



## Cal 20 Sailing Guide

### Boat Preparation

The goal here is to have a boat that is fast, easy to sail and will not fail. Make sure the keel, rudder and bottom are smooth and fair. The keel should be faired to the maximum class thickness of 1 ½ inches. This will ensure good underwater flow. Set up the deck layout so it is comfortable, functional and as simple as possible. This will eliminate broken or poorly placed hardware that can hinder the crew. This is very important so the crew can concentrate on the race and not the boat. Make sure your Cal 20 is at the minimum class weight of 2040 lbs. and the rudder is the 25 lbs. minimum.

Also, make sure the mast and rigging are in good working order and are as light, clean and stream-lined as possible. This will prevent failure and increase your speed. Finally, make sure your sails are the current designs and not so worn that their designed shape is no longer functional.

#### **Jib Leads & Barber Haulers**

Make sure your jib leads and barber haulers are easily adjustable

#### **Whisker Pole**

Check that your whisker pole is the class maximum length of 8 feet 6 inches

#### **Boom Vang**

Make sure your boom vang has at least an 8:1 purchase. Attach the boom vang fitting on the boom 42 inches aft of the back edge of the mast.

### Upwind Mainsail Trim

#### **Mainsheet & Boom Vang**

The mainsheet and boom vang are the primary sail controls on the Cal 20 since the boat does not have a traveler. In most conditions, trim the mainsail so the top telltale is slightly stalled. If you feel slow, need acceleration or the wind is very light, ease the sheet to keep the telltale flying. In light air, do not use any boom vang tension. As the wind increases, tighten the vang to control the leech. When it is windy enough to heel the boat 15 degrees or more, use enough boom vang tension and ease the mainsheet to keep the boat flatter than 15 degrees of heel. The chart below is a good reference.

0-6 Knots: Trim so the boom is 3 inches inboard from the transom corner.  
7-14 Knots: Trim so the boom is 12 inches inboard from the transom corner.  
15+ Knots: Trim so the boom is 16 inches inboard from the transom corner.

#### **Cunningham & Outhaul**

The other two controls are the cunningham and outhaul. The cunningham controls the luff tension which controls the draft position in the sail. Set the cunningham so the draft position is approximately 50% aft of the luff. In light air, there will be horizontal luff wrinkles in the sail that help achieve the proper draft position. As the wind increases, slowly tension the cunningham to remove the wrinkles, keeping the draft at 50%.

The outhaul controls the depth in the lower third of the mainsail. In light air and choppy seas, ease the outhaul 1-2 inches from the maximum tension setting. In medium air, ease the outhaul ½ inch from maximum. In heavy air, set it at max tension.

## Upwind Jib Trim

The four primary controls for jib trim are headstay sag, halyard tension, sheet tension, and lead position.

### Headstay Sag

The headstay sag is controlled by the backstay. The tighter the backstay is, the tighter the headstay. The optimum amount of headstay sag for the Ullman jib is 3-4 inches. This is measured from a straight line between the bow stem fitting and the forestay hound on the mast. Try to maintain this amount of headstay sag in all wind conditions.

### Jib Halyard

The jib halyard functions like the mainsail cunningham to control the draft position in the jib. The draft should be positioned at 35% to 40% aft of the luff. The proper tension is evident by slight luff wrinkles at each jib snap. Be careful not to over-tighten the jib halyard.

### Jib Sheet

The jib sheet is critical on the Cal 20. The sheet needs constant attention to keep the boat sailing fast. In light air or whenever you feel slow, ease the sheet to accelerate. This will get the boat moving again. Once you are up to speed, you can trim in to improve pointing, but be ready to ease again if the boat slows. The sheet should have a 2:1 purchase to make trimming easier and to eliminate using a winch handle. We recommend using ¼ inch diameter sheets.

### Jib Lead & Barber Hauler

The jib lead and the barber hauler are very important controls on the Cal 20. Set the fore and aft leads so the luff telltales break evenly from top to bottom of the sail. Set the athwart-ship barber hauler so the lead is 2-5 inches outboard from the edge of the companionway hatch. If the wind increases to 18+ knots, move the lead so it is 4-9 inches outboard. The windier or rougher the conditions are, the further outboard the leads should be.

## Downwind Mainsail Trim

The boom vang is the Cal 20's accelerator. Play the vang constantly to keep the top batten parallel with the boom. Because of the aft lower shroud, the boom cannot be eased as far as it should. It is sometimes faster to ease the vang to allow the leech to twist more at the top. This gives the mainsail more projected area.

In light to medium air, ease the outhaul until the foot shelf opens – but not so much as to lose projected area. This is about 1-2 inches from the upwind outhaul setting. Always ease the cunningham or main halyard so there are luff wrinkles.

Be careful when jibing the boom with such a loose backstay. Tighten the backstay before a jibe so the boom does not catch on it. And remember to ease the backstay again after the jibe.

## **Downwind Jib Trim**

Because the whisker pole is relatively short, it should be used only when the wind is well aft of the beam – at least 150 degrees of apparent wind angle. When sailing without the whisker pole, ease the backstay so there is 6 inches of headstay sag. Move the jib leads forward and outboard to keep the jib luff breaking evenly. If the wind is 130 degrees apparent, try sailing with the whisker pole on the leeward side, same side as the mainsail.

When sailing with the whisker pole to windward, ease the backstay so the mast tip is 18-24 inches forward of its upwind position. This causes the headstay to become very loose. The jib halyard should be eased so the jib luff matches the headstay sag. This will project the jib further away from the boat and the mainsail.

## **Crew Weight Placement**

The competitive crew weight for the Cal 20 is between 340 and 500 lbs. It does seem that it is faster to be on the heavier side of the weight range. Move the crew weight as far forward as the cockpit will allow in all conditions. In light air, the crew weight should be as low in the boat as possible to reduce the pitching of the boat. The skipper should communicate to the crew about crew placement to balance the helm and give it a “neutral” feel.

## **Summary**

The key to this tuning guide and Cal 20 sailing is not just memorizing these settings and recommendations, but understanding how they work and how they influence the boat. The goal is to be able to feel that something is wrong and have the knowledge to quickly fix the problem to keep the boat moving fast. For example, the mast rake measurement is a general number which can vary from boat to boat. The goal is to be able to notice that something is wrong and have the knowledge to quickly fix the problem to keep the boat moving fast. We design Ullman sails so that they are easy to trim and very forgiving, allowing you to concentrate on race tactics and strategy rather than on sail trim.