

Sailing the Thistle: Lose the Cleat!

By Doug Stumberger

A recent trend in the Thistle class is to race without cleating the mainsheet. Some Thistle sailors have removed the mainsheet cleat altogether, while others have installed a “lunch cleat” to have a free hand between races. Racing without a mainsheet cleat is not new: many one- and two-person dinghies, for example the Laser and the Olympic 470, are rigged and raced without a mainsheet cleat. Granted, most of these boats have smaller mainsails than the Thistle (see table), but the 49er is one example of a boat that has a substantially larger mainsail than the Thistle and is raced without cleating. Even some small keelboats, for example the Yngling, are raced without a cleat.

Why lose the cleat? The answer is better boat speed created by quicker, more fluid response to changes in the wind and waves. The wind changes speed or direction (or both) every few seconds, and every change requires a fluid adjustment in course, sail trim, or weight distribution (or all three) in order to maximize boat speed. Similarly, quick changes in mainsail trim are needed to switch between power or point as the you sail through more or less choppy water or waves. Sailing without a mainsail cleat, both upwind and downwind, lets you respond more quickly and fluidly to changes in wind and sea state, making your Thistle faster through the water.

Your first reaction to the idea of racing all day without a mainsheet cleat might be, “My arms will fall off!”, but sailing without the cleat is easier than you might imagine. With a few minor rigging changes and a shift to vang-sheeting upwind, you’ll find that sailing without the mainsail cleat is not very hard physically and could noticeably improve your speed around the course.

Responsiveness

An important factor of overall boat speed is the ability to “change gears” in response to changes in the wind and waves. Playing the mainsail in and out is one of the primary ways to change gears on any dinghy, but is especially useful on the Thistle given the large size of the sail. Consider that even with three adults on the rail, the Thistle becomes overpowered at around twelve knots of true wind, and several of the common mainsail designs used in the class are very “mainsheet sensitive” for pointing and footing. In the course of a typical race, you ease the mainsail dozens of times: when a gust hits;

when you sail through a set of waves; when you tack or duck a boat; and when you round the weather mark, to name a few common situations. Having to uncleat your mainsheet slows down your response time. Lose

| Boat | Upwind Sail Area (sq ft) | Mainsail (sq ft) | Weight (lbs) | SA/DISP (Mainsail only) |
|---------|--------------------------|------------------|--------------|-------------------------|
| 49er | 228 | 161 | 275 | 60.9 |
| Thistle | 191 | 136 | 515 | 33.8 |
| Finn | 110 | 110 | 319 | 37.7 |
| 470 | 137 | 98 | 264 | 38.1 |
| Laser | 76 | 76 | 140 | 45.1 |

Yes, the Thistle’s mainsail is large—almost twice the size of the Laser’s—but it is smaller than the 49er’s main, which is not cleated during racing. The Thistle main is a handful, but minor rigging changes and a switch to vang-sheeting upwind make it practical to sail the boat without sheeting the main.

the cleat, and you respond more quickly. Respond more quickly, and you move your boat through the water faster.

Ease, Hike, Trim

Let’s look at upwind puff response more closely. When a puff hits, your first priority is to keep the boat flat. If you let the boat heel up in a puff you are encouraging it to slide sideways through the water instead of tracking forward. In addition, as soon as a puff hits, the apparent wind goes aft, so the sails are now over-trimmed. We’ve all learned what to do in a puff: ease, hike, trim. For the Thistle driver, that means ease the main as the puff hits to keep the boat flat and realign the sail to the apparent wind as you hike hard and then re-trim the main to power the boat back up as the puff passes. The more immediate and fluid your response is to a puff, the more you can translate the puff’s energy into speed in the right direction—toward the next mark.

Having to first uncleat your main when a puff hits slows down the entire “ease–hike–trim” response. Unfortunately, the standard cam cleat used on most Thistles becomes harder to uncleat as more load is placed on the line, so the puff actually makes it harder for you to uncleat the line just when you need to most. To make matters worse, you have to raise your arm to flick the mainsheet out of the cleat, which tends to cause your body to lean into the boat and therefore

increases your heel to leeward—exactly the opposite of what you want to do at that moment. Without needing to lean forward to uncleat the mainsheet, you can simply hike back in your straps as the puff hits while letting a few inches of mainsheet slide through your fingers in one fluid motion. It might seem like a small optimization, but every bit of additional boatspeed that you can gain increases your ability to control your race instead of being controlled by the other boats on the course.

Safer Ducks and Smoother Turns

There are safety advantages to not cleating your main upwind as well. Ever had to crash tack or duck a starboard tack boat in twenty knots of wind? If you have to tack a Thistle in a good breeze and can't get the main uncleated, you are more likely than not to go for a swim. Also, a Thistle simply will not turn down in a strong wind if the mainsail is cleated in hard, so not having to uncleat your main could make all the difference when another boat suddenly looms large in your mainsail window.

Another place where sailing without the mainsail cleat can pay off is at the weather mark. One of the lessons taught to me by

top-flight Thistle sailor Joe Burcar is how to turn the boat around the windward mark by using your crew weight instead of a hard pull on the hand-brake that we call the tiller. With the forward crew often standing in the well as they set the pole and the middle crew thinking about getting their hands on the spinnaker sheet, it is especially important that the driver be able to keep the boat flat during the turn. Not having to reach in to uncleat the main will keep your weight outboard as you start the turn and make easing the sail more fluid and efficient.

The Downwind Angle

I have crewed for several Thistle drivers who simply let the boom out to the shroud at the start of a run, drop the mainsheet to the cockpit floor, and don't trim their mainsail until they are rounding the leeward

mark. This might work okay when there's enough breeze to power the boat dead downwind, but there is boat speed to be gained by adjusting the mainsail in response to wind changes downwind as well as upwind. Keeping the mainsheet in your hand and uncleated gives you immediate feedback on pressure—feedback that can help you know when to head up for speed in a lull and when to drive down towards the mark in a puff. For even more awareness of what your mainsail is doing on the run, try playing the mainsheet directly from the boom and in front of the mainsheet block on the centerboard cap.

Rigging Without the Cleat

The goal in rigging your boat to sail without a mainsheet cleat is to make it easy to trim the sail in and easy to keep it trimmed in. To start with, you

need a good ratchet block on the centerboard trunk. A ratchet block of fifty or sixty millimeters in diameter is certainly adequate. Many Laser sailors have switched to the outstanding Ronstan RF62100 ratchet block (formerly marketed by Fredericksen), a sixty millimeter block that would work well on a Thistle, but there are many good options on the market. No need for an auto-ratchet on the centerboard trunk, a manual ratchet will work just fine.

Of course, you will also need a way to swivel the block from tack to tack, and there are several good options to choose from. For example, the arm height of the Ronstan RF7

swivel base can be adjusted so that you can play the mainsheet without cleating the line. The advantage of this system is that the lunch cleat is built in—you can easily cleat the mainsheet between races but the cleat doesn't come into play during racing. With the swivel arm angled down this way, however, the mainsheet chafes against the top of the cleat's fairlead (typically an RF5015) and will eventually wear right through it. The fairlead is inexpensive and can be replaced in minutes, and switching to a heavy-duty saddle such as the RF5213 would also solve this problem. Another option is the Ronstan Universal Joint Swivel Base, RF1455, a sturdy and simple ball-and-socket cleat base. If you have opted for a solution such as the RF1455, you can mount your lunch cleat on the endcap of the centerboard trunk (see photo). This cleat will likely never be heavily loaded, so you can use the



The mainsheet swivel on Thistle 3669 is sturdy and functional, and the medium cam cleat mounted on the aft face of the centerboard trunk gives the driver a free hand for between races. Use a manual ratchet block on the trunk and an automatic ratchet block on the boom.

smaller RF5000 if your mainsheet is eight millimeters or less in diameter, otherwise an RF5010 will do the job.

To further help reduce the load on your arms, mount a ratchet block on the boom just above the centerboard trunk. This second ratchet block increases your holding power, making it easier to hold onto the line once the sail is trimmed in. An automatic ratchet block, such as the Ronstan 40 millimeter Smart Ratchet (RF42100), is a good choice for this application. The ratchet mechanism of the 42100 will engage automatically as the breeze picks up but turn off when the line is lightly loaded, making it easier to ease the sail in light air and during windward mark roundings.

If you find sheeting the main without a cleat hard on your hands, you can increase the diameter of line that you use, but make sure to use a line that doesn't absorb water. Eight millimeter Maffioli Swiftcord or nine millimeter Rooster Polilite are good choices if you want a thicker line for this system, but seven- or even six-millimeter line adds less weight and may tangle less frequently. If you're still having difficulty holding onto the line once it is sheeted in, try wearing a pair of AtlasFit 300 gloves. These gloves, another borrow from the Laser class, have an astonishing "grippiness" to them. They are not as sturdy as traditional sailing gloves, but can be purchased for five dollars or less at your local hardware or garden supply store and one pair lasts most of a season

Vang Sheeting

An important technique for sailing without a mainsheet is vang-sheeting, using the vang to "depower" the sail plan as the wind builds instead of simply dropping the traveler or easing the main. (Some Thistle sailors who regularly use vang sheeting have removed their traveler car altogether and bolted the mainsheet block in a fixed position in the center of the traveler track.) Tightening the vang has several effects on the sails. As tension on the vang is increased, it bends the lower portion of the mast forward, flattening the lower mainsail by stretching the luff cloth, which reduces the camber in the sail and moves the position of maximum draft aft. Tightening the vang also opens the top of the mainsail leech, increasing twist, but considerably less so than if the mainsail were eased with no or minimal vang pulled on.

More important for this discussion, when the vang is pulled on hard, the boom will only rise a few inches as the mainsheet is eased. In other words, when vang sheeting the mainsheet is being used more like a traveler control, restricting the movement of the boom (mostly) to the horizontal plane and not allowing (much) vertical play. Vang sheeting is especially

effective when the wind is above fifteen knots, but even in twelve knots you can play the vang to help with gust response—this can be especially fast in flat water conditions when you are both depowering and flattening the main at the same time.

Here are some important things to keep in mind if you switch to vang sheeting:

- You have to really tighten the vang as the wind builds. In twenty knots the boom will have a pronounced bend in it, and some older booms may not be able to take the strain without breaking at the vang attachment.
- Ease the vang before you turn downwind at the windward mark. Failure to do so may result in a broken boom. But don't ease the vang completely off at the mark--it helps to mark your vang line to a neutral downwind setting and then ease to that setting before you round the mark.
- Ease the vang a few inches before you tack to unload the main. This will give you and your middle crew a little more headroom to cross the boat. Since you are not cleating the main, it is simple to ease out an inch or two of mainsheet to depower as the vang comes off.
- If you feel like you have your hands full with both driving the tiller and playing the mainsheet, rig your controls so that your middle crew can play the vang.
- Make sure you ease the vang when you sail into a lull—having the vang too tight in light air is slow. Remember, the name of game is responsiveness to changing conditions.

Of course, you'll want to keep the vang control line in someone's hand on the those big-air reaches and planing downwind runs to keep the end of the boom from digging into the water and the keep boat on its feet if you start to roll.

Summary

Sailing your Thistle without a mainsheet cleat isn't for everyone, but it can pay real dividends on the race course. The combination of vang sheeting and double ratchet blocks makes the loads reasonable even above twenty knots, and for not much cost you'll likely achieve better gust response and gain a better feel for the wind. That, a great start, and hitting a few good shifts and you'll be winning races in no time.

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