



Boat Control On-Water Training **INSTRUCTOR MANUAL**

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Module 1: Introduction to Powerboating Single Engine Boat | Skills at Idle Speed Approx. 3-hour session



National Safe Boating Council Waiver and Release of Liability

I, _____ agree to participate in the National Safe Boating Council's *Module 1: Introduction to Powerboating*. I understand that this program will have on-the water sessions, and, like any program involving water, is inherently dangerous because of the possibility of immersion and even death. I also understand and am aware that each participant will be engaging in the training that involve risk of serious injury, which might result not only from their own actions, inactions or negligence but the actions, inactions or negligence of others or the conditions of the premises or of any equipment used.

I agree to abide by the rules and regulations as set forth by the National Safe Boating Council (NSBC). I agree to obey the instructor(s) and the supervisor(s) of the training. I promise to wear any safety equipment as required by an official of the NSBC such as, but not limited to personal flotation devices, non-slip footwear and appropriate clothing for the weather conditions. Prior to departing the ramp or dock, a pre-departure checklist and safety brief will be conducted to inspect the equipment to be used, and if anything is unsafe, they will immediately advise their instructor or supervisor of such conditions and refuse to participate until condition(s) is corrected.

I certify that I am in reasonably good health and that I am able to participate in this activity without adversely affecting any health problems. I will notify the supervisor and instructor(s) of any condition that may affect any participation and of any medication which I am currently taking.

Having read this waiver, I do hereby agree to release, waive, hold harmless, and discharge the NSBC, all sponsors, representatives and volunteers, any involved government organizations or other organizations and the boards, trustees, officers, employees, or volunteers of any of them, and if applicable, owners and leasers of premises used to conduct this event from any and all liabilities to the undersigned, his or her heirs and next of kin for any and all claims, demands, losses or damages or damage to property, caused or alleged to be caused in whole or part by the negligence of the persons, entities or otherwise.

I also grant permission to the NSBC and its sponsors to use any photographs, motion pictures, recordings or any record of this training for educational and legitimate purposes.

Signature

Date

Cell Phone Number

Emergency Contact Name

Emergency Contact Phone Number

_____ Check here if you are a weak or non-swimmer

_____ Check here if on medication or have health problems that may affect participation.
(Please list on the back of this page your health problems and/or medications)

Signature (guardian if participant is a minor)

Date



IMPORTANT NOTES

- Boat Control On-Water Training Modules 1-4 are the property of the National Safe Boating Council, Inc.
- Only current National Safe Boating Council instructors may use the instructor and course materials to ensure students receive exceptional instruction.
- The National Safe Boating Council's Boat Control On-Water Training Modules 1-4 are designed to cover all elements of EDU-1 On-Water Power Standards, the American National Standard for on-water, recreational powerboating skills. A student must complete all four modules to meet the ANS standard.
- Modules 1-4 were adapted from National Safe Boating Council's Close-Quarters and Open Water Boat Control curriculum.
- This course is approximately 3 hours long, but time length may vary depending on the age and boating experience of the student.
- A single engine boat should be used to teach skills at idle speed.
- This module presents skills in various environmental conditions, using a variety of boat types, which simply will not all exist during a course. Given the variables of weather, wind, current, and facilities, it may be necessary for the instructor to adapt or alter the skills progression. If the day of the course is breezy, the calm condition skills must be adapted or omitted. Likewise, if there is no wind, or no current, some skills must be altered or omitted.



Instructor: Please copy this form and complete for each course you teach. A copy of this form is required when you report the course to the National Safe Boating Council to maintain your certification.

Boat Control On-Water Training Module 1: Introduction to Powerboating		
Instructor Name:		
Date:	Location:	Number of students:
Environmental Conditions		
Wind:	Current:	Temperature:
<p><i>Note: This module presents skills in various environmental conditions, using a variety of boat types, which simply will not all exist during a course. Given the variables of weather, wind, current, and facilities, it may be necessary for the instructor to adapt or alter the skills progression. If the day of the course is breezy, the calm condition skills must be adapted or omitted. Likewise, if there is no wind, or no current, some skills must be altered or omitted.</i></p>		
Boat Description		
Type:	Length:	Color:
Student Roster		
First and last name(s):	Boat Operator License No.:	Age:



Preparation (20 - 30 minutes)

Completed while tied to the dock or in a protected open water location.

- Conduct pre-departure checklists and safety briefing.
- Life jacket mandatory wear policy for everyone on board including proper adjustment and fit, proper for activity being used, and serviceable condition.
- Inspection of boat systems and safety equipment.
- Obtain weather conditions and forecast.
- Discuss any potential hazards or conditions in the area.
- Explain how to safely enter and move about the craft with three points of contact maintaining stability.

1. Centering the Wheel (5 - 10 minutes)

Completed while tied to the dock or in a protected open water location.

1.1 Find the range of the wheel

- A. Turn the wheel hard right or hard left.
- B. Turn the wheel hard over the opposite direction, counting the number of complete turns.
- C. Divide the number of turns in half.
- D. Memorize that number.

1.2 Center the wheel

- A. Turn the wheel hard right or hard left.
- B. Turn the wheel back half way using the number of turns as the memorized number.
- C. The wheel is centered. Look back at the engine to confirm that it is centered.
- D. Place left hand in one place at the top of the wheel and keep it there.



2. Shifting Gears and Throttle Control (10 - 15 minutes)

Completed while tied to the dock or in a protected open water location.

2.1 Find the gear shift lever(s)

- A. Both hands on wheel.
- B. Move right hand to lever(s) without looking for lever(s).
- C. Move right hand back from lever(s) to wheel.
- D. Repeat, slowly at first, increasing speed until proficient.

2.2 Start the engine

- A. Follow all procedures for proper engine start (use of blowers, etc. as applicable).
- B. Ensure engine is running properly (water flow, oil pressure, etc.)

2.3 Forward shift (This can be done at the dock while tied up)

Shift into forward, idle speed, back to neutral

- A. Both hands on wheel.
- B. Move right hand to lever without looking for lever.
- C. Squeeze and hold trigger (if applicable).
- D. Move lever forward to engage forward gear, release trigger (if applicable). Avoid both grinding gears and increasing throttle above idle.
- E. Move lever back to neutral (using open hand if lever has a trigger). Avoid passing neutral and engaging reverse gear.
- F. Return right hand to wheel.

2.4 Reverse shift (This can be done at the dock while boat is tied up)

Shift into reverse, idle speed, back to neutral

- A. Both hands on wheel.
- B. Move right hand to lever without looking for lever.
- C. Squeeze and hold trigger (if applicable).
- D. Move lever back to engage reverse gear, release trigger (if applicable). Avoid both grinding gears and increasing throttle above idle.
- E. Move lever back to neutral (using open hand if lever has a trigger). Avoid passing neutral and engaging forward gear.
- F. Return right hand to wheel.



2.5 Forward to reverse shift (This can be done at the dock while boat is tied up)

Use all appropriate shifting skills

- A. Shift into forward, idle speed.
- B. Return to neutral.
- C. Count to five.
- D. Shift into reverse, idle speed.
- E. Return to neutral.

2.6 Reverse to forward shift (This can be done at the dock while tied up)

Use all appropriate shifting skills

- A. Shift into reverse, idle speed.
- B. Return to neutral.
- C. Count to five.
- D. Shift into forward, idle speed.
- E. Return to neutral.

2.7 Raise throttle and chop throttle (This can be done at the dock while boat is tied up)

Use all appropriate shifting skills

Note: This skill may be completed while secured to pier to avoid drifting. Be sure cleats, lines, and fenders are adequate.

- A. Shift engine(s) into forward.
- B. Smoothly raise (increase) throttle to rpm and hold for seconds.
- C. Smoothly chop (decrease) throttle to idle rpm.
- D. Return engine(s) to neutral.
- E. Repeat sequence in reverse gear.

3. Prepare the Boat for Departure (10 minutes)

(dock/slip/mooring/ramp/shoreline)

- A. Inform all aboard of their proper position to keep boat trim while leaving the departure point.
- B. Ready the lines and slowly leave the departure point taking into account wind, current and surroundings. *(Note: The instructor may take the helm to travel to the practice location because the detailed training to depart is covered in Module Two.)*
- C. While departing, care should be used to avoid contact with objects such as lines, structures, boats, people or shallow water. Avoid propeller damage in shallow water by keeping outdrive raised as needed/appropriate.
- D. Keep a proper lookout at all times confirming there are no conflicts with boat's intended actions in relation to other boats/activities in the vicinity. *(Note: Full S.C.A.N. technique is presented in Modules Two and Three.)*



4. Steering Straight at Idle Speed (15 minutes)

4.1 Steer straight toward a distant object

- A. Center the wheel.
- B. Keep left hand in one place on the wheel.
- C. Shift into forward gear, idle speed.
- D. Aim for a distant object, keeping eyes mainly on the bow and distant object.
 - When the bow drifts off course, turn the wheel the opposite direction to correct.
 - When steering, use short, quick jabs by turning the wheel briefly then quickly return to center.
 - Avoid over-steering by correcting before getting too far off course and by allowing time for the boat to respond to the previous correction. Travel a distance of at least 100 yards during this drill.

4.2 Steer at a different object (at least a change of 45 degrees)

- A. Select another distant object.
- B. Steer to aim at new object.
- C. Steer straight at object.

4.3 Steer off course then correct back on course

- A. Steer straight at a distant object for 100 yards.
- B. Intentionally steer off course at a 45-degree difference for several seconds then correct course to steer straight at same object.

4.4 Backing Down

- A. Center the wheel.
- B. Keep left hand in one place on the wheel.
- C. Shift into reverse gear, idle speed.
- D. Aim for a distant object astern, keeping eyes mainly between distant object astern and the bow.
 - When the bow drifts off course, turn the wheel the same direction to correct.
 - When steering, use short, quick jabs by turning the wheel briefly then quickly return to center.
 - Avoid over-steering by correcting before getting too far off course and by allowing time for the boat to respond to the previous correction.
- E. Steer straight in reverse for a distance of at least 50 yards.



5. Boater's Eye (15 minutes)

5.1 Determine when the boat is stopped

(Instructor may operate boat at first so student can focus on determining if the boat is stopped)

- A. Instructor operates the boat, making headway and steering straight.
- B. Student looks to side at nearby object and distant background, recognizing the changing alignment.
- C. Instructor stops the boat (on first attempts coast to stop then progress to Standard Stop).
- D. Student watches nearby object and distant background, recognizing exact moment alignment is unchanging.
- E. Students announces when "boat is stopped."

6. Standard Stop - Maintaining Bow Control (15 minutes)

6.1 Standard Stop

- A. While steering straight in forward gear at idle speed, shift into neutral.
- B. Coasting in neutral, keep the bow straight while steering with rudder effect only.
- C. When headway is minimal, center the wheel, shift into reverse at idle speed, and steer to keep the bow straight. (If bow goes right, turn wheel right to correct; if bow goes left, turn wheel left to correct.)
- D. While keeping bow straight and still in reverse, use boater's eye to determine the instant the boat is stopped. Shift into neutral when stopped.
- E. Assess whether boat is stopped, still making headway, or now making sternway.
- F. Maintain proper lookout while performing Standard Stop sequence.

Note: This skill is useful in beaching a boat on the shoreline. Time the drift of the boat to slide gently on to shore. Raise the lower unit as the boat drifts through shallow water onto shore to avoid propeller damage. Be alert for submerged rocks or other objects.

7. Urgency Stop (15 minutes)

7.1 Urgency Stop - Within One Boat Length Maintaining Bow Control

- A. While steering straight in forward gear at idle speed, shift into neutral.
- B. Coasting in neutral, keep the bow straight while steering with rudder effect only. Count 1-2-3-4-5.
- C. Shift into reverse, raise throttle above idle, keep right hand on lever(s), use boater's eye to determine when boat is stopped, while steering to keep the bow straight. (If bow goes right, turn wheel right to correct; if bow goes left, turn wheel left to correct.)
- D. Shift into neutral the instant the boat is stopped and assess whether boat is stopped, still making headway, or now making sternway.
- E. Maintain proper lookout while performing Urgency Stop sequence.



8. Understanding Weathervane Effect (15 -20 minutes)

8.1 Weathervane Effect

Position boat stern-to-wind

- A. Starting with the boat at any angle to the wind, determine wind direction and which direction to turn.
- B. Set the wheel hard over to the side of boat that is to the wind (windward side).
- C. Shift into reverse
- D. Shift into neutral when stern-to-wind.
- E. Center the wheel.
- F. Maintain proper lookout throughout maneuver.

9. Ferrying Using the Wind: Stern-to-Wind & Bow-to-Wind (20 minutes)

9.1 Ferry sideways, stern-to-wind

- A. Determine wind direction.
- B. Position the boat stern-to-wind (near a fixed target object to help monitor effectiveness).
- C. Ferry to starboard: Set the wheel some to the right, shift into reverse.
- D. Stay in reverse long enough to acquire the desired ferry angle with the wind slightly on the port side.
- E. Steer to maintain the desired ferry angle.
- F. Shift between reverse and neutral, staying in gear just long enough to offset leeway (stay adjacent to target object).
- G. End sideways drift: Pull stern back into the wind using some wheel to the left, shift into reverse until stern-to-wind.
- H. Ferry to port: Set the wheel some to the left, shift into reverse.
- I. Stay in reverse long enough to acquire the desired ferry angle with the wind slightly on the starboard side.
- J. Steer to maintain the desired ferry angle.
- K. Shift between reverse and neutral, staying in gear just long enough to offset leeway (stay adjacent to target object).
- L. End sideways drift: Pull stern back into the wind using some wheel to the right, shift into reverse until stern-to-wind.
- M. Maintain proper lookout throughout maneuver.



9.2 Ferry sideways, bow-to-wind

- A. Determine wind direction.
- B. Position the boat bow-to-wind (near a fixed target object to help monitor effectiveness).
- C. Ferry to starboard: Set the wheel some to the right, shift into forward.
- D. Stay in forward long enough to acquire the desired ferry angle with the wind slightly on the port side.
- E. Steer to maintain the desired ferry angle.
- F. Shift between forward and neutral, staying in gear just long enough to offset leeway (stay adjacent to target object).
- G. End sideways drift: Steer bow back into the wind using some wheel to the left, shift into forward until bow-to-wind.
- H. Ferry to port: Set the wheel some to the left, shift into forward (for twin engine shift starboard engine only).
- I. Stay in forward long enough to acquire the desired ferry angle with the wind slightly on the starboard side.
- J. Steer to maintain the desired ferry angle.
- K. Shift between forward and neutral, staying in gear just long enough to offset leeway (stay adjacent to target object).
- L. End sideways drift: Steer bow back into the wind using some wheel to the right, shift into forward until bow-to-wind.
- M. Maintain proper lookout throughout maneuver.



10. Ferrying Using the Current: Bow-to-Current (10 minutes)

10.1 Ferry sideways, bow-to-current

- A. Determine current direction.
- B. Position the boat bow-to-current (near a fixed target object to help monitor effectiveness).
- C. Ferry to starboard: Set the wheel some to the right, shift into forward.
- D. Stay in forward long enough to acquire the desired ferry angle with the current slightly on the port side.
- E. Steer to maintain the desired ferry angle.
- F. Shift between forward and neutral, staying in gear just long enough to offset drift (stay adjacent to target object).
- G. End sideways drift: Steer bow back into the current using some wheel to the left, shift into forward until bow-to-current.
- H. Ferry to port: Set the wheel some to the left, shift into forward.
- I. Stay in forward long enough to acquire the desired ferry angle with the current slightly on the starboard side.
- J. Steer to maintain the desired ferry angle.
- K. Shift between forward and neutral, staying in gear just long enough to offset drift (stay adjacent to target object).
- L. End sideways drift: Steer bow back into the current using some wheel to the right, shift into forward until bow-to-current.
- M. Maintain proper lookout throughout maneuver.



11. Holding Station Using Wind (20 minutes)

Note: Holding station means staying in the same position over the bottom, despite what the wind is doing to the boat. This skill is basically the same as ferrying except the desire is to avoid moving sideways while also avoiding downwind movement. The challenge is to use ferrying skills to keep the ferry angle so minimal that the boat does not inadvertently ferry off station. When holding station with the bow to the wind or current this set of skills is also used for approaching or departing a mooring buoy and avoiding contact with mooring line and buoy.

11.1 Hold Station: Stern-to-Wind

- A. Determine wind direction.
- B. Position the boat stern-to-wind within two boat lengths of a fixed target object.
- C. Hold station for one minute.
- D. Maintain proper lookout throughout maneuver.

11.2 Hold Station: Bow-to-Wind

- A. Determine wind direction.
- B. Position the boat bow-to-wind within two boat lengths of a fixed target object.
- C. Hold station for one minute.
- D. Maintain proper lookout throughout maneuver.

11.3 Approach and Depart a Mooring Buoy

- A. Determine wind direction.
- B. Position the boat bow-to-wind near a mooring buoy.
- C. While holding station at mooring buoy, secure the boat to the buoy avoiding boat and motor contact with mooring line and buoy. Turn off engine and check to ensure boat is properly moored.
- D. Re-start the boat. While holding station, detach mooring line, and depart the mooring avoiding contact with mooring line and buoy.
- E. Maintain proper lookout throughout maneuver.



12. Holding Station Using Current (15 minutes)

Note: Holding station means staying in the same position over the bottom, despite what the current is doing to the boat. This skill is basically the same as ferrying except the desire is to avoid moving sideways while also avoiding down-current movement. The challenge is to use ferrying skills to keep the ferry angle so minimal that the boat does not inadvertently ferry off station.

12.1 Hold Station: Bow-to-Current

- A. Determine current direction.
- B. Position the boat bow-to-current (near – within two boat lengths - a fixed target object to help monitor effectiveness).
- C. Hold station for at least one minute depending on current speed.
- D. Maintain proper lookout throughout maneuver.

13. Return or Leaving Dock/Slip/Mooring/Ramp/Shoreline

13.1 Return to Dock/Slip/Mooring/Ramp/Shoreline

- A. Determine current direction.
- B. Prepare the boat for arrival by readying lines, equipment and passengers for intended arrival maneuver.
- C. Check for a clear approach by confirming there are no conflicts between the boat's intended actions and other boats or activities in the area.
- D. Bring the boat to a predetermined point by using a stopping procedure; giving consideration to wind, current and boat traffic; and coming to a full, safe stop within 12 inches of the intended point of contact. (NOTE: Details on stopping and docking are presenting in future modules).
- E. Arrive at return point while maintaining a proper lookout for other boats, items in the water (like lines, floating debris, etc.), equipment or objects and people that might be in the way and with regard with water depth to avoid propeller damage. Use skills taught earlier in this module.

14. Secure the Boat

14.1 Prepare to Leave the Boat Unattended

- A. Secure the boat to the dock/slip/mooring/ shoreline by using *appropriate knots and lines, anticipating winds, currents and tides expected.
- B. Prepare to depart the boat having check and secured systems and equipment.
- C. Depart the boat by disembarking safely using three points of contact.

**Appropriate knots found in Student Manual – Essentials of Close-Quarters Boat Control – Appendix A – Knots to Know*

End of Module 1: Introduction to Powerboating