




Small Vessel Operator Proficiency Training Course

Responsible Authority	Approval
<p>The Director, Marine Personnel Standards and Pilotage is responsible for this document, including any changes, corrections or updates.</p>	<p>_____ Director, Marine Personnel Standards and Pilotage</p> <p>Date signed: _____</p>

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Important

**This publication is subject to periodic reviews and it is updated accordingly /
Cette publication est sujette à des revues périodiques et elle est mise à jour en conséquence.**

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General

1. Background

The subject matter contained herein meets the requirements of a stand-alone course that addresses the particular need for minimum training of operators of commercial vessels, other than tugs and fishing vessels, up to 5 gross tonnage engaged on a near coastal, class 2 or a sheltered waters voyage, and for fishing vessels up to 15 gross tonnage or 12 meters overall length engaged on a near coastal, class 2 (including an inland voyage on Lake Superior or Lake Huron) or a sheltered waters voyage.

2. Goals

To provide course participants with:


- a) a basic understanding of the hazards associated with the marine environment and their own vessel and the prevention of shipboard incidents;
- b) the knowledge and skills necessary to safely operate a small non-pleasure vessel in near coastal and sheltered waters under normal operating conditions, including darkness and restricted visibility;
- c) additional knowledge on aids to navigation and seamanship to supplement individual experience.

3. Practical aspects of delivery

- 1) Marine Safety's involvement will be limited to course accreditation and quality assurance.
- 2) Course providers will issue the training certificate in the form specified by Marine Safety.
- 3) Successful completion of the approved training course is mandatory – i.e. there will be no option of a challenge exam.
- 4) No requirement for a proof of continued proficiency is contemplated at this time.
- 5) Course will be made available to candidates as near as possible to their community.
- 6) A person must be at least 18 years of age before using this certificate to carry out the duties of an operator of a commercial vessel.

4. Number of participants

The number of participants in a class should not exceed 12 per instructor for any practical demonstrations and must not exceed 24 per instructor for lectures and audio-visual presentations.

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5. Duration

Minimum 26 hours including 2 hours for evaluation.

6. Evaluation

- 1) The written examination approved by Marine Safety contains 50 multiple-choice questions and the pass mark is 70%.
- 2) Administering the examination orally may be considered on a case-by-case basis.

7. Specific instructor qualifications


The main course instructor must hold a master certificate not lower than a Fishing Master, Fourth Class certificate or a Master 150 gross tonnage, Domestic certificate. The Master Limited certificate or other instructor qualifications will be considered on a case-by-case basis. If the course is under the supervision of more than one instructor, the assistant instructors must hold qualifications related to the marine industry or have related skills and be approved in accordance with the *Quality Management Manual – Marine Personnel Standards and Pilotage*.

Recognized Institution

Courses are to be provided by a “recognized institution” as defined in the *Marine Personnel Regulations*. Approval procedures are provided in the chapter entitled *Approval of Marine Training Courses and Programs* of the *Quality Management Manual – Marine Personnel Standards and Pilotage*, published by the Department of Transport, Marine Personnel Standards and Pilotage Directorate.


Institutions must submit for approval their course syllabus, training manual, instructor qualifications and any other information required by the above-mentioned document, to the following address:

Marine Personnel Standards & Pilotage
 Transport Canada, Marine Safety
 112, Kent Street, Tower B, 4th Floor
 Ottawa, Ontario K1A 0N5

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Course Outline

Knowledge Required	Teaching Time
1. Legal aspects and requirements of non-pleasure small vessel operations	1 hour
2. Basic construction terminology	0.5 hours
3. Vessel hull types and configurations	0.5 hours
4. Propulsion systems	1 hour
5. Mooring of a vessel and related seamanship work	0.5 hours
6. Manoeuvring a vessel	1 hour
7. Safe navigation and collision prevention	3 hours
8. Maintaining a vessel's stability	1 hour
9. Safe working practices and safety culture	1 hour
10. Marine weather and marine forecasts	2.5 hours
11. Use of radar for navigation safety	2 hours
12. Determination of a vessel's position using electronic navigation aids	1 hour
13. Use of marine charts and nautical publications to plan and execute a voyage	2 hours
14. Use of a magnetic compass for taking bearings and for steering	1 hour
15. The Canadian buoyage system	1 hour
16. Dealing with emergency situations	1.5 hours
17. The Search and Rescue resources	1 hour
18. Pollution prevention	0.5 hours
19. The Canada Shipping Act, 2001 and the Canadian regulations	1 hour
20. Departure preparation	0.5 hours
21. Quick reference checklists	0.5 hours
Examination	2 hours
Total	26 hours

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Course Syllabus

1. Legal aspects and requirements of non-pleasure small vessel operations

- (a) Understand the scope, purpose and limitations of the Small Vessel Operator Proficiency certificate
- (b) Define vessel, passenger and pleasure craft and understand applicable requirements when a vessel is not considered a pleasure craft
- (c) Know who requires a Small Vessel Operator's Proficiency certificate
- (d) Know Transport Canada's Small Vessel Inspections and Monitoring Program
- (e) Master's responsibility - safety (life, environment and property) and commercial aspects

2. Basic construction terminology

- (a) Definitions used to describe direction, locations and structural components of a small vessel
- (b) Know the basic terminology used in small vessel construction

3. Vessel hull types and configurations

- (a) Knowledge of the nature of displacement and planing hulls
- (b) Describe:
 - (i) an open vessel
 - (ii) an enclosed hull vessel
 - (iii) an inflatable rescue craft
 - (iv) a catamaran
 - (v) other hull types

4. Propulsion systems


- (a) Describe the various propulsion systems available for small vessels, including:
 - (i) outboard motors
 - (ii) stern drives
 - (iii) inboard engines
 - (iv) jet drives
- (b) Explain basic engine starting and shut down procedures
- (c) Describe engine and propulsion systems surveillance and monitoring required and actions to be taken in case of emergency, fault or alarm

5. Mooring of a vessel and related seamanship work

- (a) Understand the role of ropes, lines, knots and splices in the marine industry
- (b) Explain the different construction methods and properties and limitations of synthetic and natural ropes
- (c) List the names of the common mooring lines and how to properly secure a vessel to a dock (floating and non-floating wharves)
- (d) Understand the role and when to use fenders
- (e) Demonstrate basic knots, bends and hitches

6. Manoeuvring a vessel

- (a) Capacity to manoeuvre the vessel for berthing, departure from the dock, navigation and anchoring
- (b) Knowledge of the vessel's turning circle and manoeuvring characteristics
- (c) As applicable, the effect of propellers, rudders, jets and outboard engines when moving ahead and astern and when manoeuvring
- (d) Effect of winds and currents when manoeuvring
- (e) Understand what constitutes a good anchorage
- (f) Know how to properly lower and set an anchor
- (g) Know the procedures for riding at anchor
- (h) Know how to properly weigh and stow the anchor
- (i) Explain the different variations of small vessel anchors

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7. Safe navigation and collision prevention

A basic understanding of the *Collision Regulations* and Canadian modifications with particular reference to:

- (a) The terms “making way”, “underway”, “risk of collision”, “stand on vessel”, “give way vessel” and “safe speed”
- (b) Responsibilities for collision avoidance
- (c) The need to keep a proper lookout
- (d) Recognition of the signs, lights and shapes carried by vessels encountered in the area of operation
- (e) International and Canadian distress signals
- (f) The benefit and requirement to use a radar reflector
- (g) Actions to be taken in sight or out of sight of other vessels in good visibility and in reduced visibility
- (h) Navigation lights
 - (i) Describe navigation lights for small vessels including masthead light, sidelights and the stern light
 - (ii) Understand the role and use of all-round navigation lights
 - (iii) Understand the role and use of anchor lights
- (i) Sound signals
- (j) The role and use of shapes on own vessel and observed

8. Maintaining a vessel’s stability


- (a) Understand the hazards of Free Surface Effect
- (b) Understand the hazards of loose water (or fish) on deck
- (c) Understand the principles of vessel stability and precautions when loading and unloading weights (passengers, equipment, fish or cargo)
- (d) Know the effects associated with vessel load distribution and trim
- (e) Know the hazards associated during icing conditions
- (f) Understand the principles of freeboard and effects of fresh and salt water including Fresh Water Allowance
- (g) Know the importance of maintaining watertight integrity
- (h) Understand the requirement for proper stowage of equipment and cargo
- (i) Understand the concept and the importance of reserve buoyancy

9. Safe working practices and safety culture

- (a) Understand the necessity for keeping the vessel shipshape
- (b) Know the hazards within the marine workplace
- (c) Precautions necessary when working aloft
- (d) Precautions to be taken when entering confined spaces
- (e) Demonstrate the signals for directing winch or crane operations
- (f) Know the standard industry procedures for safe refuelling operations
- (g) Care of life jackets, PFD’s anti-exposure suits and other lifesaving equipments
- (h) Care of fire detection and extinguishing equipment
- (i) Flares: types, safe use, storage and disposal
- (j) Safety in towing (distress assistance)

10. Marine weather and marine forecasts

- (a) Understand the origin and reliability of a marine forecast and where one can be obtained
- (b) State the marine wind speed categories
- (c) Understand the significance and difference of the marine weather warnings, small craft warnings, gale, and storm warnings
- (d) Association between wind shift and the movement of a barometer
- (e) Know small vessel operating procedures in bad weather
- (f) Understand the significance of the various sea states and how they affect small vessel operation including land effects and deflection
- (g) Understand the danger associated with thunderstorms, squall line recognition

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- (h) Understand the conditions that lead to Icing
- (i) Associate the forecasted weather effect with loading a small vessel

11. Use of radar for navigation safety

- (a) Knowledge of the basic principle of radar and its functioning:
 - (i) Start-up procedure
 - (ii) Function and effect of main commands
 - (iii) Interpretation of the radar image
- (b) Ability to use radar for positioning:
 - (i) Identification of radar marks useful for navigation
 - (ii) Bearing-taking and distance measurement by radar
- (c) Understanding the use of radar for collision avoidance

12. Determination of a vessel's position using electronic navigation aids

Ability to correctly use the GPS:

- (a) Starting procedure and functioning of the device
- (b) Correct use of data supplied by the instrument
- (c) Recognizing possible errors, lack of reliability and the need to double check

13. Use of marine charts and nautical publications to plan and execute a voyage

- (a) Demonstrate ability to plot a position on the nautical chart
- (b) Understand the requirement to carry nautical charts on board
- (c) Demonstrate basic nautical chart reading, course and position plotting
- (d) Demonstrate the use of nautical publications (List of Lights, Canadian Tide and Current Tables, Notices to Mariners)

14. Use of a magnetic compass for taking bearings and for steering


- (a) Know how to use a magnetic compass and its application to the nautical chart of the operational area
- (b) Compass deviation on small vessels and how to check the compass and make a simple deviation card

15. The Canadian buoyage system

- (a) Understand the Canadian buoy system
- (b) Demonstrate using vessel models (or equivalent) how to navigate a channel marked by lateral buoys
- (c) Demonstrate using vessel models (or equivalent) how to navigate a waterway marked by day beacons
- (d) Explain fairway, bifurcation, cautionary, isolated and special purpose buoys
- (e) Explain how cardinal buoys indicate the preferred passage
- (f) Understand the significance of Scuba diving buoys and the "diver's flag"

16. Dealing with emergency situations

- (a) Be able to identify measures to be taken in emergency situations such as:
 - (i) Collision
 - (ii) Grounding
 - (iii) Flooding
 - (iv) Fire
 - (v) Man overboard
 - (vi) Release of a polluting substance or liquid
- (b) Measures to be taken to ensure protection and safety of crew members and passengers in emergency situations
- (c) The master's obligation with regard to initial and subsequent reports to be made in case of a marine occurrence

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17. The Search and Rescue resources

- (a) Know the Search and Rescue resources available in area of operation
- (b) Know the Marine SAR coordination system in the operational area
- (c) Understand what happens after an “operator” initiates a distress call
- (d) Know the spoken Distress, Urgency and Routine prefixes on VHF radio
- (e) Understand the responsibilities when hearing or responding to a distress call

18. Pollution prevention

- (a) Knowledge of the precautions to be taken during fuelling
- (b) Knowledge of the statutory requirements to report pollution incidents
- (c) Knowledge of *Division 4 – Sewage* and *Division 5 – Garbage* of the *Prevention of Pollution from Ships and for Dangerous Chemicals Regulations*

19. The Canada Shipping Act, 2001 and the Canadian regulations

- (a) Basic knowledge of the Canada Shipping Act, 2001
- (b) A basic understanding of the provisions of the:
 - (i) *Small vessel regulations* or *Fishing vessel safety regulations*, as applicable
 - (ii) Parks and Marine mammals Protection legislations if applicable
 - (iii) *Prevention of Pollution from ships and for Dangerous Chemicals Regulations*

20. Departure preparation

- (a) Understand the importance of running the bilge blower
- (b) Understand the necessity of planning for fuel consumption
- (c) Understand the benefit of using a “Departure Checklist”
- (d) Understand how to file a “Sail or Trip plan”
- (e) Understand the requirement to be aware of local hazards within the operational area

21. Quick reference checklists

The benefits of using the following checklists to improve operational safety:

- (a) Daily Maintenance Checklist
- (b) Weekly Maintenance
- (c) Safety Gear
- (d) Engine Start-up
- (e) Departure Preparation
- (f) Pre voyage
- (g) Post voyage
- (h) Fuelling
- (i) Heavy Weather