

Logistic

- Lunch
 - o Coach will carry food and drink of the sailors
- Kids will need a notebook to take notes during the briefing/debriefing and keep track of setting
- Coach boat will record videos that will be used later during the debrief
-

Communication

- Sharing drills and theme by email 1 week in advance
- Short debrief email to summarize what was covered.

Schedule

Recommended warmup activities will start at 9:15

Start rigging 9:30

Time				
9:45	Briefing			
10:00	Launch			
10:15	sailing			
12:00Pm	Lunch			
3pm	Debrief/ watching video recording			
4:00	End of the session			

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Curriculum

Seamanship and Knowledge

- Sailing Knowledge Understands effects of sail trim and rig tuning on performance.
- Understands helm balance and the factors affecting it.
- Understands concepts of ladder rungs and velocity made good.
- Wind Awareness Understands apparent wind
- Knows the types of wind shifts.
- Able to call puffs, lulls, and shifts as they approach.
- Rigging and Tuning Can optimize rig tuning without assistance.
- Departing and Returning Can leave and approach a dock or mooring in all conditions.
- Knots Can tie boats down with knots or straps.

Boat Handling

- Boat Handling Can crab to windward for 30 seconds without going over the line.
- Can hold position within 2 boat lengths of a starting buoy for 30 seconds.
- Consistently uses weight and trim to steer.
- Refines Intermediate techniques for hiking, acceleration, slowing down.

Racing Skills

- Upwind Technique Sharpen intermediate skills to perform more consistently (95% of the time).
- Full use of sail controls.
- Adapt puff/lull response to different conditions.
- Sail in different modes (pinch, point, VMG, speed).
- Downwind Technique Sharpen intermediate skills to perform more consistently (95% of the time).
- Able to surf waves when conditions are appropriate.
- Opti: Sail by the lee as much as 20 degrees to maneuver without gybing.
- Reaching Technique Demonstrates proper sail trim and boat trim for the angle.
- Responds to puffs and lulls to maximize speed.
- Steers for balance on a broad reach.

Day 1

Briefing:

- Explain what will be covered.
- Describe how we will structure the day

Main theme: boat handling and Upwind technique

Rigging and Tuning

See tuning guides.

North Tuning guide

<https://www.northsails.com/sailing/en/resources/optimist-tuning-guide>

For Optimis, optimize sail gap along mast:

- For larger sailor that can work the boat, set tight and equal along mast
- For smaller sailor and in heavy air, set in a curve along mast with more gap in top and bottom and less in center.
- Guideline from top to bottom: <10 mm, 7 mm, 4 mm, 1 mm, 4 mm, 7 mm, 10 mm.
- Bottom mast gap matches top gap.

Tacking

Tacks with perfect exit angle and sail trim throughout.

Uses roll tack or flat tack as appropriate for conditions.

Flat tack when hiking hard consistently. Roll tack if not.

Activities

Videos of sailors tacking

Drill

tack on command after rabbit start

- Variations two whistles 360, three 720,

First sailor to accomplish 20 tacks.

Cone drill after rabbit start

Tack Master

Upwind Technique

Drills page 70, rabbit start, everyone should be on startboard and check if they can hold the lane

Day 2

Briefing:

- 5 minutes to review what was done during Day 1
- Explain what will be covered.

Main theme: Safety, Wind awareness, start techniques

Rigging and Tuning

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Activity on the water

Water Drills

Two-boat tuning Do two-boat testing on the water. Start with tuning guide setting and make tuning adjustments one at a time to see what makes the boat faster.

Safety

Crew overboard

Wind awareness

Activities

Videos of wind awareness

- Wind Shear and Gradient Effects on Trim & Strategy – drLaser <https://sailzing.com/wind-shear-and-gradient/>
- <https://sailzing.com/seeing-wind-on-the-water/>
- <https://sailzing.com/understanding-apparent-wind/>
- <https://sailzing.com/shore-effects-on-lakes-examples-and-cautions/>

Drill

Set up a windward mark. Boats sail upwind in pairs, with one boat directly downwind of the other. The upwind boat tacks periodically. The downwind boat then tacks to stay on the opposite tack. Coach asks both boats which boat is on the lifted tack. Or, coach could blow the whistle and have sailors raise their hands if they are on

the lifted tack.

Start technique

Pre-race routine:

- Collect information to determine strategy and where to start
- Line bias
- Line sight
- Favored side of course
- Next puff or shift
- Traffic
- Ability to tack if needed

Approach the line:

- Use different approaches (port, starboard, early, late).
- Retain ability to escape if too crowded.
- Account for wind direction in deciding how close to approach (e.g. must be closer to line if wind is left).

Create and defend a gap:

- Shoot up
- Back main to slow down
- Crab to windward
- Double tack
- Hook underneath a windward boat, or do a fake hook and slip in to windward of a boat.
- Defend by bearing/easing sails and then heading up again

Judge the line and accelerate:

- Use a line sight.
- Do not let boats on either side get bow out.
- Full speed and clear air at gun.

After the start:

- Concentrate fully on perfect sail trim and boat speed, using modes to hold a lane
- After a bad start bear off for a lane or tack and duck courageously and quickly.
- Get a clear lane and resume your strategy.

Video and tips on how to maintain your gap by shooting up. <https://rebrand.ly/4bmkc1g>

Drill

- Sailors sail single file across the line and raise their hand when they think they cross the line. Coach blows whistle when they actually cross. Repeat several times. Practices judging the line and encourages use of line sights. Then have sailors get a line sight and try again. Refer to SDME, page 116.
- Start one boat doesn't have a watch

Day 3

Briefing:

- 5 minutes to review what was done during Day 1
- Explain what will be covered.

Main theme: start techniques, downwind techniques

Rigging and Tuning

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Activity on the water

Water Drills

Two-boat tuning Do two-boat testing on the water. Start with tuning guide setting and make tuning adjustments one at a time to see what makes the boat faster.

Safety

Crew overboard

Wind awareness

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Videos of wind awareness

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blow the whistle and have sailors raise their hands if they are on the lifted tack.

Start technique

Pre-race routine:

- Collect information to determine strategy and where to start
- Line bias
- Line sight
- Favored side of course
- Next puff or shift
- Traffic
- Ability to tack if needed

Approach the line:

- Use different approaches (port, starboard, early, late).
- Retain ability to escape if too crowded.
- Account for wind direction in deciding how close to approach (e.g. must be closer to line if wind is left).

Create and defend a gap:

- Shoot up
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- Hook underneath a windward boat, or do a fake hook and slip in to windward of a boat.
- Defend by bearing/easing sails and then heading up again

Judge the line and accelerate:

- Use a line sight.
- Do not let boats on either side get bow out.
- Full speed and clear air at gun.

After the start:

- Concentrate fully on perfect sail trim and boat speed, using modes to hold a lane
- After a bad start bear off for a lane or tack and duck courageously and quickly.
- Get a clear lane and resume your strategy.

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Drill

-Approach a mark with full speed, must stop directly leeward of the mark without hitting it. Once stopped, accelerate, tack and approach again.

-Gybe out at the pin: stop at the leeward of the pin, gybe out and start on port.

- Box drill Refer to SDME, page 132.

-Recalls During starting practice, recall two boats randomly while fleet sails on.

-Sharks and Minnows Assign boats to be either sharks or minnows. Sharks try to prevent minnows from being in front row at start. Improves pre-start tactics. Many variations. Refer to SDME, page 164.

-Port approach Assign several sailors to make a port tack approach. Refer to SDME, page 142.

Downwind technique

Activities

Sharpen intermediate skills to perform more consistently (95% of the time).

Able to surf waves when conditions are appropriate.

Opti: Sail by the lee as much as 20 degrees to maneuver without gybing.

<https://sailing.com/sailing-by-the-lee-a-primer/>

Downwind Boat Speed

Checklist: Avoid the Slows <https://sailing.com/downwind-boat-speed-checklist/>

Drill

-Downwind speed testing Boats line up on equal ladder rungs and sail downwind side-by-side.

Try to gain on boats around you.

-Windward/leeward course Sail a continuous windward/leeward course. See SDME, page 78.

Day 4

Briefing:

- 5 minutes to review what was done during Day 1
- Explain what will be covered.

Main theme: Gybing, Mark rounding

Rigging and Tuning

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Activity on the water

Water Drills

Two-boat tuning Do two-boat testing on the water. Start with tuning guide setting and make tuning adjustments one at a time to see what makes the boat faster.

Gybing

Gybes with perfect exit angle and sail trim throughout.

Uses roll gybe or flat gybe as appropriate for conditions.

Roll gybe in less than 10-12 mph:

- Bear away gently as you sheet in three armfuls of mainsheet.
- In lighter air may not need the three armfuls of mainsheet
- Lead with back foot, facing forward grab the mainsheet falls (all three of them), standing if necessary.
- Steer down more and pull; be slow and smooth with your pull.
- Duck, jump to cross, and sit gently.
- Focus on good timing and smooth movement across the boat.
- Steer back, then swap hands.
- Make sure once in control and seated that the sail goes out again

Activities

Sharpen intermediate skills to perform more consistently (95% of the time).

Able to surf waves when conditions are appropriate.

Opti: Sail by the lee as much as 20 degrees to maneuver without

gybing.

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Downwind Boat Speed

Checklist: Avoid the Slows <https://sailing.com/downwind-boat-speed-checklist/>

Drill

- First to twenty gybes Start boats sailing downwind, spread out to create room. On the whistle, sailors begin gybing constantly, counting the gybes. First boat to complete 20 wins.

- Gybing ladder Boats follow each other closely in single file downwind. First boat gybes on whistle, others follow in sequence. Refer to SDME, page 40.

Mark rounding

Performance Description

100% of the time: perfect wide and tight roundings, with proper rate of turn and sail trim to maximize acceleration around the mark. Use apex turn if no boats are close behind

When no boats are close behind, an apex turn is better.

The apex turn is taken close to the mark and is symmetrical around the mark.

This results in less distance traveled.

Still must be wide enough turn to maintain speed.

Drill

-Crosswind Figure 8/Oval Set up a crosswind course with two marks. Sailors sail in a figure eight or oval. Creates a high number of mark roundings in a short period of time. Refer to SDME, page 94.

-Course Drills Variety of course drills - slalom, figure eight, windward/leeward, diamond, square, trapezoid. Each involves multiple boat handling skills. Refer to SDME, pages 76 - 89.

-Weather Mark Madness Set up a start line and a short windward leg, skewed to the right. All boats should tack to port and sail to the mark. Emphasize no collisions at the crowded mark.

-Up/down Drill begins just like a normal race
Coach has the option of blowing whistle before the students reach windward mark

When whistle is blown, students round down and head for the leeward mark.

Emphasize no collisions at the crowded mark.

Refer to SDME, page 42.

Day 5

Briefing:

- 5 minutes to review what was done during Day 1
- Explain what will be covered.

Main theme: Upwind strategies, races and fun

Rigging and Tuning

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Activity on the water

Water Drills

Two-boat tuning Do two-boat testing on the water. Start with tuning guide setting and make tuning adjustments one at a time to see what makes the boat faster.

Upwind strategies

Drill

-Long beat Rabbit start and sail course with extra long upwind leg. Teaches patience and working shifts.

-Tack and duck the fleet

(also called Argentinian drill)

Boats do a rabbit start and sail upwind. On whistle, furthest boat to leeward must tack to port and either duck or the whole fleet. She can then tack back to starboard. Refer to SDME, page 60.

-Pick a side Set up a medium length windward course, with two intermediate marks halfway up the leg. The intermediate marks should not be on the laylines, but should clearly divide the course into two sides.

Assign sides or let sailors pick a side. Sailors must rounding outside the intermediate marks on their side before sailing to the windward mark. This drill shows sailors that they can be successful by winning their side, even if the other side turns out to be better. It also

encourages working a side rather than crossing the middle frequently, which is often a poor strategy.

Additional Land/Water Drills and Activities

-Tack or duck? Two or three boats start by sailing away from each other on a beat. 5-10 seconds later they tack back. The boat on port must decide if they want to tack and lee bow or duck. If they duck, the boats go for another 5-10 seconds and then come back together and do it again. If the boat lee bows, the boat that got lee-bowed tacks away and comes back on starboard.

Tacking duel For two boats. One boat starts a few boat lengths ahead. Second boats starts on opposite tack and tries to pass lead boat with good speed and good tacks. Refer to SDME, page 60.

-Four Tacks Each boat can only tack 4 times on each upwind. Emphasis on taking the most important shifts rather than reacting to small changes.

Human Race - Upwind After an ordered start, boats try to get the boat behind them to finish last. Improves awareness of relative position on an upwind leg. Fun, competitive activity. Refer to SDME, page 168.

Races

Short windward leeward races

Day 6

Briefing:

- 5 minutes to review what was done during Day 1
- Explain what will be covered.

Main theme: downwind strategies , races and fun

Rigging and Tuning

See tuning guides.

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Activity on the water

Water Drills

Two-boat tuning Do two-boat testing on the water. Start with tuning guide setting and make tuning adjustments one at a time to see what makes the boat faster.

Downwind strategies

Consistently uses a full range of downwind strategy and tactics.

Have a plan before you round the windward mark

- Which gybe will be headed?
- Where is the next puff or shift?
- Where is the leeward mark?
- Is there traffic that will disturb my air?

Stay in the puffs longer by sailing down with them.

Avoid the laylines and corners. Use your wind vane to judge the layline to the leeward mark.

Manage speed and heading to optimize progress to the mark

- Up in the lulls, down in the puffs
- Sail low first when the wind will decrease during the run. Sail high first when the wind will increase during the run.

Use tactics to help accomplish strategy:

- Attack other boats using your wind shadow
- Defend against other boats taking your air: use your wind vane to judge.

Drill

-Ordered start to downwind leg

Sailors round windward mark in single file and try to pass boats ahead. Refer to SDME, page 128.

-Finding a lane - downwind Sailors round top mark in a pack and sail toward leeward mark. Sailors try to maintain clear air. Coach encourages sailors that are not in clear air to find a lane. Refer to SDME, page 158.

Additional Land/Water Drills and Activities

-Tactical race Two boats start nose to tail on a beam reach and bear away to downwind at a signal. Windward boat tries to roll over leeward boat. If leeward boat gets rolled, she gybes and tries to regain advantage. Other boat gybes and tries to defend its lead. Continue until one boat is able to cross on opposite gybe.

-Modified windward/leeward

Start with a short beat, then a longer downwind leg, and a short beat to the finish.

-Human Race - Downwind After an ordered start, boats try to get the boat behind them to finish last. Improves awareness of relative position on an upwind leg. Fun, competitive activity. Refer to SDME, page 168.

Races

Short windward leeward races

Day 7

Briefing:

- 5 minutes to review what was done during Day 1
- Explain what will be covered.

Main theme: Reaching Strategy , races and fun

Rigging and Tuning

See tuning guides.

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- Bottom mast gap matches top gap.

Activity on the water

Water Drills

Two-boat tuning Do two-boat testing on the water. Start with tuning guide setting and make tuning adjustments one at a time to see what makes the boat faster.

Reaching Strategy and tactics

Sails the rhumb line, deviating as needed based on traffic and anticipated changes in wind.

Deviate from the rhumb line when needed:

- Sail high with traffic close behind. Do this forcefully enough to avoid being covered or rolled.
- Sail higher initially if the wind will be stronger at the next mark.
- Sail low initially with no traffic behind and if the wind will be lighter at the next mark.

Fight for inside position at the mark.

Drill

-Ordered start to reach leg Do an ordered start around a windward mark to a reach leg set at ~ 135 degrees to the true wind. Object is to try to pass other boats and not get passed before the next mark. Sailors should use the strategies described in the performance notes. You could score the drill for each sailor based on number of boats passed minus number of boats that passed the sailor.

-Trapezoid Sail trapezoid courses with short beat, short run, and long reaches,

See SDME, page 86.

Races

Short windward leeward races

Day 8

Briefing:

- 5 minutes to review what was done during Day 1
- Explain what will be covered.

Main theme: Last leg Finishing , races and fun

Rigging and Tuning

See tuning guides.

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Activity on the water

Water Drills

Two-boat tuning Do two-boat testing on the water. Start with tuning guide setting and make tuning adjustments one at a time to see what makes the boat faster.

Last leg finishing

Consistently uses a full range of last and finishing strategy and tactics.

Last beat:

- Loose cover early
- Tight cover later if needed

Positioning for finish:

- Identify the favored end of the line early enough for positioning.
- When uncertain, position yourself where the inner laylines meet.
- Do not overstand.

Tactical advantage for finish:

- Use starboard tack advantage.
- Pin boats below the layline.
- When pinned, slow down and tack away.

Drill

-Ordered Start to Upwind
(or Downwind) Finish

Upwind finish: ordered start from a leeward mark to an upwind finish line.

Downwind finish: ordered start from a windward mark to a downwind finish line.

Repeat several times, changing the order.

Refer to SDME, pages 152 and 154.

Additional Land/Water Drills and Activities

-Biased line Set a biased finish line. Boats do a rabbit start 100-200 yards from the line to increase chances of a close finish. Use tactics to finish at favored end.

Races

Short windward leeward races