

PREREQUISITES:

- ASA 101 - Keelboat 1 Sailing

DESCRIPTION:

Able to skipper and crew a sloop-rigged keelboat of approximately 20 to 30 feet in length by day in winds up to 20 knots and associated sea or lake conditions, with intermediate knowledge and skills of sailboat handling, sail trim, boat balance, safety, and overall sailing performance.

KNOWLEDGE:

TERMINOLOGY

1. Review and be proficient with terminology listed in Elements 1-5 of the ASA 101 Keelboat 1 Sailing Certification Standard.
2. Identify and describe the following additional terminology:
 - **Crew Roles:**
 - Skipper
 - Helmsperson
 - Jib trimmer
 - Mainsail trimmer
 - **Wind & Sail Trim:**
 - True wind
 - Apparent wind
 - Air flow
 - Lift
 - Drag
 - Stall
 - **Sail Power:**
 - Angle of attack
 - Camber
 - Draft (depth)
 - Draft position
 - Twist

KNOWLEDGE (CONTINUED):

SAFETY PREPARATION AND PROCEDURES

3. Describe safety preparedness for a day sail, including weather conditions, crew capabilities, and vessel suitability.
4. Identify safety precautions to take when sailing upwind, downwind, tacking, jibing, while hoisting and dropping sails, and when un/docking and un/mooring.
5. Describe appropriate line handling procedures and use of a winch and winch handle.
6. Describe safe procedures for using fenders.
7. Diagram MOB procedures including Figure-8 and Quick Stop recovery.

BOAT HANDLING

8. Describe the actions and commands of the helm and crew when tacking.
9. Describe the actions and commands of the helm and crew when jibing.
10. Explain the benefits of a balanced boat and how to achieve balance using elements such as weather helm, crew weight, heel, sail trim, point of sail, and wind velocity.
11. Describe the advantages and challenges of steering with a tiller extension.

SAIL TRIM CONCEPTS

12. Describe how air flow across the sails generates lift.
13. Diagram the apparent wind triangle.
14. Explain the difference between steering to trim when sailing close hauled vs. sailing to course when reaching.

SAIL SHAPE AND POWER

15. Describe the three sources of sail power: angle of attack, depth, and twist.
16. Describe two ways to increase or decrease sail power by angle of attack.
17. Describe the difference in sail power between a flat vs. a deep sail shape.
18. Describe how changes in twist change sail power.

KNOWLEDGE (CONTINUED):

HOW SAIL CONTROLS AFFECT SAIL SHAPE AND POWER

19. List jib controls and describe their impact on angle of attack, depth, draft position, and twist.
20. Describe the impact of jib fairlead position on depth, twist, and telltales when close hauled and when reaching.
21. Describe the impact of mainsheet on angle of attack, depth, and twist.
22. Describe the impact of backstay on mainsail shape.
23. Describe the impact of traveler on mainsail shape.
24. Describe the impact of outhaul on mainsail shape.
25. Describe the impact of the jib sheet on pointing ability, boat speed, heel, and weather helm.
26. Describe techniques for maximizing sail power in light air on a close hauled course.
27. Describe techniques for maximizing sail power in light air on a reach.
28. Describe how to reduce power in heavy air.

SKILLS:

SAFETY PREPARATION AND PROCEDURES

29. Demonstrate safe and efficient use of a winch and a winch handle.
30. Demonstrate a MOB Figure-8 and Quick Stop recovery at each crew position using proper communication and teamwork.
31. List what is needed on boat inspection pre-departure (including safety gear)
32. Demonstrate pre-departure processes (boat inspection and crew readiness), and locate required and recommended safety gear.

BOAT HANDLING

33. Demonstrate getting underway and returning to a dock with various wind conditions, and demonstrate getting underway from a mooring and picking up a mooring.
34. Demonstrate proper techniques to rig and get underway, to stow and coil lines for easy release, and to drop and stow sails.
35. Demonstrate proper driver position and helm technique, including the use of a tiller extension.
36. Demonstrate proper tacking at each crew position, including commands, rate of turn, tiller handling, crew weight movement, and proper exit angle.
37. Demonstrate proper jibing at each crew position, including commands, pace of turn, helm handling, crew weight movement, and proper exit angle.
38. Demonstrate how to sail, center and lock the rudder, using crew weight and sail trim.
39. Demonstrate how to come out of irons by sailing backward and backing the jib.
40. Demonstrate how to heave-to and how to resume sailing.

SKILLS (CONTINUED):

HOW SAIL CONTROLS AFFECT SAIL SHAPE AND POWER

41. Demonstrate the use and impact of jib sheets.
42. Demonstrate the use and impact of jib leads.
43. Demonstrate the use and impact of jib halyard.
44. Demonstrate the impact of headstay sag.
45. Demonstrate the use and impact of the mainsheet.
46. Demonstrate the use and impact of the traveler.
47. Demonstrate the use and impact of the outhaul.
48. Demonstrate the impact of luff tension.
49. Demonstrate the use and impact of backstay / mast bend.

UPWIND SAIL TRIM

50. Adjust jib sheet and jib lead for optimum upwind sail trim in moderate air.
51. Steer to optimum telltale performance to maintain full sail power and a consistent angle of heel.
52. Adjust sail controls and helm for optimum sail power in light air for all points of sail.
53. Adjust mainsheet, luff tension, and steering (feathering), to depower and control heeling and helm in moderate and fresh conditions when sailing close hauled.
54. Set a close reaching course and set the mainsheet and jib controls for optimum shape in the conditions.
55. Demonstrate how the mainsheet, jib sheet, and traveler can be adjusted to depower and control heeling in gusts.
56. Steer upwind "in the groove" and on high and low edges "of the groove."
57. Demonstrate the proper technique to set and shake out a mainsail reef.

REACHING AND RUNNING SAIL TRIM

58. Demonstrate jib and mainsail trim on a close, beam, and broad reach, including the use of telltales and boom vang. Discuss adjustments for light and heavy air.
59. Change course from a close reach to a broad reach and back to a close reach with appropriate sail trim; include crew communication and position.
60. Demonstrate a deep broad reach where the jib collapses, and then head up enough to prevent an accidental jibe.
61. Demonstrate proper steering, sail trim, and crew position for sailing wing-on-wing.
62. Demonstrate how to maintain a steady course by adjusting sail trim and crew position.