Cal Sailing Club Basic Dinghy Sailing and Fastrack Syllabus

BASIC SAILING SYLLABUS

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Organization of the lesson

Number of students

Total live weight in a Lido 14 should not exceed 600 pounds. 500 is better. This is especially important on windy days. It's much better to go out with two students instead of three, unless some of the people on board are light.

Who goes first, short lesson

When there is a large disparity in experience levels of the two (or three) students, the least experienced students should be up first. This gives them the freshest instruction, and they are in a better position to follow the instruction of the more advanced students.

Alternating students, long lesson

Change the student on the helm every 10 minutes. You should all be working hard, and after 10 minutes the student will need a break. If not, the lesson is probably not making best use of the on-the-water time.

Placement of students

The student should sit in the proper position for the helm, far enough forward in the boat so that the tiller cannot touch their knee. Keep the other two students on opposite sides forward. Instructor should be on windward side (usually) and instructor always handles jib. With only two students, student not on helm stays on leeward side, or moves to centerline in strong wind.

Other things to remember

Repetition is the key to establishing sailing skill and coordination. Exercises should be repeated constantly. The boat should almost never sail in a straight line for more than 30 seconds at a time. Exceptions to this are remedial steering practice and close-hauled sailing orientation.

Jargon and nomenclature

Do not introduce new words unless they are absolutely necessary. Vocabulary is better learned on the dock or from the handbook. Keep the language simple. For the first two or three lessons, use "turn into the wind" and "turn away from the wind" instead of "head up" and "fall off" unless the student already understands these terms. The only words really needed for the first few lessons are: port, starboard, bow, stern, mast, boom, jib, mainsail, sheet, halyard, cleat, tiller, hiking stick, centerboard, rudder, luff, tack, come about, jibe.

Dialog

The instructor should be talking most of the time, and ask frequent questions to check and reinforce concepts and procedures.

What the instructor should know about the students

Can they swim?

Ask "if you all fall overboard at the same time, who should I pick up first?" to find out who the weak swimmers are. Non- swimmers should wear the AK-1 "collar type" life jackets, and special attention should be given to insuring that lifejackets are properly sized and adjusted for non-swimmers and weak swimmers.

Are they taking any drugs?

Painkillers, motion sickness remedies and other drugs can seriously impair learning ability and safety. Instructors may elect not to teach students using drugs, especially in high wind conditions.

Are there any other disabilities?

Students may be hearing-impaired or vision-impaired to varying degrees, or have other non-physical disabilities. Cal Sailing Club encourages people with disabilities to take lessons and become rated skippers if possible, but there is responsibility on the part of both the instructor and the student to make sure the instructor is fully aware of the students' limitations.

Wind direction

Definition of wind direction

Wind direction is defined as the direction that the wind is coming FROM. For example, a "west wind" blows from west to east. To answer the question "which way is the wind blowing?" it is improper to point downwind. Always point ***into*** *the wind to describe wind direction. For example, for a west wind, piont to the west and answer "the wind is from the west," or "the wind is from that way."*

Ripples on water

The smallest, newest ripples are the best wind indicators. Observe multiple superimposed wave patterns, practice distinguishing the wind ripples from other wave systems.

Flags

Useful for gross wind direction and speed, but subject to distortion from land features.

Shroud telltales

Sometimes useful for sail trim, but always distorted by boat motion and flow field around sails.

Luffing sails

Very accurate when boat is turned directly into the wind to test wind direction.

Other boats

Observe course, sail trim, heel angle of other boats to assemble a picture of the wind field over the sailing area.

Wet finger

Good light-air technique. Wet finger all the way around, side facing wind will be slightly chilled. EXERCISE (homework): practice indoors, walking down hallway. Vary speed to learn different feel of one, two, and three knots of wind.

Physical coordination in the boat

Climbing on and off

Boat is very unstable when bow is down and stern is up (narrower part of hull in water). Avoid more than one person near bow. Stay on centerline, be careful moving around mast, if one person is already in the boat they can make it easy for next person by moving all the way aft.

Where to sit

Far enough forward so that tiller can swing all the way across boat without hitting knees. Hiking stick should be at right angles to tiller when held by aft hand.

Changing sides in the boat

EXERCISE: Student changes sides, simulating tacking and jibing. Student should face forward during the changes, passing tiller with folded hiking stick behind their back. Boat remains tied to the dock. Instructor on foredeck provides compensating weight, talks student through imaginary tacks and jibes with correct timing. Repeat about 5 times.

Using the hiking stick and mainsheet cleat

EXERCISE: As above but with hiking stick. It's important to fold the hiking stick back alongside the tiller when switching sides, never rotate it around so that it extends forward from the end of the tiller. Cleat and uncleat the mainsheet on each side. Repeat 10 times.

Steering the boat

With tiller alone

Student steers at landmarks, instructor has mainsheet, jibsheet, is responsible for trim and balance of boat. EXERCISE: Student alternates between two landmarks selected by instructor - one a close reach course and the other a broad reach course if possible. Move immediately to next step if there is no problem.

With hiking stick

Use hiking stick, student on rail. Instructor moves to leeward if necessary. Student alternates between two landmarks selected by instructor. Stay on this exercise for as much as 10 minutes if student is having difficulty coordinating tiller and hiking stick motions to steer the boat accurately. Student may take mainsheet if they're doing well.

Remedial steering practice

*For students who are not steering effectively after 10 minutes: Shorten sail way down (reefed main only if it's windy), practice tacking around a pair of marks. Ideally the course will be a beam reach between the two marks. Instructor is responsible for **everything** except steering. Best if student **does not** have to switch sides, but this is only possible in light air. Include jibes if the wind is light, but no attention to sail handling by the student - just let it flip across. No hiking stick at first, but be sure to include some time with it before moving on to another exercise. About one out of three students will require remedial steering practice.*

Luffing and filling the sail

Identification of a luffing sail

DEMONSTRATION: Instructor sheets in and out, explains and demonstrates appearance of luffing and non-luffing mainsail. Not to be confused with leach flutter. Luffing begins at mast, progresses back along sail as extent of luffing increases. Luffing can also be identified as a "bubble" or break in continuous curved shape of sail near the mast.

By turning the boat

EXERCISE: Student turns boat into the wind and away from the wind to make sails luff and fill. Instructor points out luffing and filling, then student identifies when sail begins to luff and when it stops luffing. (Best to avoid the jargon "head up" and "fall off" until later.)

By trimming the sail

*EXERCISE: Student takes mainsheet, lets sail in and out **while steering a straight course**. Student identifies luffing and filling, instructor monitors accuracy of course steered, asks student to feel for effect of sail trim on steering force.*

Sail trim in open water

Mainsail trim

Instructor explains procedure for arriving at proper trim - let it out until it's luffing, then pull it in just enough to stop the luffing (without letting boat turn during adjustments). Force on sail is at right angle to surface of sail, because it's in the form of pressure. Letting sail out directs pressure more forward for more forward thrust. But letting sail out too far luffs sail and reduces pressure. Optimum is usually with sail just in from luffing. Do not spend time practicing, move to next exercises.

QUESTIONS: How can you tell if the sail is too far out? (answer: it luffs.) How can you tell if the sail is too far in? (trick question - you can't, unless you let it out so that it luffs, and then it's too far out.)

Jib trim

Mention briefly, demonstrate effect on mainsail trim. Student should not worry about jib at this point.

Reversing course and steering around a mark

Tacking in open water, beam reach to beam reach

EXERCISE: Tack from beam reach to beam reach in open water. It is important to use the hiking stick. The terms "ready about" and "hard a-lee" (or equivalent) should be introduced. Only repeat once or twice, then move to the next exercise.

Tacking around a mark, beam reach to beam reach

EXERCISE: Tack from beam reach to beam reach in open water. If two marks are available in the right orientation, sail between the two marks tacking around each one. If only one mark is available, tack in open water to return to the mark. Repeat many times until the boat is fully under control, and the roundings are clean and precise. The wake should leave a neat half-circle around the mark. If the course between the two mrks is not a beam reach, remind the student to re-adjust sail trim for the appropriate close reach or broad reach heading after each tack. Don't waste time on this vocabulary, though.

The difference between tacking and jibing

EXERCISE: If the wind is light, substitute free-form jibes for some of the tacks. Do not worry about sail handling for these jibes. The instructor tells the student to tack or jibe before each mark rounding, the student turns around the mark in the appropriate direction. Repeat until the student is getting it right every time.

Light-air circles

EXERCISE: If the wind is light, the student tacks around the mark, then does an open-water free-form jibe close to the mark, then tacks around it again, etc. The result is

medium-size circles around the mark. See how tight the student can make the circles.

Sailing upwind

Sailing upwind in a straight line

DEMONSTRATION: The instructor sails the boat close-hauled very briefly to demonstrate proper sail trim, posture and hiking stick geometry, and heel control.

EXERCISE: The student sails close-hauled. Emphasis on controlling heel angle and sail trim by steering, and sheeting the main all the way in. Rule of thumb: boom should be over the leeward corner of the transom. This is a good time to introduce the jib, especially as a more sensitive indicator of luffing. Instructor should still be controlling the jib sheet, though. Explain danger of sailing off the wind with sails stalled. Explain techniques for going around areas of biggest waves. Student should have several minutes of straight-line sailing without a course change if conditions permit.

Tacking, close-hauled to close-hauled

EXERCISE: Tack from close-hauled to close-hauled, starting with hiking stick out, main all the way in, boat fully powered up, and end in the same configuration on the other tack. Depending on wind speed, mainsheet should be let out slightly or released during tack. Instructor trims jib. If student likes to face aft while switching sides, explain advantages of facing forward:

1) Mainsheet does not need to be let out as far, because it can be released more quickly and easily during the tack if necessary.

2) Easier to see where the boat is going and how far and how fast it's turning throughout the tack

ten tacks in a row

EXERCISE: Tack ten times in a row, close-hauled to close-hauled. The hiking stick must be fully extended and the student fully hiked out, and the mainsheet all the way in for each tack to be considered complete. Using shore references for headings on each tack can help reduce oversteering or understeering problems. For most students, it is necessary to spend as much time on this exercise as on all previous exercises combined. It is also the recommended warm-up exercise at the beginning of a lesson.

EXERCISE: In light air, see how quickly the 10 tacks can be repeated. Time with a stopwatch.

Sailing upwind, remedial

*For students with upwind coordination problems, it may be acceptable to **temporarily** have the instructor trim the mainsheet, or **temporarily** allow the student to steer with the tiller instead of the hiking stick. However, difficulty with sheet or hiking stick probably indicates that it would be better to go back to earlier exercises. If student is not pulling in mainsheet all the way after each tack, mark the sheet with marking pen or tape to indicate correct trim. If conditions permit, have the student try eyes closes upwind steering, to demonstrate importance of tactile sensations and steering by heel angle.*

Upwind route planning

EXERCISE: With the boat near the downwind side of the sailing area, find a visible destination that is close to directly upwind. Have the student get to that destination, planning the tacks. This is a good light-air exercise.

Sailing downwind

Sail trim, broad reach

Discuss sail trim on broad reach, explain how standing rigging prevents letting sail out to point where it would luff.

Sail trim and centerboard on a run

DEMONSTRATION: Trim jib for wing-and-wing, raise centerboard. Explain by-the-lee sailing, danger of accidental jibe.

Jibing

Jibing in open water

DEMONSTRATION: Instructor sails boat through preferred method of jibing in open water. For the forward-facing easy jibe, the steps are:

1) Turn boat to dead run, fold up hiking stick alongside tiller.

2) Adjust main so that boom is over jib cleat. Out more in heavy air, in is okay in lighter air. In no case should the boom be able to touch the shroud.

3) Move to old leeward side of boat, passing tiller to the other hand behind back. Turn slightly to a by-the- lee course if necessary to keep boat in trim.

4) With tiller in aft hand, hold mainsheet between cleat and boom in forward hand.

5) Turn boat farther by-the-lee, and pull sheet (from middle, where it is being held) to start boom swinging across boat. Cushion landing of boom on other side with sheet.

6) Head up to new course, unfold hiking stick, trim main and hike out if necessary.

If student has been taught other jibing methods, explain advantages:

1) You are facing forward and can see where you're going.

2) You are ready to hike out immediately after the jibe, when a capsize is most likely to occur.

3) Very little physical strength is required.

4) You are steering with your hands throughout the maneuver

5) There is less mainsheet to pull in when the jibe is complete.

EXERCISE: Student jibes several times in succession, using landmarks selected by instrctor for course on each tack. Explain reversal of steering force during jibe, importance of being able to control the boat immediately after the jibe.

Jibing, remedial

EXERCISE: If wind is light to medium, practice jibing with the mainsheet all the way in. Instructor holds mainsheet, student jibes back and forth using only tiller, without changing sides. This to develop reflex for turning the boat in the proper direction to cause (or avoid) a jibe, and to emphasize the effect of jibing on steering force.

Control of the boat, remedial

The following list of priorities may be useful:

1) Directional control. Whatever is happening, always have control of the

boat's direction and rate of turn. Never let go of the tiller in a crisis. This is priority one.

2) Keep your weight on the "high" side. This alone is often enough to prevent a capsize. When jibing, it's critical to switch sides before the boom swings across, if at all possible. Staying on the high side is priority two.

3) Sail handling. Even if the mainsheet is wrapped around your neck, this is priority three after steering and weight. There is a tendency to pull the sheet (it's soft) and let go of the tiller (it's hard) in a crisis. Better to do the opposite.

Circles around a mark

Jibing at the mark

EXERCISE: Approach the mark on a reach, and jibe around it, leaving on a reach. Sail away from the mark far enough to tack and return again on a reach. Emphasize completing the jibe quickly, with least possible distance lost to leeward. The result is a large circle around the mark, with the mark close to the jibe point. Repeat until the jibes are fast and the turn tight.

Tacking at he mark

EXERCISE: Approach the mark on a reach, and tack around it, leaving on a reach. Sail some distance away from the mark and then jibe to return again on a reach. The result is a large circle around the mark, with the mark at the tacking point. Repeat until the distance required for the jibe is reduced, approaching the small circle geometry.

Small circles around the mark

Move the locations of the tack maneuver some distance away from the mark (1-2 boat-lengths in light to medium wind, further in strong wing) so that the mark remains approximately in the middle of the circles described by the boat. Explain that because of the upwind half of the circle, this is really a circle with a "corner" on it. EXERCISE: circle the mark as tightly as possible, keeping the boat a constant distance from the mark, if possible. Continue circling for at least 6-10 circles.

Advanced circling

EXERCISE: Ask the student to reverse the direction of circling. The student is responsible for planning the maneuvers to accomplish the reversal.

EXERCISE: When the circles are good, have the student be responsible for the jib sheets also. DEMONSTRATION: raise the centerboard during one of the jibes while the student is circling (sheet the jib in tight and trim the boat flat or heel slightly to windward to exaggerate the effect, if desired). See how long it takes for the student to identify the problem.

Person overboard

Slow sailing

Slow approach to a buoy (person overboard)

Docking

Sailing backwards

Docking practice

Special procedures

Heaving to

Anchoring

Reefing

Capsizing

Preparing for the Junior Skipper test

This document is still under development.
Comments and suggestions are appreciated.
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