

## BASIC CREW STANDARD

### Course Description

This is one of the entry level courses in the series of Sail Canada courses on sailing keelboats and on cruising. It builds basic boating skills under sail and power, and develops the student's ability to assist in operation of an auxiliary powered sailing vessel as competent crew, by day, in light to moderate conditions. Individuals with minimal practical on water experience should consider completing the Start Keelboat Sailing standard before attending for this training.

This course introduces the operation of a cruising keelboat both as a powered vessel and as a sailboat. Terminology used in describing the boat and on water activities is taught and used throughout the course. Practical topics under power include simple maneuvering skills as well as departure from and return to dock. As a sailing vessel basic sailing skills are developed including sail selection, the use and positioning of sails to provide propulsion, and the operation of the vessel as crew. Required and recommended safety equipment is discussed as is the handling of emergencies that might be encountered while day sailing. The basic rules for avoiding collision with other vessels are explained and this information is applied during the practical sessions. The meaning of weather forecasts is clarified and the impact of weather on vessel operation, crew behavior, and on water activities is discussed. The curriculum includes an elementary introduction to the Canadian navigation system and to the basic use of charts and tide and current tables.

The program may be offered in a day sailing or live aboard format. It is envisioned that the day sailing format will be taught in not less than 27 hours of which at least 18 hours should be devoted to practical sessions on water. In a live aboard format the course may be offered over a period of 4 or more days. A challenge of the standard may be accomplished in a minimum of 4 hours afloat plus completion of the written examination.

### Objective

To be able to cruise safely in familiar waters as competent crew of a sloop rigged keelboat of 6 to 10 meters with an outboard or inboard motor in moderate wind and sea conditions by day.

### Prerequisites

None.

### Ashore Knowledge

#### Section I: Terms and Definitions

The candidate must be able to:

1. Identify and describe the following:

Hull and keel	Gooseneck
Bow, beam and stern	Boomvang and topping lift
Fenders	Shackles and fairleads
Deck, cabin and companion way	Cleats and winches
Rudder and tiller/wheel	Pulpit and pushpit
Cockpit and self-bailing cockpit	Stanchions and lifelines
Gudgeons and pintles	Main, jib and storm jib
Mast and boom	Genoa and spinnaker
Spreader	Head, tack and clew
Shrouds and stays	Luff, foot and leech
Tangs and turnbuckles	Battens, hanks and slides
Chainplates	Cringles and reef points
Running rigging	Standing rigging
Roller and jiffy/slab reefing	Sheets and halyards
Telltails/Ticklers	Outhaul and cunningham
Spring and breast lines	Roller furling

2. Describe the following with the aid of diagrams:

Ahead, abeam and astern, forward and aft;

3. Define and be able to identify these terms from a diagram:
- |                                  |                    |
|----------------------------------|--------------------|
| Port                             | Underway           |
| Starboard                        | No way             |
| Windward                         | In irons           |
| Leeward                          | Beating            |
| Tacking                          | Sailing by the lee |
| Gybing                           | Running            |
| Close Hauled                     | On a tack          |
| Port tack                        | Luffing (of sail)  |
| Starboard tack                   | Heading up         |
| Leeway                           | Bearing away       |
| Wash                             | Wake               |
| Reaching (Close, beam and broad) |                    |

### **Section II: Gear and Equipment**

The candidate must be able to:

4. List from memory:
- Transport Canada (TC) required items for the candidate's boat (*Safe Boating Guide*),
  - The rules for care of PFDs and life jackets,
  - The recommended method of testing for buoyancy in a PFD;
5. Describe:
- The reasons for keeping gear and equipment stowed in assigned places in a cruising boat,
  - The frequency of maintenance of a recreational boat and its equipment so that it is capable of functioning at all times,
  - The minimum items recommended for a waterproof emergency kit.

### **Section III: Safety**

The candidate must be able to:

- Describe the purpose of a safety harness and dangers of improper attachment in a cruising boat,
  - State the purpose of pulpits and lifelines;
- Identify the required navigation lights for:
  - A vessel under sail, under power, and at anchor and describe the angles of each,
  - An unpowered vessel less than 6 meters in length;
- Define what hypothermia is including:
  - The signs and symptoms and the major areas of heat loss to the body,
  - Steps for prevention,
  - Treatment for mild and severe hypothermia,
  - The actions to be taken by one or more individuals in cold water to increase survival time;
- Define what cold shock is including:
  - The signs and symptoms,
  - Steps for prevention,
  - Treatment for;
- Define what carbon monoxide poisoning is including:
  - The signs and symptoms,
  - Steps for prevention,
  - Treatment for;
- Describe the precautions taken to prevent undue magnetic influences to the vessel's compass;
- Describe the common sources of fire and explosion and list the methods for preventing such occurrences and actions to be taken in the event of an onboard fire;
- Describe safe refueling procedures;
- Identify the two scuba diving flags;
- Describe/list:
  - The danger involved in re-charging batteries,
  - How to safely launch flares,
  - The types of signals used to indicate distress,
  - The actions to be taken in case of a capsized;

16. Describe the uses, capabilities and limitations of a yacht radar reflector;
17. State the dangers of overhead power lines;
18. Describe:
  - a) Reasons for filing a float plan and who the plan should be filed with,
  - b) Items of important information which should be included in a float plan,
  - c) Reasons for completing a pre-departure checklist.

#### **Section IV: Rules of the Road and Canadian Regulations**

The candidate must be able to:

19. Apply Rules 12 to 17 of the *Collision Regulations* by means of diagrams;
20. Identify and describe the following:

Pleasure craft	Power driven vessel
Sailing vessel	Recommended gross load capacity
Compliance notice / Capacity plate	Recommended safe limit of engine power
21. Identify:
  - a) Four considerations in determining the safe speed to operate a vessel,
  - b) The actions and precautions to be taken in reduced visibility,
  - c) Responsibilities when operating in a commercial traffic lane;
22. Demonstrate knowledge of regulations applying to boaters as follows:
  - a) Identify the minimum required publications for operating a 10 meter pleasure vessel in unfamiliar waters,
  - b) Describe the guidelines for licensing and how a license number must be marked on a vessel,
  - c) Identify the principal acts and regulations that a pleasure craft operator should be knowledgeable about and the areas covered by each including:

<i>Canada Shipping Act (2001)</i>	<i>Small Vessel Regulations</i>	<i>Contraventions Act</i>
<i>Vessel Operation Restriction Regulations</i>	<i>The Criminal Code of Canada</i>	<i>Collision Regulations</i>
<i>Competency of Operators of Pleasure Craft Regulations</i>		

#### **Section V: Weather**

The candidate must be able to:

23. State three sources of marine weather information;
24. Interpret the marine weather forecast applicable to the area of operation, and describe how to apply the information as follows:
  - a) Determine whether it is safe to set sail in the candidate's boat,
  - b) Decide what changes are forecast for the next six hours and what expect these should have on the day's planned activities,
  - c) Identify the wind speeds associated with:

Light winds	Moderate winds	Strong winds
Strong wind warning	Gale warning	Storm warning
25. Describe local weather hazards, how they can be identified, the normal warning time available, and the actions to be taken to reduce/avoid effects.

#### **Section VI: Duties of the Skipper and Crew**

The candidate must be able to:

26. List the main responsibilities of the skipper and crew as listed below:

Skipper

  - a) Safety of crew and boat,
  - b) Briefing on location and operation of lifesaving and other safety equipment prior to getting underway,
  - c) Assigning duties,
  - d) Instruction in the safe use of the boat's equipment while underway,
  - e) Obligations on observing an accident or vessel in distress,
  - f) Actions to demonstrate respect for other boaters and other's property,

Crew

  - a) Obey skipper,
  - b) Assist skipper.

### **Section VII: Seamanship**

The candidate must be able to:

27. Describe the sequence of sail reduction as wind speed increases;
28. Describe the danger of a lee shore;
29. Understand the use of a Canadian Hydrographic chart of the local area as follows:

**Describe:**

- a) A chart,
- b) Aids to Navigation,

**Read:**

- a) Depth of water,
- b) Distance scale,
- c) Buoys and their significance,
- d) Types of bottom (sand, rock, mud and clay),
- e) Under water/surface hazards: kelp, cable, rock, shoals, cribs, wrecks, currents,
- f) Light symbols,
- g) Beacons;

30. Use of Tide and Current Tables to find:

- a) Times and heights of tides at reference ports,
- b) Direction and rate of current at reference stations;

31. Describe:

- a) The features of a secure anchorage,
- b) The holding characteristics of commonly used anchors,
- c) Suitable rode makeup and handling,
- d) Scope requirements when anchoring for lunch, overnight and rough weather;

32. Describe the immediate action to be taken for the following circumstances:

- |                            |                     |
|----------------------------|---------------------|
| a) Springing a leak,       | f) Dragging anchor, |
| b) Steering fails,         | g) Running aground, |
| c) Grounding at anchor,    | h) Broken halyard,  |
| d) Fouled propeller,       | i) Fire;            |
| e) Standing rigging fails, |                     |

33. Describe the one commonly accepted use for each of the following knots, bends and hitches:

- |                       |                                   |
|-----------------------|-----------------------------------|
| a) Figure Eight,      | d) Bowline,                       |
| b) Reef Knot,         | e) Clove Hitch,                   |
| c) Double Sheet Bend, | f) Round Turn & Two Half Hitches; |

34. Describe the use of the VHF radio for receiving weather reports and making emergency calls.

### **Afloat Skills**

(18 hours minimum) Recommended vessel should be a 6 - 10 metre, sloop rigged keelboat with an outboard or inboard engine.

### **Section VIII: Preliminaries**

The candidate must be able to:

1. Demonstrate on land the correct method of putting on a personal flotation device in the water;
2. Demonstrate the correct use of a heaving line;
3. Carry out a check of the vessel's gear and equipment in accordance with Sail Canada *Cruising Boat Checklist* and demonstrate use and care of onboard equipment;
4. Select, bend on, check and stow sails;
5. Coil a line and secure (sea coil);
6. Properly stow lines and fenders;
7. Demonstrate how to belay to a cleat;
8. Demonstrate safe winch techniques with particular emphasis on:
  - a) Possible high strain on sheet/halyard,
  - b) How to avoid riding turns (and how to clear),
  - c) Position of hands/fingers,

- d) Fitting and removal of winch handles.

**Section IX: Manoeuvring Under Power**

The candidate must be able to:

- 9. Start auxiliary engine on vessel **and under direction of the skipper depart from dock** observing commonly accepted safety practices;
- 10. Come to a full stop with **stem (bow)** one half boat length away from a buoy using reverse. (The objective of this manoeuvre is to know how much distance is required to bring a vessel to a full stop. Vessel is to be kept on a straight course while the manoeuvre is being carried out);
- 11. Manoeuvre and stop a vessel under power to a position alongside and parallel to a dock portside to and starboard side to not more than two feet off without the aid of lines, without the stern passing a given mark at any time during the manoeuvre;
- 12. Apply Rules 5 through 18 of the *Collision Regulations* as applied to a vessel under power;
- 13. Lower the anchor under the direction of the skipper, at the helm or handling ground tackle, under power. The boat will be in more than 3 meters of water and the anchor must not drag when tested under engine power at half-throttle astern;
- 14. Raise anchor under the direction of the skipper with boat ready and get under way, at the helm or handling ground tackle, under power;

**Section X: Handling Under Sail**

The candidate must be able to:

- 15. Hoist the basic sails while under power/at anchor, or mooring (head to wind, hoist main sail first), set appropriate luff tensions, and flake halyards;
- 16. Apply Rules 5 through 18 of the *Collision Regulations* as applied to a vessel under sail;
- 17. Act as crew responding to commands while demonstrating the proper techniques of beating, reaching and running; tacking and gybing; heading up, bearing away, luffing and heaving to; using the following commands and responses:

Commands	Responses	Alert
“Head Up”		
“Bear Away”		
“Ease Sheets”		
“Harden Sheets”		
“Ready About”	“Ready”	“Helms-a-Lee”
“Ready to Gybe”	“Ready”	“Gybe Ho”

- 18. As crew, assist the skipper in the management of the sail plan for different wind conditions and points of sail while keeping the vessel under control, either at the helm or controlling the sails by:
  - a) Reefing and shaking out the reef in the mainsail,
  - b) Reefing and shaking out the reef, or changing the headsail,
  - c) Easing or hardening sheets to achieve sail trim appropriate for the point of sail and conditions;
- 19. Demonstrate in response to the skipper's actions/commands, while under sail, the Triangle Method Crew Overboard procedure. Consider the crew overboard is wearing a PFD and able to assist him/herself. ;
- 20. In response to a Crew Overboard situation, both assisted and unassisted, bring the vessel into irons. Start the engine, lower or furl sails as required to gain control of the vessel, ensuring on-board control of all lines, and manoeuvre the vessel under power for a successful Crew Overboard recovery;;  
*Note: Both Performance Objectives (PO's) 19 and 20 above must be completed in reasonable time without losing sight of the victim or marker in the water.*
- 21. Lower sail while under power or at anchor or a mooring.

**Section XI: Making Fast and Snugging Down**

The candidate must be able to:

- 22. **Secure a vessel to a dock using appropriate dock lines to prevent excessive movement and set out fenders correctly;**
- 23. Stop auxiliary engine and secure when departing vessel for night, observing commonly accepted safety practices;
- 24. Tie the following knots, bends and hitches within 30 seconds each:



- a) Figure Eight,
- b) Reef Knot,
- c) Double Sheet Bend,
- d) Bowline,
- e) Clove Hitch,
- f) Round Turn and Two Half Hitches.

### **Outcomes and Evaluation**

Candidates are expected to demonstrate the ability to safely operate the vessel in daytime in moderate conditions as competent crew. These capabilities will be evaluated as part of the practical sessions. Candidate theory knowledge will be evaluated using a closed book written exam. For certification a 70% mark on this written exam is required.

### **Additional Notes**

This course covers an extensive suite of practical skill and theoretical knowledge. Students who have completed the Sail Canada Start Keelboat Sailing course or who have previous sailing experience will find that experience beneficial to their experience in this course. Practical sessions are typically offered on keelboats in the 6-10 metre range. The course is typically conducted with 3 or 4 students and the instructor on board. Some schools or clubs may offer this standard on larger vessels and may offer training times in excess of 27 hours.

### **Physical Requirements for Candidates**

These training sessions will require short periods of moderate upper body exertion, and a moderate level of arm strength. Participants will have the opportunity to experience sun, wind, spray, rain, and temperatures consistent with the time of year they take part in this activity. When underway the vessel may exhibit irregular motion due to wind and waves and temperatures may be cooler than on land. Participants will be expected to learn and demonstrate skills and perform tasks while the vessel is at the dock, at anchor, and when the vessel is underway. In a day sailing format, vessels will be underway for varying periods of time (up to 8 hours), during daylight, in light to moderate wind and sea conditions. These sessions are suitable for most fitness levels and will provide a good body core workout.

Participants taking courses in “live aboard cruise and learn” formats may also be subject to conditions normally associated with the Intermediate Cruising standard.

### **Resource Material**

CYA Basic Cruising Skills by Gillian West