

The Mumm 30 Cookbook

A Guide to Tuning and Trim



Ville de St. Raphael 1st Key West 2000

When introduced in 1994, the Mumm 30 represented a major development in terms of both concept and design. It remains one of the most exciting boats to sail on the water today, and for many, an all-time favorite. High powered but simple, the design was one of the first to combine the sophistication of modern hull forms and appendages, with the simplicity of a swept-back spreader, carbon, fractional rig featuring no running backstays, and no overlapping jibs. It is probably the most dinghy-like of the new genre of offshore one-designs

From the beginning, this combination created a sail design problem that demanded fresh thinking. Quantum designers have been involved since the launching of Hull #1. Their collective experience has gone into the refinement of countless design iterations. Hours of sailing and testing, and continuous improvements make the sails what they are today. They have proven successful since day one wherever the class has gathered in force, winning everywhere from Key West to Copa del Rey. This tuning and trim guide offers suggestions as to how to get the most out of our designs and your boat.

As with all tuning and trim guides, this one should not be taken as gospel. Like the two edges of a sword, there is danger on the one hand of oversimplifying, or on the other of getting too caught up in the numbers. It is impossible to sail strictly by the numbers, and one must recognize that trim is dynamic, requiring constant changes to get the most out of the boat on a moment to moment basis.

While the Mumm 30 is a relatively simple boat to set up, it does reward subtle changes. At the beginning of each section there are summary tables, providing basic setup and trim numbers; a Reader's Digest version if you will. For those who want more, a detailed discussion, including background theory on how each control works and interacts with each other follows. It is worth understanding the concepts behind tuning, and the various effects of different controls. This allows one to experiment and react to changes in conditions and the feel of the boat until the right combination is struck for a given moment. Remember that slightly different techniques work for different sailing styles. There is no one way to make a boat go fast.

Keep in touch. Please let us know what works for you on your boat, and be sure to call or email if you have any questions. The boats are a blast to sail. Above all, have fun!

David Flynn
Quantum Sail Design Group
2001

MUMM 30 Rig Tune Summary

√ **BASE SETTINGS**

Headstay (forward face of mast to center of pin at stem)	12.204m
Mast Base (forward face of mast to center of forward stem bolt)	3.49m
J Dimension	3.31m
V1 Tension (15-17 turns beyond hand tight)	33 on Rod Loos Gauge
D2 Tension	2-4 turns beyond hand tight
D1 Tension	4-5 turns beyond hand tight
Prebend	65mm

⇒ **ADJUSTMENTS FOR CONDITIONS**

True Wind	Headstay Length	V1's	D1's	D2's
Light (0-8 knots)	-9 turns / 12.223	-2 turns	-2 turns	base
Moderate (8-14 knots)	base / 12.204	base	base	base
M+ (14-20 knots)	+9 turns / 12.185	+2 turns	+1 turn	base
Heavy (20+ knots)	base / 12.204	+4 turns	+2 turns	base

Rig Tune From Ground Zero

There are three goals in setting up the Mumm 30 rig: 1) keep the mast in the center of the boat and straight side to side, 2) have the right amount of prebend and overall mastbend for the conditions, 3) have the correct headstay tension for the conditions.

The amount of mastbend and headstay tension will need to change with wind velocity. The most important principle to understand is that side stay tension controls headstay tension. The tighter the overall rig, (uppers and lowers), the greater the headstay tension. The second principle to remember is that prebend is desirable in light air, but needs to be gradually reduced as the breeze increases and more backstay is used. In windier conditions, by starting with less pre-bend, the mast will not overbend when the backstay is pulled on. This means better headstay tension and also keeps the mainsail from becoming too flat (inverting) when the backstay is pulled on hard. Conversely, in light air headstay sag means more power, so more pre-bend is fine. Additional pre-bend will also allow the mainsail to setup properly without pulling on backstay.

With this in mind, we recommend the following rig setup procedure.

- Set the mast step so that the forward face of the mast will be 3.49m from the center of the forward most stem bolt. This measurement is important because the mast step will not necessarily be in exactly the same place from boat to boat. If the step is not, re-drill the holes and move as necessary. On most boats this means that the mast step is set in the maximum aft position.



Check the mast butt position

- Set the forestay length to 12.204m as measured from the forward face of the mast at the headstay/mast intersection, (center of the bend in the T-fitting where it enters the mast), to the center of the pin at the stem. This is the median rake setting. The headstay will be shortened as much as 19mm as the breeze increases, and lengthened 19mm from this point in light air. It is useful to put a mark on the forestay at a fixed point (the base of the swage at the top of the turnbuckle is a good spot), so you can check headstay length without going up the mast. The headstay will be adjusted in 19mm increments. Approximately 9 full turns equals 19mm.

- Center the mast with the upper shrouds. Use the centerline jib halyard to either chainplate pin center as a guide. Take up on lowers and intermediates just enough to bring the lower mast sections in line with the top (hand tight).

- Insert the four mast blocks provided symmetrically on each side of the mast. The "J" dimension (forward face of mast to the center of headstay pin at stem) should be approximately 3.31m with the mast in this position. The partner blocks will probably fall out when sailing if not secured. Drilling holes in the mast collar and inserting screws is one way to keep them in place.



Check the J dimension

- Connect the backstay. The backstay purchase system should have the maximum possible "throw," or distance to travel. The primary backstay wire may need to be shortened 100-150mm (4-6"). The backstay should be hard to connect; each part of the purchase will have to be stretched to its maximum length.
- Tension uppers (V1's) and lowers (D1's), and intermediates (D2's) gradually and evenly (count the turns as you go), Start with the uppers, adding just enough tension on the diagonals to continue to keep the mast in column as the uppers are tightened. The D2's will not need much tension; 2-4 turns beyond hand tight should be enough. Better to start sailing with too little tension on the D2's, than too much. Sight up the mainsail luff track periodically to insure straitness. The uppers will need approximately 15 to 18 turns beyond hand tight. If using a Loos Tension gauge for rod rigging, the number will be 33.
- Tighten lowers approximately 4-5 full turns beyond hand tight, or until the prebend is reduced to 60-75mm This is your medium rig setting. In light air, the lowers will be eased 2 turns to allow for more prebend. In medium/heavy and heavy air the lowers will be tightened up to 2 full turns from medium settings. In combination with shortening the headstay, this will reduce the prebend to under 50mm. It is the prebend that counts; not how many turns or what number on a Loos gauge.

Composite masts may vary in stiffness, so it may take a slightly different amount of tension from boat to boat to get the right amount of prebend.

- Go sailing in 10 knots plus and check the athwartships tuning on each tack by sighting up the mainsail luff track. Adjust shrouds appropriately to get mast straight. Each shroud controls the mast where it is attached. Ease if the section pulls to weather, tighten if it sags to leeward. Once the mast is straight under load and the shrouds are tensioned evenly, rig tension can be adjusted for conditions by adding or subtracting an equal number of turns to each side.

Rig Tune For Conditions

Mainsail shape and conditions will dictate final rig tension. In simple terms, overall rig tension will increase with more breeze velocity. Tension needs to match the amount of backstay being used. If the mainsail flattens out too quickly for the amount of backstay you are using (characterized by overbend wrinkles running diagonally from clew to mid-mast), then you need tighter lowers and/or a shorter headstay to reduce bend and make the mainsail fuller. In heavy air you should be able to pull the backstay all the way on just before the overbend wrinkles appear.

If the mainsail is too full for the amount of backstay being used, as characterized by excessive backwinding, or a sail which is "knuckled" and excessively round in the forward sections, less lower tension and/or a longer headstay is necessary. In light air decrease the tension on the lowers and add headstay length to induce additional bend. Extra prebend and softer rig tension will also increase headstay sag and create power in the jib, making it easier for the helmsperson to feel the boat and keep it in the groove.

The D2's should not have to be adjusted. However, remember that the D2's act just like the lowers to control mastbend. If the sail is too full in the upper sections relative to the lower portions of the sail, they may be too tight and vice a versa.

It's tough to be certain that you have the right amount of diagonal tension without knowing how hard you are going to pull on the backstay. Check your settings while sailing. It's really pretty simple. Look at the shape of the mainsail relative to the amount of backstay you are using. If the mainsail is too full with the backstay on, ease the lowers, if the sail is too flat, tighten.

⇒	ADJUSTMENTS FOR CONDITIONS			
True Wind	Headstay Length	V1's	D1's	D2's
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Note that the headstay is shortened progressively as the wind velocity increases. This tightens the whole rig and reduces prebend. This will not only generate better headstay tension, but will also allow the use of more backstay to reduce headstay sag without over-bending the mast.

In winds over 20 knots, headstay length is increased back to base. This provides weather helm in a condition where the mainsail will often be floating (eased aggressively) to keep the boat on it's feet. To maintain headstay tension as it is lengthened, tension on the uppers and D'1s is increased accordingly.

Trim Summary

⇒ UPWIND TRIM GUIDELINES

Wind Strength	0-7	8-13	14-20	20+
Jib Selection	Code 1	Code 1 or 2	Code 2	Code 3
Jib Luff	hint of wrinkles	hint of wrinkles	smooth	smooth
Jib Lead	25mm forward	median	25-50mm aft	median to 50mm aft
Jib Sheet (inside bottom spreader tip)	180-380mm	230-430mm	380-280mm	380-100mm
Jib Inhaul (clew pulled inboard from track)	25-50mm	25-75mm	25mm-none	none
Mainsail Luff	hint of wrinkles	hint of wrinkles	smooth	smooth
Outhaul	eased 50-75mm	eased 50-25mm	tight	tight
Backstay	none	25-50%	50-100%	75-100%
Mainsheet (top batten position)	-5 degrees	parallel	-5 degrees	-5 to -10 degrees
Traveler (to centerline)	300-600mm above	300 above to 200 below	center to 750mm below	160mm up from maximum down

Jib Trim

WHICH ONE DOC?

The Mumm 30 is easily driven, and has plenty of horsepower for its weight. The sails are designed to be used as follows, but there is plenty of crossover so don't panic too much about having the right sail up:

- Code 1 (Light) jib 0-10 knots of true wind
- Code 2 (Medium/Heavy) jib 10-20 true,
- Code 3 (Small/Heavy) jib 20 and up.

Due to the boat's powered up nature, the Code 2 gets most of the use, and can be used down range in as little as 7 or 8 knots true; particularly if the water is smooth. The Code 1 is designed as a powerful sail which will be fine in smooth water up to 8 or 9 knots, more in choppy conditions. In big chop or when there are big fluctuations in velocity, you might carry it to 12 true. Both the Code 1 and Code 2 are the same size, and have plenty of structural strength to go up in range. You can hang on with the Code 2 in up to 25 knots true, though the smaller jib will be faster somewhere around 22 knots true. The Code 3 can also be used downrange in smoother water. In more than 20 knots it also makes the boat easier to control.

If you find you have speed with your competitors but can't seem to point quite as well it may be one sign of being underpowered. This is particularly true when trying to decide between the #2 and #3

LUFF TENSION (Halyard)

The golden rule: use just enough halyard to smooth the horizontal wrinkles out of the luff of the sail. More tension is needed with more breeze. Better to have too little luff tension in light to moderate conditions than too much. Keep the halyard on the winch for ease of adjustment. In smooth water and light to moderate conditions, leave a few wrinkles for a finer entry and better pointing. In choppy water luff tension rounds out the entry making the steering groove wider. It also flattens out the exit of the sail as it pulls the shape forward, which de-powers the sail. Use a little extra luff tension at the upper end of any headsail's range. As the sail ages, slightly more halyard tension will be required.

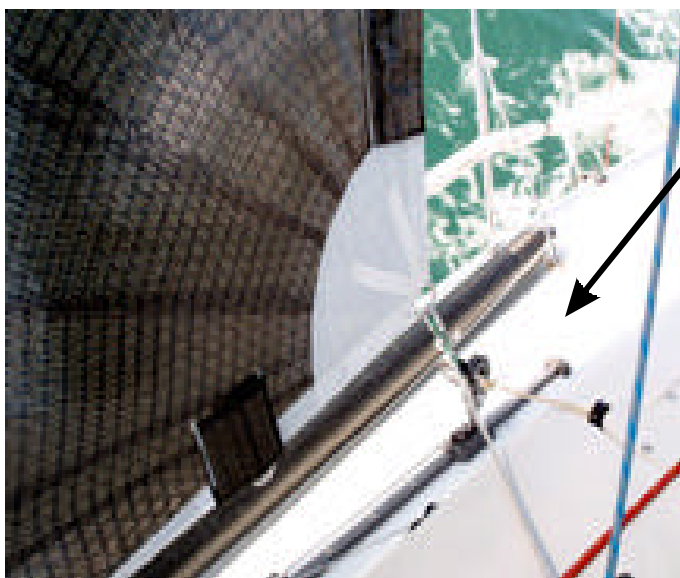


JIB LEAD POSITION (FORE AND AFT)

As a starting point the lead should be set so that the sheet applies roughly equal tension to leech and foot. For the Code 2 and Code 1, this will put the back of the lead car approximately 150mm from the back end of the track. For the Code 3 the forward end of the car will be within 50mm of the forward end of the track. These settings are affected by rake so be careful of just using a numbered position.

Check the sail's shaping and how it is luffing. The standard method for determining median lead position is to head up slowly and watch the sail luff. It should luff at about the same time from top to bottom. In the real world the top will break just slightly ahead of the bottom. If the top breaks too early, or if the bottom of the sail is strapped tight and flat, then the lead needs to be moved forward. If the foot of the sail is very round and the top is closed and tight, the lead should be moved aft.

From the median lead position, the lead should be moved aft as the sail is sheeted harder and operates closer to the top of its range. At the bottom end of a jib's range, or as the sheet is eased, the lead will need to move forward slightly. Maximum lead position forward will be approximately 35mm, and maximum aft will be as much as 100mm from median at the top of the sail's range. A rule of thumb is that whenever you need to drop the mainsail traveler to keep the boat on its feet, move the jib lead aft. Another indication of the lead being too far forward for the conditions is if the main has been flattened and there is still excessive backwinding. More twist (lead aft) is required when overpowered, less when power is needed.



code 2 jib with lead at median (back end of car 150mm forward of aft end of track)

JIB SHEET TENSION

As reference, place marks on both spreaders at 230mm, 280mm, 330mm, and 380mm inboard from the tip. As a starting point, the leech will be pointed inside the lower spreader as follows:

CODE 1 Leech 230-380mm inside spreader tip.

CODE 2 Leech 280-380mm inside spreader tip.

CODE 3 Leech 330-100mm inside spreader tip

At the top spreader the jib leech should always be a little more open. Depending on the fore and aft lead position, it should be between 25-75mm further outboard.

The jib sheet is by far the most important headsail control and must be played constantly, easing to accelerate, trimming to point. In light to moderate conditions sheet tension will change with every change in breeze velocity, and must be adjusted constantly.

From 9-10 knots on up, less adjustment will be required. At all times the basic idea is to trim as hard as possible without slowing the boat down. Having said this, two notes must be made. First, the range of adjustment is very small. Since the clew of the jib is so close to the block, small increments of sheet will change the leech's position relative to the spreader tip dramatically. Sheeting harder has less effect on boatspeed than it does in many other boats. The jibs can be trimmed quite hard in a wide range of conditions.

While you can think of sheet tension as it relates to velocity, it is probably better to think of it in terms of how it relates to speed. If you are fast, you can sheet harder, if you are slow try easing slightly. As noted, the Mumm 30 seems to be less sensitive to over-trimming the jib than most. The bottom of the jib can be trimmed quite hard most of the time without adversely affecting boatspeed, as long as the top is kept slightly more open. As a radical example of how hard you can trim, we have found ourselves as much as 430mm inside the spreader tip in smooth water (perfect pointing conditions), and 8 knots of breeze with the Code 1.

In breezy conditions (18 knots plus) the standard approach to depowering the jib is to ease the lead outboard and aft while keeping the sheet tight. Try leaving the lead close to the median position and simply ease the sheet to depower. Easing is also a way of hanging on when completely overpowered. If the mainsail is luffing completely to keep the boat upright, try easing the jib so that both sails are doing some luffing.



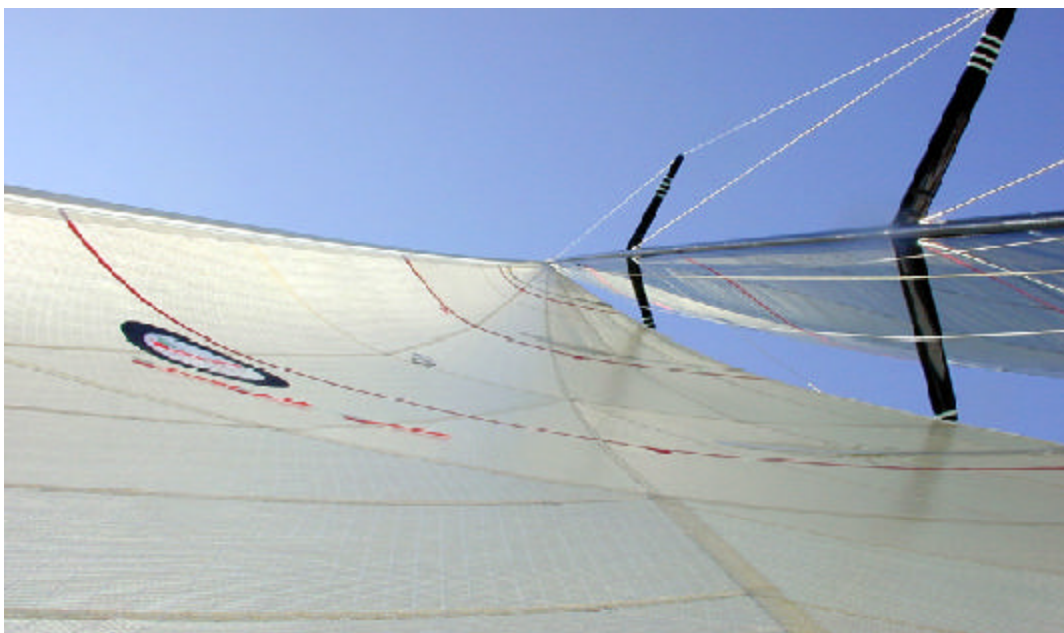
Median Twist Profile: CODE 2 jib max trim bottom, 375mm inside lower spreader, with top twisted slightly 325mm inside top spreader. 15 knots true wind, lead aft 25mm from median.



Tight Twist Profile: CODE 2 jib 12 knots true wind trim 375mm (15") at top and bottom spreader, lead at median.



CODE 1 in 7
knots true wind.



CODE 2 in 13
knots true wind.



CODE 3 in 20
knots true wind.

THE JIB INHAUL

Exactly how much inhaul to use in a given condition is still an area of debate. It is a control whose successful usage varies with sailing style. Latest generation of Code 1 and 2 jibs are designed to use some inhaul.

Mark the inhaul control line for reference every 100mm (4"). Every 100mm on the control line will move the clew inboard 25mm (1"). From the maximum inboard position to maximum outboard (clew over the fore and aft track) it is possible to move the clew of the sail through a range of approximately 175mm (7"). In practice, it will rarely be pulled more than 50-75mm (2-3") inboard.

Pulling the clew of the sail in adds power and depth, and sheeting closer to the centerline allows for better pointing. Inhauling also tends to slow the boat, and will tend to overpower and leave the boat feeling "bound up" if the clew is pulled too far inboard. Get speed first, then shift into pointing mode by inhauling the jib. Inhauling can be an excellent tactical tool when trying to hold a lane. In general terms, at the bottom end of any jib's range you will use the most inhaul. As the breeze builds, the clew should be eased outboard. As a guideline these are maximum values:

- Code 1 Jib Inhaul clew 50-100mm
- Code 2 Jib Inhaul clew 50-100mm
- Code 3 Jib Inhaul clew a maximum of 25mm

Be careful. Better to have the clew too far outboard than too far inboard. There is one other effect you should be aware of. Due to the geometry of the inhaul block relative to the clew position, inhauling also pulls the clew forward. This makes the sail rounder and fuller in the bottom sections. It might be advisable to drop the fore and aft lead back slightly as you inhaul. Sheet tension has a dramatic effect on how much inhaul can be used. A tightly sheeted sail which is also inhauled hard can easily bind the boat up.



Code 2 Jib in 9 knots true wind, with clew pulled 50-75mm inboard.

Mainsail Trim

CUNNINGHAM (Mainsail Luff Tension)

The golden rule still applies; just enough tension (cunningham) to smooth out any horizontal wrinkles. Leave a few in the lower sections of the luff in light to moderate conditions allowing the draft to slide aft and the leech to round up for maximum power. Add luff tension with more mast bend (backstay), ease when the mast is straightened.

OUTHAUL

The outhaul controls the depth in the lower third of the mainsail. Easing it adds depth and power, pulling on it flattens and de-powers. In general terms, try to sail with the least amount of power (or the flattest mainsail) you can get away with and still have enough feel in the helm. If the helmsperson needs helm and power, ease. Easing the outhaul aggressively will also round up the lower leech and help pointing in smooth water, light to moderate conditions.

The outhaul is typically only eased all the way off (90mm) when sailing off the wind. In light to moderate conditions upwind, it can be eased until the sail is 50-75mm from the white band, and the foot shelf is partially relaxed. Increase tension gradually as the breeze builds. By the time the whole crew is up on the rail hiking hard, the outhaul will be maxed out, and the sail will have a crease of fabric pulled tight along the foot.

BACKSTAY

It is easiest to think of backstay quantities as a percentage of throw, or distance the blocks in the purchase system have to travel. All the way up is zero, down till the floating block runs out of travel (two-blocked) is 100%. Except in the lightest air (under 7 knots) some backstay will be used at the bottom of each jib's range. Gradually increase until 80% of maximum is used at the upper end of the CODE 1, and 100% for the CODE 2 and 3.

Backstay tension does two things. First, as the mast bends the upper two-thirds of the mainsail flattens out and the leech opens up, (de-powering the mainsail). Second, the headstay gets tighter (as long as you have minimum prebend and tight lowers so that the mast does not overbend), which keeps the jib from getting fuller as the breeze increases. Both of these de-powering effects will help keep the boat on its feet when there is too much helm. Try to sail the boat with as little helm, (hence feel), as the helmsperson can live with and still keep the boat in the groove.

Since adjusting the backstay has a large and immediate effect on mainsail leech tension, mainsheet tension needs to be adjusted at the same time. Bending the mast opens the leech, so add mainsheet as you add backstay, and ease mainsheet as the backstay is let off. Next adjust the traveler accordingly and check the cunningham. You will need to add luff tension as you add backstay, and ease luff tension as you straighten the mast. It is a continuous loop with each control affecting the other.

MAINSHEET

The mainsheet is the most important control on the boat. It needs to be adjusted every time there is a change in wind velocity, wave pattern, or tactical mode. There is no one magic position for the mainsheet. You will need to keep experimenting and changing on a moment to moment basis. The game works like this. Tightening the mainsheet tightens the leech of the sail (reduces "twist"), rounding up the back of the sail forcing the boat up into the wind and making it point. Easing opens the leech (induces "twist"), accelerating the flow of air across the sail, encouraging the boat to bear off and accelerate.

Start with enough sheet tension so that the top batten is no tighter than parallel to (pointing in the same direction as) the boom. The top telltale will just be on the verge of stalling (disappearing behind the leech of the sail). Remember that you need speed first, let the boat accelerate. When up to speed try trimming harder to make the boat point. Trim as hard as you can get away with and not slow down. For every moment there is a magic combination of speed and pointing. Your goal is to find it. In light air you will need twist so the sheet will be eased from the median setting (top batten parallel), in the middle range add sheet tension until the top batten is at least in line. As long as the boat is still going well, this is fine.

The opposite tendency applies to the mainsheet tension as opposed to the jibsheet on the Mumm 30. Do not oversheet. When in doubt, ease. Unlike many boats which can sail with a very tight mainsail leech once they are up to speed, (a J-24 for example), be very careful with this technique on the Mumm 30.

If there are waves you need to punch through, to promote acceleration out of tacks, the air gets lighter, or the boat is just slow for whatever reason, ease the mainsheet and inch or two to build speed. Once up to speed and the sheet comes back on, in a never ending cycle to see how hard it can be trimmed without slowing the boat down too much. The mainsheet is also a pressure relief valve in big or sudden puffs of wind. Ease to keep the boat upright, then sheet in once the initial heel created by the puff is under control.

The first thing to do if the boat is slow or feels "bound up" is to ease the mainsheet, allowing the driver to bear off and press on the jib telltales and get back up to speed.

BOOM VANG

Upwind in light to moderate conditions the vang is not used and is simply kept snug. In heavy air upwind it can be used to help out the mainsheet with the job of pulling down on the boom and maintaining leech tension. Pull the vang on hard and you can ease the mainsheet rapidly in big puffs to keep the boat on its feet without giving away the whole leech. This technique is referred to as "vang sheeting." Off the wind use the vang to keep the top batten parallel with the boom.

Ease the vang in heavy air at the weather mark in order to allow the boat to bear off. Easing the mainsheet alone may not be enough.

TRAVELER

The traveler has two functions. It controls the boom's angle to the wind, and it steers the boat, controlling helm and heeling in puffs and lulls. Boom angle is a function of mainsheet tension for a particular condition. Set the twist with the mainsheet then use the traveler to position the boom on the centerline for maximum power and pointing as long as helm and heeling are under control.

In light air when the mainsheet is well eased to promote acceleration, the traveler car will need to be well up to weather (even to the weather coaming) to put the boom on the centerline. (Check to make sure the boom vang is off). The boom can even be slightly above centerline as long as the mainsheet is eased so there is plenty of twist. In light to moderate conditions let the helm load up some before dropping the traveler to build speed. Point with the traveler not additional sheet. It is the position of the boom relative to the centerline that counts, not the position of the traveler car itself.

As the breeze builds and mainsheet tension increases, the traveler will gradually be dropped to de-power the boat. In medium and heavy air play the traveler aggressively to maintain the correct amount of weather helm. In medium air the range will be wide, from slightly above centerline to as much as half a meter below center. In heavy air it will be well down. However, since twist is so important, it is probably better to keep the sheet eased to de-power in heavy air and pull the traveler up some when the boat can stand a little power. In heavy air the median traveler position is 100-200mm from the leeward cockpit coaming.

Once the breeze builds, the crew is fully hiked, and the mainsail is flattened with backstay and outhaul, the traveler becomes a means of de-powering the boat further. If there is too much helm and heeling, drop the traveler by whatever amount is necessary to keep the boat on its feet and the helm from loading up. This gives away the front of the mainsail (there will be some backwinding). The traveler will be played constantly to control helm in moderate conditions. Down in the puffs, up in the lulls. It is important to dump the traveler down quickly at the onset of a puff, but then pull it right back up as the initial power of the puff is dissipated and turned into forward speed instead of heel. If left down too long the opportunity to point will be missed.

A common debate centers around whether to de-power in the puffs with the mainsheet or the traveler. Both work. Usually for more subtle changes in velocity it is better to use the traveler to fine tune helm. In the big, dramatic blasts the mainsheet provides a more powerful and immediate response. Since the boat is so sensitive to twist, many of the best mainsail trimmers keep the traveler fairly high and play the mainsheet on a moment to moment basis to control helm and heeling. No matter what, keep the boat from heeling over to the point where helm exceeds five degrees.



Light Air Trim: 7 knots true wind full power, backstay off, outhaul eased 75mm, cunningham eased allowing hint of horizontal wrinkles, mainsheet eased (top batten 5 degrees to leeward), traveler above centerline.



Medium Trim Settings: 11 knots true wind, 50% backstay, outhaul eased 25mm, cunningham tensioned till luff has hint of



Depowered and Twisted for Speed: 15 knots true wind with 70% backstay, maximum outhaul, sheet eased 125mm from stall.



Maximum Depowered: 19 knots true wind, (hanging on with the CODE 2), maximum flattening all controls, sheet eased 150mm from stall to keep the boat on its feet and to allow the driver to bear off for chop without excess heel.

Weight Placement

Crew placement on the Mumm 30 is straightforward. Both upwind and down the weight should be forward and to leeward in light air to induce heel and helm, aft and up as the breeze and helm increase. With all the crew up, they should stack up from behind the first stanchion aft of the shrouds. If you sail with seven, it is okay to have one person (preferably a smaller crewmember) aft of the helmsperson.

Crew weight controls heel, thus helm. Weight should be shifted as a function of how much helm is needed. The helmsperson needs helm for feel and to help keep the boat in the groove. In light to moderate conditions if the boat is flat and slow, (out of tacks and jibes, into waves, or just when the helmsperson is losing it), add heel. The crew should be up by the shrouds upwind and down. If helm is needed shift weight to the leeward shrouds. As the boat gets going and the helmsperson has got it in the groove, the weight can be moved to the weather rail and aft slightly to the point of maximum beam. If you have a particularly dedicated crew, send all but the primary trimmer down below. Keep the crew packed together. Stacking the weight on the keel makes a remarkable difference. At first blush this may seem like a somewhat barbaric approach, but it is actually more comfortable than crouching on the leeward rail; most light air races are too shifty and nerve racking to want to watch anyway.

The Mumm 30 has a critical "power point" at about seven knots of true wind where it goes from being in desperate need of power to overpowered. The crew must be particularly active in this range. Under this threshold, if the sail controls and rig tuning is fully powered up, only crew weight can create the heel that loads the helm up and allows the boat to build speed. Conversely, as soon as the threshold is reached the boat can be flattened out and the speed will go up dramatically.

As the breeze builds the crew can gradually move up to the rail and aft to the point of maximum beam. All the crew should hike, including the mainsail trimmer, if the breeze is steady enough. The only time crew weight needs to move aft of this point is on tight spinnaker or jib reaches when the boat is at maximum heel and is getting overpowered. Upwind, if the bow is slapping coming off the waves, try moving the weight further forward. Keep the "knuckle" of the bow just kissing the water.

Like all boats, the Mumm 30 should be sailed as flat as possible. Translated this means as flat, (or with as little feel to the helm), as the driver can stand and still keep the boat in the groove. Never sail with more than 20 degrees of heel if possible. The boat will get a mushy, almost slow feeling just as it really gets hooked up. If you have it really going, you can sail with minimal heel (5-10 degrees) even in light air. This should be your goal. Careful, as soon as you feel slow, put the heel back on. Make sure the boat is well heeled out of tacks and through waves.

Downwind sail the boat with leeward heel in light air, crew below in chop. In the mid-range (12-20 knots true) the boat can be sailed with 5 degrees of weather heel. In more than 20 knots, the crew will have to be very aggressive about shifting weight to help stabilize oscillation and promote surfing. Shift from weather heel to leeward heel. Anticipate the rolls and hike hard in the opposite direction of the roll just before the boat begins to swing in that direction. Keep an eye on the bow and shift the weight aft if the bow starts to bury itself.

UPWIND TARGETS

DOWNWIND TARGETS

TWS	TWA	AWS	AWA	BS			TWS	TWA	AWS	AWA	BS
4				4.13			4				4.1
5				4.84			5				
6				5.4			6	138.2	4.1	77.3	5.59
7				5.78			7				
8	38.2	13.2	20.3	5.97			8	146	4.5	99.2	6.085
9				6.07			9				
10	36.2	15.3	19	6.16			10	151	5.3	116.1	6.537
11				6.28			11				
12	36	17.4	20.3	6.4			12	160	6.1	140	6.694
13				6.48			13				
14	36	19.5	21	6.54			14	148.4	8.2	118	8.175
15				6.6			15				
16	36	21.5	21.7	6.65			16	145.2	10	114.6	9.149
17				6.7			17				
18				6.75			18				
19				6.8			19				
20	36	25.5	22.6	6.82			20	142.1	12.4	104.8	12.92
25				6.95			25	147	13.9	112.1	16.16
30				7.04			30	154	15.7	126.5	17.88

Putting It All Together

At the risk of gross generalization, the Mumm 30 needs to be sailed with the helm more loaded up than most boats upwind, and downwind it can be steered more aggressively in terms of angle changes. Upwind, even though you should try to sail as flat (minimal helm) as possible, the boat can handle more heel and initial helm loading (at the outset of a puff). Press the telltales and do not be so quick to feather at the outset of a puff until the speed has built. The small, high performance keel sections need water flowing past to work well. Concentrate on footing more than feathering. It is probably better to press on the jib a little and use less mainsail (add twist).

Downwind, steering technique on the Mumm 30 is a function of how quickly it accelerates, (or slows down) with small changes in breeze velocity. You will need to change angles (heading up and bearing off) more rapidly than on a heavier, less responsive boat.

Use the target table as a guideline with the following modifiers in each color coded range:

Velocity prediction programs are notoriously unreliable in this range upwind and down, instrument readings are also not at their most accurate levels. Use seat of the pants inputs. Upwind get the boat moving and don't worry at all about pointing. Downwind drive to the spinnaker and do not make any gross course alterations. A constant true wind angle in the 140 degree range might be the most useful electronic input. A steady helm is the key. Spinnaker trim should be kept constant with little movement; steer to the spinnaker.

The critical "power threshold" of the boat upwind where you go from underpowered to overpowered. Keep the jib telltales pressed (sail with them streaming straight back), but shift weight aggressively. Getting the weight up here (providing you have speed) could jump the boatspeed .5 to .75 of a knot. The targets show a big change in this range, but it is even more dramatic than they indicate.

In practice the boat seems to get up to speed faster in this range upwind than predicted. Speeds seem to be several tenths faster in this range than the VPP indicates. Crew movement to control helm is critical at the bottom end of this range; the driver needs to initiate this movement based on what they feel.

Note the sudden wind angle change in this range. The Mumm 30 has a dramatic downwind cliff, and it occurs in less breeze than you would expect (11 knots). Look for opportunities to square the pole and get deep in this range. Downwind in 12-17 knots of true wind you can sail very deep; often deeper than the targets suggest.

Downwind targets show a reverse cliff in this range; in other words it pays to head back up because of the planing nature of the boat. However, in the real world, while this change in steering tactics is valid, it probably occurs at a higher velocity than is indicated by the VPP's. It definitely pays to start sailing a little higher and hotter angles in more than twenty knots of true wind, particularly if there are waves and surfing is a factor.

Downwind Sail Selection



- **CODE 0 Masthead Asymmetrical** 0--7 knots true Designed primarily as a VMG sail to be used when tacking downwind in light air. It can also be used in reaching conditions to a max of 19 knots apparent. In heavy air with the pole squared back it can provide a controllable alternative to the masthead symmetrical.
- **CODE 1 Masthead Symmetrical Light / All Purpose** 7-20+ knots true. Designed as an all-purpose sail with a slight emphasis on running. This is the primary course racing sail. Upper end range is a function of the crew's ability to keep the boat under control. It is usually the sail of choice at the bottom end of the range if there is any question about whether the air is light enough to use the CODE 0 asymmetrical.
- **CODE 2 Masthead Symmetrical Heavy / All Purpose** 15-35 knots true Added to class rules in May, 1996, the sail is designed to be used in breezy course racing conditions. Made out of nylon under stipulation of the class rules, it is designed to protect the light masthead symmetrical from damage and abuse. It has a runner orientation.
- **CODE 3 Fractional Symmetrical** 22+ knots true. An all-purpose sail intended to be used when its too hairy for the full sized masthead kite.

Boat Handling

. For the most part the techniques are fairly standard. Without attempting to provide a complete step by step description of the mechanics of sailing the Mumm 30, we have tried to identify one or two important keys for each evolution which are relatively unique to the boat.

Tacking and Upwind

Be careful not to turn too fast. The boat will spin rapidly with small amounts of rudder and is easy to overturn. Use only one jib trimmer. There is not much sheet to pull in, and with good timing you probably won't need a winch handle in all but the heaviest breezes. Both winch handles can be left in when tacking. Take one wrap off, and leave the other two. Take the sheet to weather when full hiking is necessary. Put one wrap around the weather winch and cleat. This will enable easing without leaving the rail when slow or ducking a starboard tacker. The mainsail trimmer usually makes fine tune adjustments once the crew is fully hiked.

Spinnaker Sets

Store the spinnaker pole on deck with the inboard end attached to the stanchion base aft of the shrouds. Except in light conditions, make sure to turn down first before hoisting or the spinnaker may become trapped behind the spreaders. You will need all the crew weight hiking in order to bear off; don't let the crew move into the boat as you approach the mark. The vang will need to be eased to bear off in heavy air. Set from the forward hatch. Tape the hatch handles up so the spinnaker does not get hung up. Do not ease the jib too far or you will trap the spinnaker. In heavy air, ease the jib to bear off, then retrim once the boat has made the turn and flattened out. The jib can be eased from the hiking position on the weather side. The mainsail trimmer can also hike as they ease.

Jibes

The mainsail is the key. Grab the sheet parts and throw it across the cockpit just as it unloads (as the boat passes dead downwind). Do not try to pull it through the cleat. In a breeze, if you are not aggressive about getting the mainsail across it will steer the boat and you will probably crash. The driver should steer slowly, but smoothly and deliberately from broad reach to broad reach. Do not try to hold the boat dead downwind. In heavy air initiate the jibe when surfing down a wave. Use one person on the sheets, and one person on the guys. Use lazy guys even in light air.

Takedowns

Start early! You will be approaching the leeward mark faster than you think and you want to be fully cleaned up and hiking as you round. Weather takedowns are the norm except when the pole is on the headstay. Take the pole off completely well before the mark. With six, the pit person grabs the guy and holds it out to stabilize the chute. They become the primary gatherer. The guy trimmer moves forward to the pit and lowers the topping lift to the bow person who stows the pole outside the



For service, questions call or for the name of your nearest Quantum Sail Design Group representative call: 1 • 800 • 711 • 6996. or contact dflynn@quantumsails.com

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