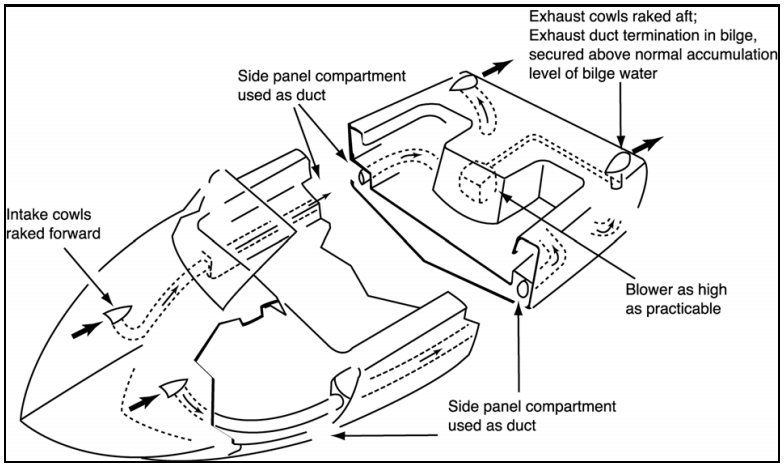
QUESTION 50

On a vessel, an enclosed space that contains a source of gasoline vapour shall have, in accordance with the construction standards, a natural ventilation system designed to remove any accumulation of combustible vapours.

Sources of gasoline vapour include:
(a) a permanently installed gasoline engine;
(b) a portable gasoline fuel tank that ventilates into the space; or
(c) a non-metallic gasoline tank:

(i) with an aggregate permeability rate exceeding 42 grams of fuel loss in 24 hours per cubic centimetre (1.2 grams per cubic foot) of net compartment volume; or
(ii) with a net compartment volume of less than 0.028 cubic metres (1 cubic foot), having a permeability rate exceeding 1.2 grams of fuel loss in 24 hours.

EXAMPLE OF VENTILATION OF ENCLOSED SPACES



If the source of gasoline vapour is in an open space, then the requirement to have a natural ventilation system does not apply. An open space has the following characteristics:
(a) at least 0.34 m^2 (3.5 ft^2) of area exposed to the atmosphere per cubic metre (35 ft^3) of net space volume; and
(b) no long or narrow unvented spaces in which a flame front might propagate.
For additional details, see TP 1332 section 6.

QUESTION 51

- Blowers for powered ventilation may be installed separately or installed in the natural ventilation system.
- Blowers shall be mounted as high as practicable above the bilge low point to prevent contact with bilge fluid.
- Blower outlet fittings shall not have less effective area than blower intakes.
- Blowers shall not be wired in the ignition circuit to run continuously, unless rated by the blower manufacturer for continuous operation.
- Blower motors shall be of a sealed type or ignition protected and shall be suitable for installation in damp locations.
- Blowers shall be designed for a minimum of four minutes continuous operation, more if required, to clear any space of combustible vapours.

QUESTION 52

Neither mechanical nor natural ventilation is required to remove diesel fuel vapours.

Ventilating provisions and openings to the engine space shall provide for the supply of combustion air and shall accommodate the air requirements of each propulsion and auxiliary engine in that space. Refer to the manufacturer's documentation to determine the air requirements of each engine in a space. The openings for providing the air requirements of propulsion and auxiliary engine may also function as means of providing natural ventilation to the space.

SECTION 12: FUEL SYSTEMS

QUESTION 53

With your vessel documentation there should be information to show the make and rating of the carburetor. The carburetor should be marked or stamped ABYC H-24 (American Boat and Yacht Council). You should check and make note of this information. The flame arrestor shall be suitably secured to the air intake with a flame tight connection and shall comply with and be marked SAE J-28, UL 111 or USCG CFR 46.182.415 – all are acceptable standards.

QUESTION 54

Every fuel tank, including those encased in cellular plastic foam or fibre reinforced plastic, shall be so installed that all connections, accessories, and labels are accessible for inspection and maintenance. Note: A **gasoline** fuel tank shall not be made integral with the hull.

QUESTION 55

Fuel lines shall not have unnecessary connections. Hoses used in the fuel tank fill system shall be secured to pipes (smooth pipes acceptable), spuds, or other fittings at each connection, by at least two (2) metallic clamps with nominal bandwidths of at least 12 millimetres (1/2 inches).

Every hose used in the fuel tank vent system or the fuel distribution and return line system shall be secured to a mating spud, pipe, or fitting that is formed or machined to provide serrations (at least 0.38 millimetres [0.15 inches] depth) or a bead. At least one corrosion resistant metallic clamp shall be used.

QUESTION 56

Every letter and numeral on any fuel tank label shall be at least 1.5 millimetres (1/16 inch) in height and width and be of a contrasting colour to the basic colour of the label. Labels on fuel tanks shall contain the following information:

- The type of fuel for which the tank is designed.
- The manufacturer's name or logo and address.
- The month and year of manufacture or the lot number and year of manufacture.
- The capacity of the tank in litres.
- The standard to which the tank was constructed.
- A statement that the tank was constructed in accordance with the requirements of the relevant standard.

QUESTIONS 57, 58 & 59

All fuel hoses shall meet the requirements of SAE J1527, Type A1 or A2, and be permanently marked in capital letters and numerals at least 3 millimetres (0.12 inch) in height and width and at intervals not greater than 305 millimetres (12 inches) with the following information:

- Type of hose.
- Manufacturer's name or registered trademark.
- Year of manufacture.
- Hoses less than 305 millimetres (12 inches) in length may instead be tagged with the required marking.

QUESTION 60

Fuel Tank Deck Fill Plates shall be permanently marked as follows:

- GASOLINE, GAS, or with the ISO symbol for gasoline in GASOLINE systems; or
- DIESEL, or with the ISO symbol for diesel in DIESEL systems.

QUESTION 61

No person shall install or maintain a fuel tank or a fuel system on a vessel in a manner that permits or is likely to permit leakage of fuel or spillage of fuel **into** the hull.

QUESTION 62

Self explanatory – answer yes or no.

QUESTION 63

Manually operated valves shall be designed with positive stops in the open and closed positions and shall indicate their opened and closed positions.

Electrically operated shut-off valves shall be connected so that they will be energized in the open position when the engine ignition switch is on. A provision for manual operation shall be incorporated in the design.

"Readily accessible for operation from outside the compartment" may be achieved by a shut-off valve installed at the tank, close to, and directly below, a quick-acting access port in the deck through which the valve can be operated. The access port shall be clearly and permanently labelled.

QUESTION 64

You can identify the potential ignition sources in your vessel by looking for possible sources of heat that could get hot enough to ignite. These sources of ignition could include:

- Smokers' materials (such as lighters and matches);
- Open flames (such as candles);
- Electrical, gas or oil-fired heaters (fixed or portable);
- Hot processes (such as welding or grinding work);
- Cooking equipment;
- Engines or boilers;
- Machinery;
- Faulty or misused electrical equipment;
- Lighting equipment (such as halogen lamps);
- Hot surfaces and obstruction of equipment ventilation (such as office equipment);
- Friction (such as from loose bearings or drive belts);
- Static electricity; and/or
- Metal impact (such as metal tools striking each other).

QUESTION 65

Your fuel tank must provide for protection from leakage caused by shock, corrosion, abrasion or fire. The fuel tank shall meet the minimum test requirements for mechanical strength and fire resistance as detailed in American Boat and Yacht Council (ABYC) Standards H-24 *Gasoline Fuel Systems*, or ABYC Standards H-33 *Diesel Fuel Systems*.

Some acceptable recommended practices and standards that provide a level of safety at least equivalent for test requirements for mechanical strength and fire resistance or fuel tanks are United States Code of Federal Regulations, CFR33 183.510 or ISO 10088 – Small Craft – permanently installed fuel systems and fixed fuel tanks.

⚠WARNING

AVOID SERIOUS INJURY OR DEATH FROM FIRE OR EXPLOSION RESULTING FROM LEAKING FUEL
Inspect system for leaks frequently

⚠MISE EN GARDE

DANGER DE BLESSURE GRAVE OU DE MORT RÉSULTANT D'UNE EXPLOSION OU D'UN INCENDIE PROVOQUÉ PAR UNE FUITE DE CARBURANT
Inspecter le système régulièrement pour s'assurer qu'il n'y a aucune fuite

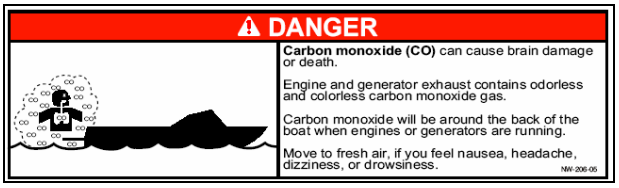
For your vessel, note and record all signage such as the one shown.

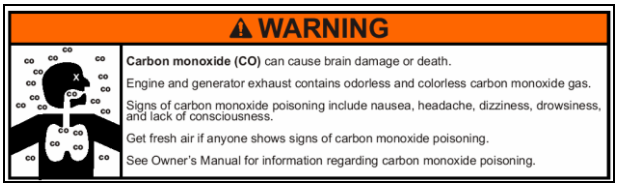
SECTION 13: MACHINERY (Not applicable to vessels propelled by outboard engines)

QUESTION 66

Exhaust gases contain carbon monoxide (CO), which can cause headaches, drowsiness, nausea, and lead to unconsciousness as the quantity inhaled is increased. Remember that in sufficient quantity, carbon monoxide can be fatal in an instant.

Exhaust pipe joints and clamps must be regularly checked for tightness and replacement of gaskets as required. It is very important to have exhaust manifolds, exhaust pipes, mufflers and tailpipes regularly checked and inspected for visible signs of corrosion or damage before an actual exhaust leak happens.





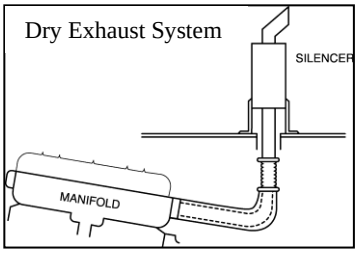
QUESTIONS 67, 68 & 69

Self explanatory – answer yes or no.

QUESTION 70

Exhausts should generally be equipped with a muffler (silencer). The muffler should be sized as large as practical and designed to ensure maximum sound attenuation with minimum backpressure.

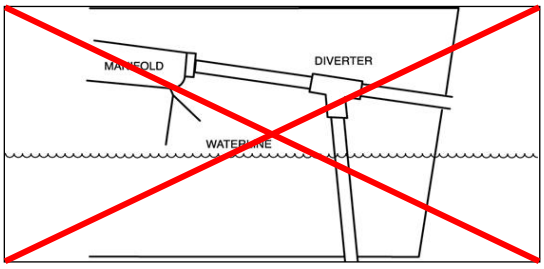
Dry exhaust systems may be used for propulsion and generator engines of any size.



QUESTION 71

A diverter allowing exhaust gases to pass without restriction ***may only*** be installed if it is visibly disconnected in a manner that ensures it cannot be easily reconnected while the vessel is in operation.

An installation as shown here is ***NOT*** acceptable.



QUESTION 72

Check that all moving parts of the machinery or power-operated equipment, where such parts constitute a hazard, are fitted with guards or other safety equipment.

QUESTION 73

Check that the propulsion or auxiliary machinery manufacturer's recommendations or other authorities' criteria, as recognized by the marine community, are taken into account when determining the material and dimensions of shafting and propellers.

SECTION 14: MACHINERY – Vessels more than 6 metres

QUESTION 74

The following instruments and controls shall be provided at the vessel's operating position:

- Engine oil pressure and engine coolant temperature indicators for inboard engines;
- Fuel capacity gauges, unless other adequate means to determine the amount of fuel is provided;
- Battery charging gauges;
- Controls for navigation lights;
- Indicators for steering equipment;
- Control and instructions for the blower(s);
- High bilge indicator;
- The running indicator for automatic bilge pump;
- Fire detection panel and alarms;
- Engine shut-off device.

QUESTION 75

A bilge pumping system shall be provided with a mechanical pump.

- The pump shall be self-priming and be designed to run dry without damage.
- Engine driven pumps are acceptable only if they can be run independently from the propulsion shafting.
- The piping arrangement shall ensure that no back siphoning can occur and marine type strainers shall be provided on the suction line from each compartment.
- The piping shall be of metal, rigid plastic, non-collapsible and non-oil degradable hose with flanged, screwed, or robust double-clamped connections, where practicable.
- The piping shall be not less than 25 millimetres (1 inch) in diameter, except that for small compartments piping 18 millimetres (3/4 inch) in diameter may be acceptable if the pump-out time is under five (5) minutes.
- The automatic bilge pump or a bilge pumping system has a minimum capacity of 0.91 Litres/second (14½ US Gallons/minute).
- When an automatic bilge pump is fitted, a visual signal shall be provided at the operating position to indicate when the pump is running and a manual overriding switch shall be provided at the operating position.

QUESTIONS 76, 77 & 78

Self explanatory – answer yes or no.

QUESTION 79

All components of the steering systems gear must be protected from obstructions, excessive heat and mechanical wear.

QUESTION 80

Emergency steering is ***not*** required if the vessel is fitted with:

- Multiple propulsion units with independent control of each propeller.
- No rudder, where steering action is obtained by a change of directional setting of the propulsion units.
- A rudder and a tiller are fitted as the main steering arrangement.
- Independently controlled adjustable trim tabs.
- A bow thruster.

QUESTION 81

The engine label should have notations as to its intended use. If not, check with the manufacturer to ascertain its applicability for marine use. As an example, many off the shelf generators purchased in box stores are intended only for use on land and are not acceptable for marine use.

SECTION 15: ADDITIONAL SAFETY AND FIREFIGHTING EQUIPMENT – Vessels more than 6 metres

QUESTION 82

The fire panel must be installed as per the manufacturer's specifications and the specifications of TP 1332.

	Vessel length		
Fire alarm/fire alarm panel at the control station/operating position includes:	More than 6 m and not more than 9 m	More than 9 m and not more than 12 m[a]	More than 12 m[b]
(a) a visual (red) and audible alarm	•	•	•
(b) a power available light (green) for supervising power as close as possible to the detector	•	•	•
(c) two independent sources of power when the vessel is fitted with an emergency power source		•	•
(d) monitoring of the main power source and automatic change over to the emergency power source		•	•
(e) two independent power sources, one of which is an emergency power source, with automatic change over to the emergency power source			•
(f) two independent supervised zones, one for the engine space and one for other spaces			•
(g) an automatic means to sound an alarm through the vessel if the alarm signal has not received attention within two (2) minutes			•
(h) automatic silencing of the alarm when a voice communication is transmitted over the public address system			•
A fire alarm shall initiate a continuous visual and audible alarm at the operating position that can be silenced by the operator only.	•	•	•
When indicator lights other than LED type are used, a test button and a dimmer without off position shall be provided.	•	•	•
The audible alarm shall have a minimum intensity of 84 dB.	•	•	•

a – Includes workboats of more than 12 metres with *no* overnight accommodations
b – Includes passenger-carrying vessels of more than 12 metres and workboats of more than 12 metres *with* overnight accommodations

QUESTION 83

The dual action rate-of-rise temperature detector must be:

- Of a re-settable type;
- Installed as per the manufacturer instructions;
- Ignition protected; and
- Approved and certified for marine use.

QUESTION 84

Fire detectors must be listed for marine use by a product certification body or type approved by a classification society.

On all vessels of not more than 12 metres and on workboats of not more than 15 metres not provided with overnight accommodations, detectors with an integral alarm may be installed. The alarm level shall not be less than 84 decibels.

QUESTION 85

To minimize the chance of one incident blocking both escapes, the means of escapes must:

- Be as remote from each other as practicable;
- Have means of exit to different rooms or spaces; and
- Have a clear opening size of at least 560 millimetres x 560 millimetres.

Only one means of escape is required if:

- The space is not normally occupied;
- The dimensions of the space do not permit more than one means of escape;
- The deck area is not more than 28 metres^2.

QUESTION 86

Emergency lighting systems should ideally be of a self-contained type, rechargeable from the vessel's electrical distribution system, and fitted with a charge indicator.

However, as an alternative to the self-contained type, rechargeable or non-rechargeable portable hand lanterns may be provided. The portable lanterns shall provide a light intensity and endurance at least equivalent to an American National Standards Institute ANSI-908 6 volt, 9 watts portable lantern. If equipped with non-rechargeable lanterns, spare batteries shall be carried. All batteries shall be replaced with new batteries annually.

QUESTION 87

Your vessel must be fitted with means to protect persons from falls or falling overboard as per H41.6 of the American Boat and Yacht Council (ABYC) Standards.

SECTION 16: BASIC SAFETY AND FIREFIGHTING EQUIPMENT – Vessels not more than 6 metres

QUESTION 88

A buoyant heaving line is thrown toward a person in the water for them to hold on to while you pull them alongside your boat. The throw bag keeps it from getting knotted and makes it easier to throw.

An example of a buoyant heaving line is a 15m x 7mm 300kg test braided polypropylene floating rope with a bright orange nylon and polyester self-draining bag with reflective safety tape.

QUESTION 89

When buying marine distress flares, you should look for a Transport Canada approval stamp or label. Remember that flares are only good for **four years from the date of manufacture** (not the date of purchase), which is stamped on every flare. You should also ask the manufacturer how to dispose of your expired flares. Flares should be kept within reach and stored vertically in a cool, dry location (such as a watertight container) to keep them in good working condition.

There are four types of approved flares: A, B, C and D. Type A: rocket parachute flare, Type B: multi-star flare, Type C: hand flare, Type D: smoke signal (buoyant or hand-held).

QUESTION 90

A manual propelling device can be a set of oars, a paddle, or anything that a person can operate by hand or foot to propel a boat.

Having the right anchor and cable for your boat is important. Anchors, apart from their regular use, may also be useful to prevent a disabled vessel from grounding and for security if power or steering is lost.

QUESTION 91

Bailers must hold at least 750 millilitres (just over 1½ pints), have an opening of at least 65 centimetres^2 (10 in^2) and be made of plastic or metal. If you have a manual bilge pump, the pump and hose must be long enough to reach the bilge and discharge water over the side of the boat.

QUESTIONS 92 & 93

What does the 1A: 5B: C rating mean? The letters refer to the type of fire, and the numbers refer to the amount of fire the extinguisher can handle.

Fire Class	Appropriate for fires involving:	Number refers to:
A	Combustible materials such as wood, cloth, paper, rubber or plastic.	How much water the extinguisher is equal to – the standard uses a formula of 1 ¼ gallons (US) multiplied by the rating number. For example, a 1A: 5B: C extinguisher is equal to 1 ¼ gallons of water to fight a Class A fire.
B	Flammable or combustible liquids such as oil, gasoline or grease.	The amount of square feet of a Class B fire that should be extinguished if the extinguisher is used correctly by an untrained person. For example, a 1A: 5B: C extinguisher should be able to extinguish 5 square feet of a Class B fire.
C	Electrical equipment such as appliances and wiring.	No number – the "C" only denotes that the extinguisher is safe for a Class C fire.

Fire extinguishers are to be maintained in good working order and serviced (tagged) by approved technicians as per the manufacturers recommended schedule and practice.

QUESTION 94

Bulwarks and guardrails protect passengers from falling overboard. Guardrails shall have a minimum height of 915 millimetres/3 feet from the weather deck, with rails no more than 230 millimetres/9 inches apart, fitted in areas where there is a risk of people falling overboard while underway. Verify the strength of all railings – pull on them hard as if it were an emergency.

Where the fitting of guardrails would impede the operation of the vessel, alternative safety precautions may be taken. For instance, in open boats, make sure all passengers remain seated, and wear small vessel lifejackets (or PFDs if permitted by TC).

Where children are carried, special precautions are to be taken. The distance between rails shall be reduced or netting provided and you should develop other means to protect children such as having children wear a lifejacket.

SECTION 17: BASIC SAFETY AND FIREFIGHTING EQUIPMENT – Vessels more than 6 metres but not more than 9 metres

QUESTION 95

For 'Buoyant Heaving Line' see Question 88. If a lifebuoy is the preferred option, look for a Transport Canada approval stamp or label. Lifebuoys must be at least 610 millimetres (24 inches) in diameter. SOLAS lifebuoys are 762 millimetres (30 inches) in diameter. Smaller lifebuoys and horseshoe-type devices do not meet the approved specification, but may be carried in ***addition*** to the approved lifebuoy(s).

QUESTION 96

See Question 89.

QUESTION 97

See Question 90.

QUESTION 98

See Question 91.

QUESTIONS 99, 100 & 101

See Question 92.

SECTION 18: BASIC SAFETY AND FIREFIGHTING EQUIPMENT – Vessels more than 9 metres but not more than 12 metres

QUESTION 102

See Question 95.

QUESTION 103

See Question 89.

QUESTION 104

See Question 90.

QUESTION 105

See Question 91.

QUESTIONS 106, 107 & 108

See Question 92.

QUESTION 109

Fire axes should be painted red and secured in a conspicuous but accessible place.

QUESTION 110

Fire buckets designed for marine use shall have a capacity of at least 10 litres, be fitted with a rounded base with a hole in the centre and be fitted with a lanyard of such length to reach the water from where it is usually stored.

SECTION 19: BASIC SAFETY AND FIREFIGHTING EQUIPMENT – Vessels more than 12 metres

QUESTION 111

See Question 95.

QUESTION 112

See Question 89.

QUESTION 113

See Question 90.

QUESTION 114

See Question 91.

QUESTIONS 115, 116, 117 & 118

See Question 92.

QUESTION 119

Every fire pump shall be:

- Constructed for ***marine use***, be self-priming and have a minimum capacity of 1.14 Litres/second (about 18 US gallons per minute).
- Capable of delivering a jet of water of at least 12 metres through the hose and nozzle.
- Made of non-combustible materials and pump impellers shall be of a type that will not be damaged by heat or if they run dry.
- Fitted with sea suction inlets having arrangements to prevent blockage of the inlet by debris or ice.

QUESTION 120

The fire main shall have a minimum diameter of 25 millimetres.

The nozzle on a fire hose shall have an internal diameter of at least 12 millimetres; be capable of spray action and jet action and have a means to shut it off.

QUESTION 121

See Question 109.

QUESTION 122

See Question 110.

SECTION 20: ADDITIONAL ITEMS REQUIRED FOR PASSENGER VESSELS

QUESTION 123

The intent of the pre-departure briefing is to alert passengers of hazards and to advise them of procedures in the event of an emergency. Your briefing should include procedures in the event of you being incapacitated.

The briefing may be in either or both of the official languages and must include:

- The location of all lifejackets, specifically the location of lifejackets for children;
- A demonstration showing the correct donning each type of lifejacket;
- The location of all survival craft;
- The location of first aid kit;
- The location of flashlights and flares;
- The location of whistles/air horns;
- The use and location of fire extinguishers;
- The use of lifebuoys/throw bags;
- The safety procedures for the protection of limbs including the avoidance of ropes and docking lines;
- An explanation of the consequences of improper passenger distribution on the stability of the vessel; and
- The safety procedures for the prevention of fire and explosions.

QUESTION 124

In the event of an emergency, rescue services need to know where you and your vessel have sailed to, when you are expected to return and how many persons are onboard.

Before leaving shore, you must leave a record of the number of persons onboard with a person on shore who has been designated to be responsible for communicating with search and rescue authorities in the case of an emergency.

If you are operating in a remote area and it is not possible to leave this information with a person on shore, then a record of the number of persons on board and the area of operation should be left in a location on shore that is known and readily available to search and rescue authorities (for example, on the departure dock).

QUESTION 125

Passenger vessels **shall** carry one or more life rafts with a total capacity sufficient to carry all persons on board, unless the vessel is:

- not more than 8.5 m in length;
- on a sheltered waters voyage (as defined in the *Vessel Certificates Regulations*); or

- at a distance of not more than two nautical miles from the shore of **a river or lake**, that distance being measured either from the mainland or from an island that can be used as a safe refuge from the weather.

A liferaft must be serviced at the intervals (for example, annually or every two years) set out in section 2 of Schedule IV to the *Life Saving Equipment Regulations* at a service station that is accredited by the manufacturer of the liferaft. The location and last date of service shall be clearly marked on the liferaft (*Small Vessel Regulations* 21).

With the exception of a liferaft packed in a valise-type container, a liferaft must be stored in a manner that allows it to automatically float free if the vessel sinks (*Small Vessel Regulations* 21).

QUESTION 126

The gas cylinders shall not be fitted to any appliance and shall be:

- Well secured and protected from damage;
- Well secured and protected from the effects of excessive variations in temperature; and
- Stored in an open space or in a well ventilated location; or
- Stored on an open deck in a manner that will not permit the ingress or accumulation of the gas below deck.

QUESTION 127 & 128

Passenger vessels not more than 6 metres in length shall be fitted with a heat detector in each engine space that:

- Is hard-wired to a red visual alarm and to an audible alarm of at least 84 decibels (db), both of which are to be located at the operating position;
- Has a green light indicating power at the detector; and
- Is powered by the vessel's electrical system.

QUESTION 129

Fire detectors must be certified for marine use and installed as per the manufacturer's instructions; they should be checked regularly to ensure they work. Smoke detectors must be used in accommodation spaces. Heat detectors must be used around cooking appliances. You are advised to document or photograph these items for purposes of future verification.

SECTION 21: ADDITIONAL ITEMS REQUIRED FOR WORKBOATS ENGAGED IN TOWING OPERATIONS

QUESTIONS 130 & 131

Self explanatory – answer yes or no.

QUESTION 132

To minimize the chance of one incident blocking both escapes, the means of escapes must:

- Be as remote from each other as practicable;
- Have a means of exiting to the outside; and
- Have a clear opening size of at least 560 millimetres x 560 millimetres.

Only one means of escape is required if:

- The space is not normally occupied;
- The dimensions of the space do not permit more than one means of escape; or
- The deck area is not more than 28 metres^2.

QUESTIONS 133, 134 & 135

Self explanatory – answer yes or no.

QUESTION 136

The liferaft(s) must have a total capacity sufficient to carry all persons on board the vessel.

A buoyant apparatus shall be of a type that has been approved by the United States Coast Guard and the information contained in the nameplate shall be in English and French.

QUESTION 137

If there are two or more persons on board a tug that is more than 8.5 metres in length, it shall carry on board one or more life rafts with a total capacity sufficient to carry all the persons on board.

The life raft must be serviced at the intervals set out in section 2 of Schedule IV to the *Life Saving Equipment Regulations* at a service station that is accredited by the manufacturer of the life raft. The location and last date of service shall be clearly marked on the life raft (*Small Vessel Regulations* 21).

The life raft or buoyant apparatus (except for a life raft packed in a valise-type container) must be stored in a manner that allows it to automatically float free if the vessel sinks (*Small Vessel Regulations* 21).