



2020

# SAFETY INSPECTION GUIDEBOOK

NANAIMO YACHT CLUB - SEPTEMBER 2019

## Table of contents

Table of contents.....	1
Vessel Inspections Advising Committee.....	1
Acronyms.....	2
Guidelines for Members and Delegates.....	2
Guidelines for Safety Inspector.....	3
Documentation.....	3
Electrical.....	3
Mooring Lines.....	4
Fire Prevention.....	4
Engine compartment and fuel tank(s).....	6
Ventilation.....	7
Vessel Pollution and Dangerous Chemical Regulations.....	8
Club Matters.....	8
References.....	8

## 2019 Vessel Inspections Advising Committee

Nicolas Fortin (Safety and Boat Inspections Committee Chair)

Michael Harrison (Security Committee Chair)

Rusty Kostka (Operation Manager)

Jim Lee (Advisor)

Ken Swain (Advisor)

Nanaimo Yacht Club Safety Committee  
Safety Inspection Guidebook - V 1.2  
September 30, 2019  
Front page photo: [www.marina.com](http://www.marina.com)

## Acronyms

CEC	Canadian Electrical Code
CSA	Canadian Standards Association
CShA	Canada Shipping Act
I/O	Inboard/Outboard
NFPA	National Fire Protection Association
NYC	Nanaimo Yacht Club
R&R	Rules and Regulations
SVR	Small Vessels Regulation
TC	Transport Canada

## Guidelines for Members and Delegates

[R&R C.2]

The purpose of Safety Inspections is to ensure that all vessels are safe for the users, other members, other vessels and that the risk to club assets are minimized.

The Safety Inspections are scheduled over two weekends, usually the last weekend of October and first weekend of November. A notice will be sent to all members having moorage announcing the dates the inspection will be held.

If you are unable to attend on the inspection dates, a delegate may represent you. As a last resort, alternate inspection arrangements can be made with the office staff prior to the inspection day(s), without penalty.

It is each member's responsibility to ensure his or her vessel is inspected and meet the safety standards set by the Executive Committee. Those standards are explained in this manual.

The **Canadian Power and Sail Squadron** and the **Royal Canadian Marine Search and Rescue** offer more thorough Vessel Safety Checks in accordance to Transport Canada requirements. This service is free of charge and offered by certified volunteers. NYC members are strongly encouraged to invite them on board their vessel for a vessel safety check.

## Fine and Penalties

- |   |           |
|---|-----------|
| 1. Missed safety inspection                 | \$25      |
| 2. Missed safety inspection (after 28 days) | \$50/week |
| 3. Reinstatement of cancelled membership    | \$250     |

## Guidelines for Safety Inspectors

The role of the safety inspector is to confirm that all vessels moored at NYC are in compliance with the club safety standards. The inspector will also provide guidance and recommendations to members on how to improve the safety of their vessel.

Inspectors are encouraged to ask the owner/delegate to handle their own equipment.

At the end of the inspection, the inspector will review the recommendations and compulsory items with the vessel owner/delegate and ask the owner/delegate to sign the inspection form.

Also, the inspector will provide the owner/delegate and the club office a copy of the recommendations and findings. If the inspection is successful, the inspector will issue a decal.

Finally, the vessel inspector will note and report deficiencies he or she finds on docks (i.e. damaged electrical plugs, loose planks, damages to the docks, etc.)

## Documentation

Inspectors will advise the owner/delegate of any administrative requirement not met.

### Insurance and Mooring Agreement

All mooring members must have a signed mooring agreement on file and submit a copy of the current liability insurance in accordance with the mooring agreement.

### Documentation Examination Criterium:

- The office will indicate on the form/label any administrative requirement not met.

## Electrical

[CEC 4-004, 8-104, 12-2210, 14-104, 26-142, 42-008, 42-016; R&R 3.e iv-vii]

### Electrical Cable and Connectors

120V outlets, cables and plugs will be verified. Inspectors will ask if the boat owner uses power over the winter and mark on the inspection form. Inspectors will notify the boat owner/delegate that if inadequate size wire is used, NYC will remove the electrical meter for this slip until the deficiency is corrected.

### Electrical Cable/Connectors Examination Criteria:

- Power cord must be rated for outdoor use.

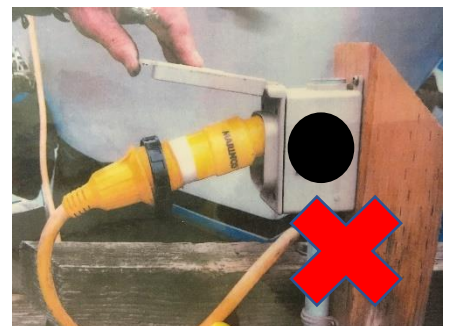


Figure 1- Poor connection - Jim Philip



- Cable must be a three conductor and of appropriate gauge:
  - 15A : 14
  - 20A : 12
  - 30A : 10
- All connectors and cable are in satisfactory condition (dock/slip, cable, vessel).
- Cable and connectors are in satisfactory condition.
- Power cord to vessel must be securely fastened to prevent any part of the cord to be immersed in water.



Figure 2 - Burnt connectors - Jim Philip

#### Vessel 120V Circuit Examination Criterium:

- Tester shows no faults on all 120 V electrical outlets.

### Mooring Lines

Mooring lines (Bow, Stern, and Spring) will be verified visually. If necessary, the inspector may provide recommendations on how to moor the vessel securely.

#### Mooring Lines Examination Criteria:

- Lines are of adequate size of mooring lines for the vessel.
- Vessel is properly tied to the dock.
- Lines are in good visual condition.
- Core must not be visible on double braids and core dependant lines.
- Lines must be belayed at a strong point on the vessel.

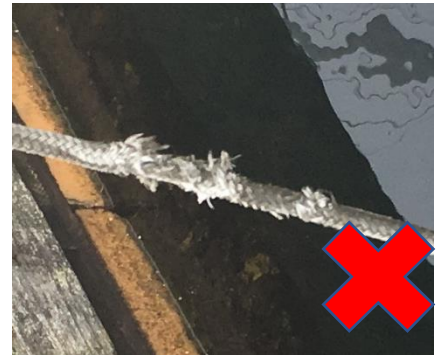


Figure 3 - Chafed mooring line - Nic Fortin

### Fire Prevention

#### Heating Appliances

[R&R 3.f]

Heating appliances and other heat-producing devices shall be mounted to avoid danger of igniting combustible materials in the vicinity. All non-permanently installed heating appliances, other than low surface temperature heating devices, must be equipped with an automatic “tip over shut off switch” or be approved by the electrical committee prior use.



Figure 4 - Types of approved heating devices

## Fire Extinguishers and Firefighting Equipment

Fire extinguishers must be hydrostatically tested by a certified technician as per the manufacturer's instructions to ensure that they will operate correctly.

### Requirements

[SVR 208]

LENGTH OF THE VESSEL	FIREFIGHTING EQUIPMENT
<b>NOT MORE THAN 6 M (19.7 FT)</b>	a 5B:C portable fire extinguisher, if the pleasure craft is equipped with an inboard engine, a fixed fuel tank of any size, or a <u>fuel-burning</u> cooking, heating or refrigerating appliance.
<b>MORE THAN 6 M (19.7 FT.) BUT NOT MORE THAN 9 M (29.6 FT.)</b>	(a) a 5B:C portable fire extinguisher, if the pleasure craft is a power-driven vessel; and (b) a 5B:C portable fire extinguisher, if the pleasure craft is equipped with a <u>fuel-burning</u> cooking, heating or refrigerating appliance.
<b>MORE THAN 9 M (29.6 FT) BUT NOT MORE THAN 12 M (39.4 FT)</b>	(a) a 10B:C portable fire extinguisher, if the pleasure craft is a power-driven vessel; and (b) a 10B:C portable fire extinguisher, if the pleasure craft is equipped with a <u>fuel-burning</u> cooking, heating or refrigerating appliance.
<b>MORE THAN 12 M (39.4 FT.) BUT LESS THAN 24 M (78.7 FT)</b>	(a) a 10B:C portable fire extinguisher at the following locations: <ul style="list-style-type: none"> <li>a. at each access to a space fitted with a fuel-burning cooking, heating or refrigerating appliance,</li> <li>b. at the entrance to any accommodation space, and</li> <li>c. at the entrance to the machinery space;</li> </ul> (b) an axe; and (c) two buckets.

**Note:** A boater may choose to carry two or more fire extinguishers of smaller ratings in place of one larger extinguisher, provided that the combined capacity of the smaller extinguishers equals or exceeds the requirement for the vessel length [SVR s. 217].

### Fire Extinguisher Examination Criteria:

[SVR 208; NFPA 10 6, 7.2]

- Must be serviced every 6 years (NYC requirement)
- Must be approved by a product certification body (i.e. UL, ULC, United States Coast Guard (USCG), or CE if manufactured in Europe).
- Must be hydrostatically tested as per manufacturer's recommendations. Most

- disposable fire extinguishers do not require hydrostatic testing but have an expiration date.
- Correct number, type, and location on board for the vessel (see chart above).
- Must be in good condition (no corrosion or rust on tank or valve assembly).
- Locking pin and seals in place and in good order.
- Visual indicator or pressure gauge shows full charge (if no gauge is present, an annual service tag must be displayed and showing an inspection date not greater than 12 months).
- Hose and nozzle/horn in good condition (not missing, not cracked).
- It is recommended that fire extinguishers be installed in a conspicuous and easily accessible location:
  - in locations where, visual obstructions cannot be avoided (e.g. locker), signs or other means shall be provided to indicate the extinguisher location;
  - signs or other means used to indicate fire extinguisher location shall be in close proximity to the extinguisher.



Figure 5 - Pressure gauge indicating adequate pressure

## Engine compartment and fuel tank(s)

[TC, 2011]

### Flame Arrestor and Drip Pan

Every vessel with gasoline inboard engine equipped with a carburetor or throttle body fuel injector must be fitted with a flame arrestor.

### Flame Arrestor and Drip Pan Examination Criteria:

The flame arrestor must:

- be present;
- be mounted securely to the engine air intake with flame-tight connections;
- have metal attachments with flame-tight connections that are firmly secured to withstand vibration, shock and backfire (i.e. no gasket between the flame arrestor and carburetor; all connections metal to metal);
- have no separation in the grid elements; and
- be clean with no oil residues.



Figure 6 - Flame Arrestor - CCG

## Fuel Tanks

Fuel tanks must be in good condition and be stored properly. The inspector will pay particular attention to the bottom of the tank and connectors.

### Main Fuel Tank Examination Criteria:

- satisfactory structural condition;
- plastic is not brittle;
- metal is not overly corroded;
- connectors are in good visual condition;
- no evidence of leaks.

### Portable fuel tanks examination criteria:

- All the criteria applying to main fuel tank and they must be stowed outside of heated areas of the boat.

## Propane

[TC, 2011]

Propane and butane are often used on pleasure craft for fuel-burning appliances. They can pose higher risk than gasoline because these gases are heavier than air and can flow rapidly into the lower parts of the boat. They are very difficult to remove and are highly explosive.

### Propane tanks examination criteria:

- Tank(s) is/are in good condition.
- Cylinders (including used (unsealed) 1 lb cylinders) are to be stowed/located in an area:
  - with good ventilation (or draining outside the hull);
  - where escaping vapours cannot enter bilges, machinery spaces; accommodations or other enclosed spaces;
  - where there are no excessive variations in temperature.

## Ventilation

[SVR 718, 719, 720]

The Small Vessel Regulations sections 718, 719, and 720 outlines the requirements for ventilation on board small vessels.



## Gas Ventilation

All pleasure craft with inboard gasoline engine(s), except those with an open engine compartment, shall be ventilated to efficiently remove explosive gases from the bilge of every engine and fuel tank compartment.

Gas ventilation Examination Criteria (not yet compulsory with NYC):

- A vessel equipped with an inboard gasoline engine(s) must be equipped with a forced ventilation device (blower).
- Ventilation is installed in conformity with the regulations.
- The forced ventilation is in working order.

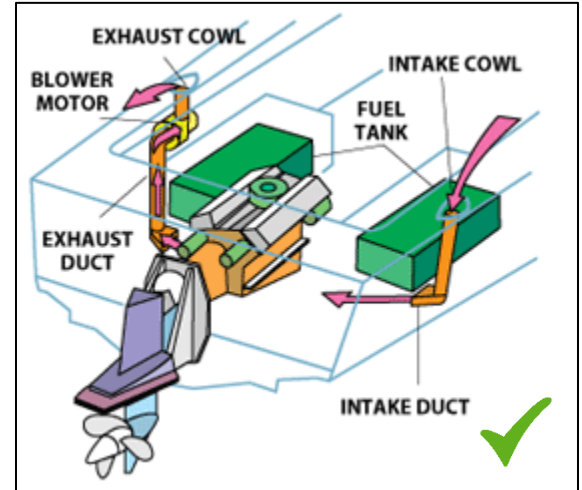


Figure 7 - Gas Engine Bilge Ventilation - USCG

## Vessel Pollution and Dangerous Chemical Regulations

[CSHA]

Vessel Pollution and Dangerous Chemical Regulations Examination Criteria

- Bilge must be clean, free of oil or any other contaminant (e.g. coolant).
- No evidence of leaks from the fuel tank(s)
- No strong fuel odours suggesting a fuel/oil leak

## Club Matters

**Storage on docks:** No storage is allowed on the dock.

**Dock lockers:** No paint, batteries, corrosive or environmental hazards.

## References

Canadian Standards Association (2012). Canadian Electrical Code Part 1, 22th edition, C22.1-12, 678 p.

Nanaimo Yacht Club (2018), Nanaimo Yacht Club Year Book 2018, Nanaimo Yacht Club Rules and Regulations.

National Fire Protection Association (2018). NFPA 10 - Standard for Portable Fire Extinguishers.

Government of Canada (2001), Vessel Pollution and Dangerous Chemicals Regulations, Canada Shipping Act, <http://laws-lois.justice.gc.ca/eng/regulations/SOR-2012-69/page-1.html#s-1>, viewed 2018-12-14.

Transport Canada (2011). TP 15029E – Pleasure Craft Courtesy Check Manual, Government of Canada, 76 p.



# VESSEL SAFETY INSPECTION

MEMBER		DECAL YEAR <b>2020</b>	SLIP #	DATE
		VESSEL NAME		LOA (FT)

COMPULSORY	<input checked="" type="checkbox"/>	N/A	<b>ADMINISTRATION</b>
			Current proof of insurance on file
			Signed mooring agreement on file
	<input checked="" type="checkbox"/>	N/A	<b>EXTERIOR</b>
			Electrical cable is of an adequate gauge <small>14 for 15 amp, 12 for 20 amp, 10 for 30 amp</small>
			Cable and connectors are in satisfactory condition
			Vessel is moored properly with lines that are in good condition <small>Size, good visual condition, belayed at a strong point</small>
COMPULSORY			Dock is free of gear / material
			Shed lockers are free of combustible and corrosive materials (Sheds Only)
	<input checked="" type="checkbox"/>	N/A	<b>ENGINE COMPARTMENT / BILGE</b>
			Fuel tank is in good condition – no evidence of leak
COMPULSORY			Flame arrestor and drip pan are clean and in good condition (Gas engine only)
			Bilge is clean and free of contaminant
			Mechanical ventilation is adequate and in working order (Gas engine only)
	<input checked="" type="checkbox"/>	N/A	<b>VESSEL</b>
			Tester shows adequate phases on all 120V electrical outlets (test GCFI if possible)
			Portable electric heater is equipped with an auto shut off <b>OR</b> has been approved by electrical committee
			Propane cylinders are stowed properly, vents are leading to the exterior of the hull and are clear
			Portable fuel tanks are stowed outside of the heated cabin
	<input checked="" type="checkbox"/>	N/A	<b>FIRE EXTINGUISHER</b>
			Has been serviced within the past 6 years and hydrostatic tested in accordance with mfg. recommendations. <small>Check mfg. date stamped, or service tag attached to the fire extinguisher. Max. 12 yrs for hydrostatic test.</small>
		Correct number, type and location on board the vessel <small>Refer to Transport Canada Boating Safety guide for details.</small>	
		Fire Extinguishers are stowed/installed in a conspicuous location	
The vessel is equipped with: <input type="checkbox"/> Marine toilet & holding tank <input type="checkbox"/> Porta-Potty <input type="checkbox"/> Marine toilet only <input type="checkbox"/> No installation			
Notes:			
The above-mentioned vessel:		I understand this inspection has been delivered by a volunteer of the Nanaimo Yacht Club and does not warrant the condition of the vessel or any equipment on board. Responsibility for compliance with all regulation and for the safety of the vessel and all related equipment lies solely with the owner and operator of the vessel. If any deficiencies are found in relation to the Nanaimo Yacht Club Rules, Regulations and By Laws, the owner must correct the above-mentioned deficiencies within two weeks of the inspection.	
<input type="checkbox"/> complies <input type="checkbox"/> do not complies with the Nanaimo Yacht Club Safety Requirements. <input type="checkbox"/> An annual inspection decal has been issued.			
Inspector:		Member (or delegate):	

WHITE: NYC YELLOW: MEMBER

NYC SAFETY INSPECTION FORM (10/19)