

Rigging Tuning and Sailing the Day Sailer

The following material has been gathered from reading in *The Day Sailer* and by discussions with champion Day Sailer sailors. Experts will disagree over many of the details, but they appear to be in agreement about the main points presented here.

Rigging

The Mast should be vertical or raked slightly forward. Should be flexible, like the Proctor Beta Minus (no longer made), or the Proctor Epsilon, introduced in 1982. Steel halyards advisable, preferably internal. Mast have painted bands at least 3/4" wide, plainly visible, 20'6" maximum apart.

Shrouds and Jib Stay should be tight but not taut. Some experts say that shroud-stay tension is unimportant. In any event, the leeward shroud will always be slack when under way.

Shroud Telltales have little utility if the boat has a masthead fly.

A Masthead Fly is essential, most important for reaching and running.

The Boom should be as light as possible and equipped with an internal, easily adjustable outhaul with a considerable mechanical advantage. A roller reefing boom is handy (though not for reefing) but not essential. A plainly visible band must be painted at the outboard end of the boom, 3/4" wide, the inner edge 10 feet maximum from the after side of the mast. The clew shall not extend beyond the inner edge of the band.

The Vang is important for both safety and speed. The O'Day version is too light in construction and has insufficient mechanical advantage, which should be at least 6 to 1. Can Am can make you up one. Proctor sells them.

The Cunningham is important for speed. It keeps the draft of the main forward in heavy winds. A simple rig, but it should have a big mechanical advantage. Can Am has a good cam cleat fitting for the mast.

The Barber In-Haulers are (there are two, one for each jib sheet) simply a line (free to slide on a block on the jib sheet) by which the jib sheet may be pulled one to four inches toward the centerline after the jib sheet has been properly secured for a close-hauled leg. The barber hauler enables a boat to point significantly higher than otherwise and can easily be rigged by the owner. Never used off the wind.

Main Sheet Traveler can be either mid-boom or end-boom rigged. Each has its advocates. The essential characteristic of a good traveler is that it allows the point from which the boom is pulled inboard to be adjustable to windward or leeward so that the leech as well as the boom can be controlled.

The Centerboard should be fair, smooth, stiff and foil shaped. Mark Lindsay makes the best. A good centerboard increases speed and dramatically increases pointing ability.

The Rudder probably does not make as much difference as the centerboard, but a properly shaped, built and finished one increases control on windward legs and is especially useful on reaches, because it does not stall, as an ordinary rudder does. Mark Lindsay also makes fine rudders. The rudder should be adjusted so that the blade stays down (vertical) under all sailing conditions, but pops up when it hits an obstruction.

The Tiller Extension is essential when racing to allow the skipper to hike out when well forward in the cockpit. Length of the extension should be at least three feet long and might well be as long as the tiller. It is on a swivel with some arrangement to keep it out of the way on top of the tiller when not in use.

Hiking Straps are useful because they make it easier for the crew to keep the boat flat for long periods of time.

A clean smooth bottom is essential in achieving maximum speed.

Weight. A racing boat should be as light as the rules permit: A minimum (with spars, standing and running rigging, rudder, centerboard and tiller) of 575 pounds. Most Day Sailers are well above the minimum. The less weight, the faster the boat. Floor-boards are not for racing, but an anchor and anchor line must be carried. Whatever weight is in the boat should be as low in the boat and as close to the center of the boat as possible.

Sails should be artfully designed and made by a skillful sailmaker specializing in small boat one-design sails. They should also be in good shape. All sails tend to stretch out of shape and become relatively ineffective with use. Especially true of the jib. Do not allow your sails to wrinkle or when not in use to be exposed to the sun. A high window in the main and a low one in the jib are highly desirable. The jib should carry one or two sets of jib tails, located about five inches in from the luff and the lower one about a third of the way up the luff. Wholly indispensable for safe, fast sailing. It is desirable to have an easy way to adjust the jib luff tension, a "magic box" or a through-deck system of control.

Tuning

Underway Tuning is the process of making adjustments in spars, sails, centerboard and weight distribution for different points of sail and wind conditions. It is most effectively done by sailing with another Day Sailer, when the pace boat sails on one point of sail at best speed for a considerable distance without making adjustments. The other boat can then sail along, trying out various adjustments to see how they affect speed for any given point of sail or wind condition. The following discussion will be centered about the general kinds of adjustments to be made on various points of sail and in various wind conditions.

Sailing

Close Hauled Adjustments in Very Light Winds (0-4 knots)

Mainsail

Vang: connected but no tension.

Cunningham: connected but no tension.

Outhaul: just tight enough to take the wrinkles out of the foot. In a real drifters, a very flat sail may be highly effective upwind.

Sheet: boom 6" to 8" to leeward of center line and the traveler the same distance to windward.

Jib

Leech: trimmed so that it has the same curve as the main, and should be trimmed in as far as possible without taking the curve out of the leech. All this is to avoid stalling the jib; that is, stopping the boat.

Sheet: fairlead in forward position.

Luff tension: very light. A few wrinkles along the luff are helpful on all points of sail in all wind conditions.

Barber In-Hauler: 2 to 2 1/2" in from edge of cuddy.

Centerboard

Down all the way, perhaps even a bit forward of the vertical position.

Weight

Crew weight as far forward as possible (but all members of the crew must be in the cockpit). Boat must be flat, unless a little tilt to leeward helps fill the sails.

Close Hauled Adjustments in Light to Medium Winds (4-12 knots)

Main

Slightly tighten the vang and outhaul. Move traveler toward centerline position and move the boom in as the wind increases.

Jib

Leach as in light airs. Jib sheet fairlead moves aft toward middle position, jib luff should still have wrinkles, barber in-haulers moved in-board as wind strength increases.

Centerboard

As speed increases, the centerboard moves aft, if necessary to counteract weather helm.

Crew Weight

Remains well forward. Hike out as necessary to keep boat flat.

Close Hauled Adjustments in Medium to Heavy Winds (13-25 knots)

Main

Increasing toward maximum tension on vang and outhaul. Ease traveler to leeward, increasing mainsheet tension, until necessary to luff the main to keep the boat flat. Tighten Cunningham progressively to keep the draft in normal position.

Jib

Leach trimmed as in light and medium winds. Jib sheet fair leads move aft to extreme position. Increase jib luff tension. Barber in-haulers to maximum inboard position.

Centerboard

May be raised as much as half-way to counteract weather helm.

Crew Weight

Well forward, crew hiked out as close to extreme position as necessary to hold the boat flat. Hiking straps will be especially useful in heavy winds.

Reaching Adjustments in Very Light to Medium Winds (0-12 knots — non-planing conditions)

Main

No tension on Cunningham or outhaul. Ease boom as far as possible without luffing. Don't let the spinnaker backwind the main.

Jib

Release barber in-haulers. Keep jib as full as possible, with slight wrinkles on the luff. Approaching broad reach, lead sheets outside shrouds.

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Spinnaker

Some sailors can keep some spinnakers drawing on a close reach, to their great advantage, but mostly spinnakers are tricky on a reach closer than a beam reach. The pole should be approximately perpendicular to, or a bit forward of, the direction of the apparent wind. Thus, the closer the reach, the closer the outer end of the pole comes to the jib stay, at which point it helps to raise the pole to enable you to point higher. The spinnaker tack and clew should always be as nearly as possible at the same height. The sheet, though not necessarily the guy, should be led through a block well aft. Constant adjustment is essential.

Weight

Keep the boat flat with crew weight well forward.

Centerboard

Raise it as speed increases and as the boat goes off the wind, to avoid weather helm.

Reaching Adjustments in Medium to Heavy Winds (13-25 knots)

The first thing to do is to read Len Fiock's article on reaching in the Spring 1980, Number 76, of *The Day Sailer*. He is the undisputed master.

The same adjustments apply as in light to medium winds, but as the wind strength increases, it becomes more difficult to set a spinnaker, especially on close or beam reaches. On broad reaches in medium to heavy winds, the boat will plane. When planing is possible, crew weight should move well aft to let the boat ride on the flat of the bottom. The boat must be flat. The centerboard can be nearly all the way up.

Running Adjustments in Light to Medium Winds (0-12 knots)

Same adjustments to main, jib and spinnaker as in reaching. Keep the boat flat and on her lines. Wing the jib and use a whisker pole if the spinnaker is not set. Constant trimming of all sails is essential. If the boat has a windward helm, shift weight to heel slightly to windward. Avoid unnecessary motion in the boat. The centerboard should be up, crew weight forward, and the boat flat.

Spinnaker

Keep the spinnaker and main from interfering with each other. If there is time, drop the jib. The spinnaker pole should be approximately level and perpendicular to the direction of the wind. The clew and tack should be at the same height. The sheet should be led aft. Keep a six-inch curl in the leading edge, constantly easing and trimming. You get the most power when the spinnaker is on the verge of collapsing — but don't let it.

Running Adjustments in Medium to Heavy Winds (13-25 knots)

Same as in light to medium winds, except that the possibility of planing is much greater, as on a broad reach. Keep crew weight well aft and the boat flat. The vang should be tight, but may be slackened if the boat is overpowered. In heavy winds, stability increases when the spinnaker is set, because it balances the drive of the main.