



Sail Nauticus Skipper's Test Study Guide

Practical Exam Standards | October 2022

The Skipper's Practical Exam is a skills test performed by the member candidate while sailing a Harbor 20. It will be administered by a Sail Nauticus (SN) Program Manager who will act as a trained, able-bodied crew member with limited sailing knowledge. The SN manager will *not* purposely cause problems, but neither will they help the candidate with a maneuver or decision. Their role as crew is to perform tasks **as directed** by the candidate, such as trimming/furling the jib, deploying fenders, helping with dock lines and flaking the main sail. As such, instructions and commands given by the candidate during the maneuver **must be specific enough** that a crew member with limited sailing/boat knowledge could sufficiently execute each task. The test will be administered in conditions that will allow the candidate to demonstrate the ability to safely and competently sail a Harbor 20 on the Elizabeth River in a Seamanlike manner.

This document is designed to help crew level members study and prepare for their Practical Exam by understanding what skills and procedures must be successfully demonstrated during the exam. If any of these tasks cannot be performed satisfactorily, then a Plan of Improvement (PIP) will be created for the candidate to work on with their mentor. The candidate will be required to schedule additional mentor sessions to address identified concern areas, **after which a follow-up exam may be scheduled no sooner than 2 weeks after the initial attempt.**

1. Safety Procedures

- a. Properly don a PFD before accessing the dock ramp or boat
- b. Conduct a proper VHF radio check with Sail Nauticus on channel 71
- c. Switch VHF radio to scan channels 13, 16 and 71 before leaving the dock
- d. Check that bilges are dry
- e. Verify running lights are working if test is conducted within 1 hour before sunset

2. Check and Confirm Harbor 20 Safety Systems and Equipment

- a. Fire extinguisher – installed forward, port side and is not expired.
- b. Type 4 PFD (throwable cushion)
- c. Paddle with adjustable handle in cuddy cabin
- d. Portable, manual bilge pump stored in lazarette
- e. Anchor, stored in forward, port seat locker. Confirm attached to anchor line.
- f. Verify contents of orange safety box:
 - i. Emergency Action Plan
 - ii. Local chart
 - iii. First aid Kit
 - iv. Emergency hand-held light
 - v. Whistle
 - vi. Boat registration card
 - vii. Space blanket

- g. Confirm motor battery is properly installed (starboard forward seat locker)
 - h. Demonstrate how to properly remove and reinstall the motor battery
 - i. Confirm battery charge greater than 50%
 - j. Confirm the magnetic key is NOT connected to the throttle controller, then properly deploy and secure the electric motor.
 - k. Ensure front end of motor housing (opposite the propeller) is angled toward the keel
 - l. Connect magnetic key to throttle controller and confirm motor operates in both forward and reverse.
 - m. Remove key from throttle controller until ready to depart the dock.
3. Rig the Harbor 20 per standard procedures
4. Motor Off the Dock
- a. Demonstrate proper tiller management during close-quarters maneuvering
 - b. Position boat so that boat stays centered in fairway during departure.
 - c. Operate boat in a slow, seamanlike manner while exiting the fairway, scanning for traffic or obstructions.
5. Demonstrate proper technique to raise sails
- a. Boat pointed into wind.
 - b. Main sheet, boom vang, Cunningham and reefing line all uncled before hoisting
 - c. Key removed from throttle box before stowing motor in lazarette.
 - d. Properly unfurl and tension jib.
6. Demonstrate ability to sail Harbor 20 on a variety of points of sail
- a. Must be able to maneuver boat to various points of sail (Close Hauled, Reaching, and Running) while
 - i. Communicating to crew the intent to head up/bear away
 - ii. Properly adjusting mainsail trim **as the maneuver is executed**
 - iii. Giving clear commands to crew to properly trim jib
 - iv. Maintain boat under control on each point of sail until test administrator tells candidate to change.
 - b. Upwind Sailing
 - i. Give crew clear commands to ensure jib is trimmed to keep both telltales streaming aft.
 - ii. Demonstrate how to properly determine if main sail is set, stalled, or luffing
 - iii. In gusty conditions, demonstrate how to use main sheet and crew positioning to control heel and steering of the boat.
 - c. Downwind Sailing
 - i. Give crew clear commands to ensure jib is properly trimmed.
 - ii. If sailing wing & wing, give crew clear commands to use jib wingers to hold jib on side opposite to main
 - iii. Be able to describe visual cues that an accidental jibe is pending
 - iv. Maintain boat under control on a broad reach or run for a period without incurring an accidental jibe.

- d. Tacking
 - i. Ensure the area is clear before executing tack
 - ii. Give crew instruction before tacking to ensure they are clear on what they need to do (leave jib trimmed, switch sides as boat moves through the wind)
 - iii. Give proper commands to crew for tacking (e.g. "Ready About"; "Helm's Alee"/ "Tacking")
 - iv. Execute tack and stop turn ideally on a close-hauled point of sail, but no further downwind than a beam reach
- e. Jibing
 - i. Ensure the area is clear before executing the jibe
 - ii. Give crew instructions before jibing to ensure they are clear on what they need to do during the maneuver
 - iii. Give proper commands to crew for jibing ("Prepare to Jibe" / "Ready to Jibe"; "Jibe Ho" / "Jibing")
 - iv. Execute jibe and stop turn, ideally on a broad reach point of sail, but no further upwind than a beam reach
- f. Man Overboard (MOB) Recovery
 - i. Demonstrate either the Figure-8 (preferred) or Quick-Stop maneuver
 - a) If demonstrating the Quick-Stop, candidate must explain the inherent issues with that maneuver on a Harbor 20 (cannot backwind jib), and when the maneuver might be risky to choose (high winds)
 - ii. Successful demonstration of either maneuver will result in
 - a) Boat stopped or nearly stopped, within arm's reach of MOB, on a **Close Reach** point of sail, both sails flogging, and MOB to **Leeward** of boat
 - 1) Boat can approach MOB on any point of sail between close hauled and beam reach, but must NOT be on either of those two points of sail.
 - 2) If approaching with MOB **Upwind** of boat, candidate must be able to explain risks inherent in doing so (wind on freeboard of boat can cause boat to drift away from MOB; waves can knock MOB into hull of boat)
- g. Reefing
 - i. Ensure boat is on a close reach, port tack, with main sheet and boom vang uncleated
 - ii. Candidate must hold boat on course while directing crew to:
 - a) Lower mainsail
 - b) Secure new tack
 - c) Secure new clew
 - d) Tension luff (use Cunningham and/or halyard)
 - e) Tie reef nettle around sail only using a square (reef) knot

- h. Shake out Reef
 - i. Ensure boat is on close reach, port tack, main sheet and boom vang uncleated
 - ii. Candidate must hold boat on course while directing crew to:
 - a) Uncleat reef line to release clew
 - b) Uncleat Cunningham and reposition in lower grommet of tack
 - c) Raise sail to full height
 - 1) Note: To ease pressure on sail, candidate can put the boat into the wind so that crew can raise the sail using the main halyard.
 - 2) Crew MUST be seated before turning boat into wind
 - d) Tension luff of main sail with Cunningham
 - e) Secure reef line and boom vang
 - i. Lower sails
 - i. Maneuver boat into wind
 - ii. Furl Jib
 - iii. Uncleat mainsheet while holding boat into wind
 - iv. Confirm magnetic key is not in throttle controller
 - v. Deploy and secure motor
 - vi. Insert key into throttle controller and use motor in forward to hold boat head to wind
 - vii. Direct crew to release main halyard, drop mainsail and secure to boom with sail ties.
 - viii. Move main halyard from head of sail to aft end of boom, then tighten halyard to raise boom parallel to deck.
 - ix. Tighten Main Sheet to keep boom centered
- 7. Motor back into Slip
 - a. Communicate plan for motoring into slip
 - b. Advise crew of their role (mounting fenders, handle dock lines) and give safety instruction to crew (stay seated till directed to stand, keep hands in boat, no jumping from boat to pier)
 - c. Motor boat back to slip with enough way on to maintain steerage, but no faster.
 - d. Guide boat into slip and direct crew when to step off and how to manage dock lines
- 8. De-rig Harbor 20 per Standard Procedure
 - a. Properly secure boat to dock
 - b. Position boat with bow 18-24 inches from pier
 - c. Confirm magnetic key is disconnected from throttle controller, controller power is OFF, then stow motor in lazarette
 - d. Adjust bow, stern and spring lines as needed to properly position boat in slip
 - e. Confirm proper cleat hitches are tied for all dock lines
 - f. Properly flake mainsail and secure to boom with sail ties
 - g. Secure jib with a sail tie
 - h. Properly coil and stow all running rigging, install tiller and mainsheet covers
 - i. Mainsheet must be coiled and hung from itself using a rolling hitch
 - j. Check battery charge level and remove battery to charging station if less than 50% charged.

9. Knot tying
 - a. Bowline
 - b. Round turn and 2 half-hitches
 - c. Square knot (Reef knot)
 - d. Figure 8 (Stopper) knot
 - e. Cleat hitch
 - f. Clove hitch
 - g. Rolling hitch

Actions that could Result in Candidate Failing the Exam

1. Handling the electric motor with the key attached to the throttle controller
2. Improper positioning of the boat while raising/lowering sails
3. Repeated improper execution of any required maneuver
 - a. Tacking – confusing tack for jibe, or not stopping turn before bearing away past a beam reach
 - b. Jibing – **Accidental jibe**, confusing jibe for tack, or not stopping turn before heading up past a beam reach.
 - c. Man Overboard – Failure to recover MOB by bringing boat to a stop/near stop, within arm's reach of MOB, on a point of sail **between** (but not including) close hauled and beam reach, with sails flogging.
 - d. Reefing – Pointing boat into wind to execute reefing maneuver, not giving clear instruction to crew such that they can safely execute each step of the reefing/shakeout procedure.
 - e. Not being able to describe the Point of Sail the boat is on at any time
 - f. Consistent improper sail trim when sailing on various points of sail
 - g. Inability to maintain a course when sailing on various points of sail
4. Any unsafe operation or behavior which could put boat or crew at risk, including not managing the main sheet and crew positions to effectively control heel and steering of the boat.