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MC Tuning Guide.

Sail Designs:

Mad Max Cut: The largest, fullest, most powerful design we offer. The sail is fuller in depth up top and down low. This sail is designed for sailors or teams over 175lbs who need extra power. Lighter sailors like this sail for light air conditions and then switch to a flatter sail when the wind builds.

Mad AP Cut: This successful design has been around for over 16 years. This sail is designed for sailors or teams under 175lbs. It is flatter up top and down low than the Mad Max design yet has a powerful mid section. Versatile sail for all conditions. Single handed sailors should use this design to depower for heavy air conditions.

Mad LT Cut: This is the ultimate heavy air design sail. Dramatically reduced sail area will help those singlehanded sailors that really struggle in heavy air conditions.

Boat Setup

Mast Rake – Put a tape measure on the main halyard and run it up to the locked position. Measure the tape from the locked position to the transom/deck intersection. For most people the measuring range is going to be 28' 3" to 28' 4". Moving the rake forward helps get rid of excess weather helm and improves pointing. The helm should have slight weather helm of 3 degrees or neutral helm when sitting next to the traveler. The tiller should have a very light feel in your hand and the boat should track slightly to windward when you let it go. All boats and sailors are different. Play with the rake. If you are over 185lbs, move rake forward to 28' 3.75"- 4". If less than 185lbs move rake closer to 28' 3" to 28' 3.5". Nothing is stopping you from playing with the rake. I have seen people set the rake as much as 28' 5" or as low as 28' 2". You need to go by feel. The boat, sail, skipper weight are going to tell you what it likes. However, when moving the mast rake forward the boat might start to feel crabby. It won't track nicely and effortlessly thru the water. If it feels like this, move the rake back until the crabiness feeling is gone.

Shroud Tension – Once you have the mast rake set to where you like it, adjust the side stays so they are hand tight. The rig should not have any slop in it. Snug it up. Do not use tools to tighten -just your hand.

Spreaders – Most boats have an adjustment for this: either a two position hole setup or fully adjustable turnbuckles. Factory standards changed throughout the years. The amount of sweep affects how your mast bends fore and aft. Less sweep gives a straighter mast, more sweep means more mast bend. Generally, less sweep powers up the sails at the expense of pointing and vice versa. Adjustable turnbuckles allow you to fine tune the sail shape to the mast bend. Most spreaders have positions that allow the sweep to be 4" to 5.25". The target range should be 4"- 4.5" for most sails. Fuller sails will point better if the sweep is towards the 4.5 to 5.25 range but you start to give up some power in lighter air.

Racing

General – Speed is king! No matter what you do you want to be going fast at all times. Always sail for the darkest water and stay in the darkest water. *Your mainsheet is your main tool.* Never cleat your mainsheet! You must always be working the sail shape. You can't point without speed. Pinching is slow! Best to foot for speed and get to the next shift or stronger air first, before your competition does. When in doubt let the mainsheet out until your speed picks up again. The top leech tail which is attached at the end of the batten should be flowing 50% of the time. If not flowing at all and hanging down dead, the sail is stalled – look up to help verify that your mainsheet trim is correct. A couple of inches out of the mainsheet will get the flow to reattach to the sail. Constantly be playing the mainsheet by trimming in or out a couple of inches. The sail will tell you if it is stalled or moving fast.

Always sit forward in the boat right next to the traveler in all conditions. Always maintain a constant angle of heel of 10-15 degrees. This translates into constant maximum speed.

It is critical that your boards can go to maximum depth in light and medium air. This means the apex of the board is max down. Usually the boards will be around in the 85-87 degree range. You don't want the boards too far aft or your pointing will suffer in light air. If the boards are too far forward (apex beyond 90 degrees) the boat will be very crabby and not track well at all. In most boats that means the top of the board horn is .25" above the board slot exit. Don't go any lower than this. Check this area carefully using a boat hoist or boat lift.

Light Air (0-9 mph)

General – Dark water rules over angle! Always sail for and stay in the dark water. You must always be trimming the sail in or out a few inches or more in this wind to keep the boat moving at all times. Keep the flow attached to the sail. Let the sail breathe! Keep your movements in the boat smooth and cat like. The Mad Sails were designed with extra depth to help you achieve maximum speed in light air. Keep the boat moving fast so you reach the next puff or wind line coming down the lake. Don't pinch. Let the sail breath.

Boards – The leeboard need to be at the maximum down position to achieve maximum lift. On mc's with the open cockpit style that means the board head/horn is about .25" above the board slot. Adjust the knots if you need to.

Heel – You need to heel the boat in these conditions to reduce the wetted surface. Your angle of heel can be slightly higher in these conditions: 15-20 degrees. Don't over heel as you will sideslip: water coming over the leeward side rail is an indication of over heeling. As the wind builds flatten the boat towards 10-12 degrees of heel by moving your body weight in and out. Sit near the traveler to keep the transom from dragging.

Mainsheet Trim- In these conditions you must work hard to keep the air flow attached to the sail. Constantly adjusting the sail. It is very easy to stall the sail in these conditions. Watch your leech tell tale and keep it flowing. At times you may have to let out the mainsheet as much as two feet to get flow. Many sailors trim too hard in these conditions and pinch too much. Ease, ease, ease the mainsheet a few inches until flow attaches. Especially when coming out of tacks. Sometimes the boom is over the corner of the boat when sailing to weather. As the wind builds you can start to slowly trim in the sail. Twisting the sail open helps with acceleration.

Outhaul – Many sailors don't play the outhaul. I like to play the outhaul because I think of it as another gear. The shelf along the foot can be adjusted to increase the depth of the lower portion of the sail. When released 1"-2" this will give you more power. The shelf will open and you will start to see wrinkles along the foot. Release the outhaul just enough to not see the vertical wrinkles. Handy for accelerating off the line or in boat chop conditions. When released, the leech tightens in the lower 1/3 of the sail. As the wind builds snug up the outhaul to open the leech. The shelf will come towards the boom and the foot of the sail will stand straight up.

Vang – No vang tension at all. Allow the boom to rise above 90 degrees which helps create a fuller sail when trimming.

Cunningham – No Cunningham at all. Do not remove the wrinkles along the mast. These are often called speed wrinkles in these conditions. Don't worry about them!

Traveler - The traveler should be on the centerline.

Downwind Sailing- After rounding the offset, set the leeward board to ¼ down. Release the outhaul 1"-2" to open the shelf of the foot. You must be in dark water at all times. Look for the wind coming down the lake and be in the dark water and stay in it as long as you can. Sometimes you have to be aggressive and reach up to it and then head back down. Sailing a very slight reach is faster than dead downwind. Rock the boat up to reduce wetted surface. The boom will be close to touching the water. I like to trim from the boom block. Try this, you will get a better feel of the sail. Keep pressure on the sail it all times by trimming. Secret – many people don't trim going downwind! You can pass lots of boats by doing so. Work the boat.

Medium Air (10-14 mph)

General – This is the wind range when you need to start using controls when you are overpowered. For some this is sooner than others. Most people call it changing gears: going from full power to depower and back to full power. Keep in mind you must work the controls on and off if the wind is spotty; power up in lulls. Always be working the mainsheet to keep the sail going fast and maintain the angle of heel. Ease, Hike, Trim. The upper portion of the course is going to be lighter air conditions for most people. Power up in that half. Some sailors will want a smaller sail design at the upper part of this wind range. Its important to maintain angle of heel at all times. Use a fuller sail until you reach the point where you are struggling even when the controls are on. Consider using crew to extend the range of using a fuller sail design or to maintain more control over the boat.

Boards – The leeboard needs to be at the maximum down position to achieve maximum lift. As you approach 14mph you can raise the board ½" to 1" to reduce helm and control the boat.

Heel – Try to maintain a constant angle of heel of 10-12 degrees. As the wind builds flatten the boat more and you will go faster.

Mainsheet Trim- Always work the mainsheet in combination with your sail controls. Your vang should be on enough to keep the boom in line with the deck. A little off when air is light, more vang when it builds. On off, on off. When windier, more so on all the time. You can trim harder in these conditions and should do so. The leech tails will be flowing most of the time. Trim harder until they begin to stall then back off an inch or two for flow to reattach. Ease, Hike, Trim in the puffs! Keep the boat down, not over heeled. Ease the mainsheet first before heading higher when hit with puffs.

Outhaul – Pull the outhaul on snug in these conditions so that the lower part of the sail becomes flatter. Do so early as you approach the gate. You'll be working the vang and mainsheet rather than outhaul in these wind conditions.

Vang – You'll be working the vang here a lot. Tension the vang just enough to keep the boom in line with the deck or about 90 degrees to the mast. As you become overpowered tension the vang 25% to 50%. Ease the vang in the lulls, tighten in the puffs or steady air. You should not be at maximum vang unless you are really overpowered. You want to think of the sail as a door that swings back and forth when playing the mainsheet. Easing the sail to release excess power you don't need. Try to stay fully powered without using the controls for as long as you can. Having a crew helps in these conditions!

Cunningham – The cunningham is a powerful sail control. It moves the draft of the sail forward, flattens the entry of the sail, and opens the top of the leech to spill air. Keep the cunningham off unless you are overpowered with the vang on and need to depower even more. The start to use only enough cunningham to pull the slack out of the luff. Slightly more Cunningham as your reach the higher end. You will have to pull hard on the cunningham only in very heavy winds or with an old sail (to move the draft forward to 40%). Make sure its off downwind; release just before windward mark.

Traveler - The traveler should be on the centerline. If you have the vang on and some cunningham on and are still overpowered, then begin to drop the traveler an inch at a time until the boat settles down. Remember to track back up in lighter air.

Downwind Sailing – Ease the vang before the windward mark. Pull the board to ½ way and reach down the offset. Set the board depth to ¼ as you go around offset. Release outhaul 1" so the shelf falls in. As the wind builds you want to sit on the high side and get the sail into the air by reverse healing and all the way forward against the boom. This is fast. You control the sail by using your vang when sailing straight downwind. Less vang in the lulls, more vang in the puffs. The vang settles the boat down when the puffs are big. Reverse healing produces less drag because the rudder is now straight up and down. The boat will feel and sail better. Always work the boat down low in the puffs. Your board should be at ¼" depth. Sail in the dark water!

Heavy Air (15-23 mph)

General – In these conditions you must be in control of your boat and not let the boat control you. If you can get a crew, do so. It will make sailing in these conditions more enjoyable and you'll be faster. This is the time to consider using a smaller sail to help depower the boat. Your controls are going to be fully on most of the time and you are going to have to work the boat very hard to keep it on its lines. Waves are going to be an issue for most lakes. You must power thru them or be stopped dead. The other big issue is keeping the boat down instead of hobby horsing by over heeling as well as for & aft movement. Your weight must be forward at all times to keep the bow down. You must be in a comfortable hike position so you can see the puffs and ease the mainsheet and trim it back in. *Ease, Hike, Trim*. Say it to yourself over and over as you sail. Remember, there are usually two course conditions for most lakes depending on shape, size, hills, and wave structure: the lower, windier, wavier half and the higher more manageable half. Some lakes are so large you don't get a break at all.

Boards – Raise the board 1" to 2" to free up the helm and reduce hobby horsing over heeling.

Heel – Try to maintain a constant angle of heel of 10-15 degrees. Stuffing the boat into the wind is very slow. Hobby horsing is very slow.

Mainsheet Trim- You have to work the mainsheet very hard in these conditions. You must ease the sail to spill excess power and maintain the angle of heel. This twists the sail which is fast and keep the boat on its lines. Most people are fighting the boat because they trim too hard and try to pinch the boat like in medium air. Ease the trim, and maintain a "loose" trim. The sail will be out a 3" to 4" out or more from normal medium air trim. When the puffs hit ease as much as two to three feet from there. Begin easing just prior to them hitting you. Keep the bow down and boat driving. Keep the angle of heel constant. *Ease, Hike, Trim!*

Outhaul – Pull the outhaul on tight in these conditions to flatten the sail. Having it on downwind won't hurt your speed.

Vang – Tension the vang to the max to bend the mast and flatten the sail. One way to do so is to trim hard on mainsheet and then apply the vang hard. You'll need to duck lower when tacking so ease the vang a little when tacking. Also, when approaching the windward mark ease the vang to 25% otherwise its easier to capsize rounding the mark and more importantly you can damage your mast. When using a smaller sail design, you must be careful to not over vang the sail. Doing so removes draft and power that you need in waves.

Cunningham – Pull the cunningham on hard. This will open the leech and flatten the sail entry. Some sails like just a little less than max hard. Play with it. But in most cases this should be on all the time upwind. When using a smaller sail design, you must be careful to not pull all the draft out of the sail. Make sure its off downwind; release just before windward mark.

Traveler – Drop the traveler to begin with at least 3" and keep going until the boat settles down. I've seen some teams drop it all the way to cockpit edge. Anywhere between 3" to 14". All depends on your sailing style for breeze.

Downwind Sailing - Reverse heal the boat to maintain control. Use your vang to stabilize the boat. On hard in big shots. Don't allow the vang to be above 90 degrees. The top of the sail moves forward which increases chance of a death roll. Your board should be at ¼" depth.

When gybing ease the vang slightly. Grab the mainsheet with your hand to pull the boom over. Steer up just enough to get the pressure off the sail. As the boom swings over your head it is very important to steer straight downwind. If you don't your boat is sideways to the wind and when the boom hits other side all that force will roll you over instead of pushing you forward.

Steer thru or around the waves by watching the front portion of the boat between the bow and side stay. To keep the bow from digging in you must steer aggressively in these conditions. Watch the wave sets. Try steering around them either high or by going low. Some will trim in the main a foot or so to help slow the boat down and maintain control. You can go super fast by reversing heeling but also have a spectacular death roll! Your call but finishing the race is better.

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