

# XOD TUNING & TACTICS

## BOAT PREPARATION

**Weight:** A heavy X is a slow X. Try to have your boat on minimum weight. Check if correctors can be removed. Minimise weight carried in lockers.

**Hull Finish:** A hard smooth anti foul is important. X171 uses VC offshore applied with a roller then cut back with wet and dry to a racing finish. We have found that the VC Offshore loses most of its antifoul power after about 4 months and a second application mid season is advisable.

**Scrubbing:** Weed and slim build up on the hull very quickly. The boats can be scrubbed by diver or haul out every 2 weeks. In between time it is worth using a curved brush to scrub from the boat. At Cowes week we scrub every day.

## CONTROL SYSTEMS

**Mainsheet:** Reduce to 2:1 or even 1:1 in light air. This enables you to sheet the main much quicker with less sheet dragging in the water when going down wind.

**Traveller:** Should be easily adjustable from the rail.

**Backstay:** Should be easily adjustable from the rail.

**Kicker:** Very important control when reaching and running. Needs to be strong enough to control twist on runs to prevent rolling and loss of power.

**Outhaul:** X171 sets sail to black band and do not adjust outhaul during race.

**Inhaul:** X171 uses this control to flatten lower part of sail in heavy winds. Mark line for light, medium and heavy position.

**Cunningham:** Only used in very strong winds to pull draft forward.

**Jumpers:** Hard on in Medium conditions. Ease in light and heavy conditions.

**Main Halyard:** Must not stretch. Mark position of black band and leave alone.

**Jib Halyard:** Must not stretch. Check each year for wear. Mark tensioning system line for light, medium and heavy position.

**Forestay:** Keep adjusted so that no load is carried when going upwind with maximum rake. Do not have forestay too slack or mast may break if jib halyards fail.

**Jib Sheet Barbour Haulers:** Various systems for controlling twist and sheeting angle of jib are available. X171 use floating block system. Set block height to give parallel slot. Height above combing depends on condition of sails, typically about 2 inches. Increase sheeting angle as wind strength increases or when sailing in rough water. X171 hardly ever increases sheeting angle when inside harbour.

**Jib Cunningham:** Used by some boats to control fullness of jib entry.

**Spinnaker Halyard:** Need to be friction free. Connection to head of spinnaker should be taped to prevent unplanned release. New class rule allows jib halyard to be used if spinnaker halyard is lost

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up mast. Mark halyard to show when fully up and mark about 4 inches lower for use when close reaching. Spinnaker head snags on jumpers when close reaching and is best lowered slightly.

**Spinnaker Pole:** Must be max length. Pole must be easy to attach. Pole must not bend or break.

**Spinnaker Pole Up/Down Haul:** Various systems available. System must not allow pole to sky or bounce. Mark system for running and reaching positions. X171 uses elastic on up haul and rope on down haul.

**Spinnaker Twinning Lines:** Fitted on some boats. Help to prevent sheets going over end of boom. Allow crew to sit out on reach without guy wearing groove in back. In X171 we let both Twinning Lines free when running down wind and pull the windward (Guy) Twinning Line fully home when on a fine spinnaker reach

**Pumps:** Vital equipment if going outside of harbour. XOD's ship a lot of water. Cross-linked pumps that can be used when beating are best. A scared man with a bucket also works but is not that fast. It is useful to position the pumps handles on the deck each side in order that they can be operated without the crew leaving the windward side. (See "fat is fast" below)

**Safety Lines:** Fit safety lines for use by third member of crew. These improve safety and sitting out. There is a view (naming no names) that fat is fast in XOD's. This may be true but active sitting out is also fast.

## TUNING

**General:** The best person to advise you on tuning is your sail maker. XOD's vary a lot in shape and mast stiffness. The following ideas may provide a starting point and are based on Hyde sails.

**Mast Bend:** There is a large range in the stiffness of different masts. Some sailors go fast with bendy masts and some go fast with stiff masts. The main issue is to ensure that your mainsail is cut to match the bend character of your mast.

**Mast Heel:** Start with a mast heel location 6' 4" from the inside stem post to the front of the mast at heel level. This can easily be measured using the spinnaker pole, which should be 6' 6". This position will allow the mast be raked forward when running without being inverted by the deck beam at the front of the mast gate.

Adjustments to the mast heel may be required once the balance of the boat is known.

Before fine tuning the Inners and Uppers it is important to check that the mast is exactly upright in the fore and aft plane.

**Inners:** Set the inners so that the mast is held just off the deck beam at the front of the mast gate when in the running position. Then tie a knot in the back stay so that the mast is straight and does not invert when running. Check that the inners are symmetrical and the mast is not leaning to port or starboard.

**Uppers:** The uppers need to be adjusted when sailing on a moderate day. Set the uppers finger tight. Set the boat on a beat with the mast rake set to have the boom about 1' off the aft deck. Look up the back of the mast track. This is difficult to do. It's best done by sitting on the deck beside the mast, with feet foreword and looking up the track. You should see the mast stepping out

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to windward above the inners. This can be difficult to see. If you pull on the windward shroud the mast should step more out to windward. The aim is to let the uppers off a few turns at a time until the mast is straight and the upper hounds are above the inner hounds. This can be done by successive letting off the leeward upper then tacking and looking up the mast. Once you are happy that the mast is straight then check it is vertical. If it is not you have to reset the inners and then reset the uppers. This process all takes some time and needs to be checked regularly to make sure the mast has not gone out of alignment.

**Upwind Mast Rake:** The final part of the process is setting the mast rake. This needs to be done for balance on the helm. Set the boat on a beat in moderate airs with all the sails sheeted correctly. Mark the position of the halyard on the side of the mast. Now get the crew to sit out. (Crew may need some persuasion to sit out when not racing but if you regale them with tales of many huge boat speed gains they usually come round) You should be able let go of the helm and the boat sails on straight.

If the boat rounds up then try telling the crew to sit out more. If it still rounds up try reducing the rake by 0.5" of halyard relative to your mast mark. Continue to find the rake that produces a balanced helm.

If the rake is too upright, then you will need to consider moving the mast heel further forward and starting the process again.

Mast rake needs to be set for each wind strength and sea state. In general the halyard will be slightly shorter (1") in light airs and slightly longer (2") in heavy airs.

When you find a sweet spot for your boat note it down. It may take a whole season to find all the settings. The trick to fast sailing is to be able to find these settings quickly so the crew can concentrate on tactics not boat speed.

**Downwind Mast Rake:** Let the mast forward on the backstay as far as possible. Use the stopper knot in the backstay to limit forward rake. Be careful not to invert the mast.

## HELMING

**General:** The XOD is very heavy and consequently takes a long time to get up to speed. Conservation of momentum is the key to fast sailing. Avoid sharp turns or vigorous helm movement.

The difference in XOD boat speeds are very small so tactics and race course position are very important.

The helm must be balanced; sailing along with the breaks on is not fast.

## STARTING

Dinghies can sit on the start line and pull the sails in moments before the start. The XOD needs to be wound up to full speed for at least 30 seconds before the start.

Use your compass to check the line bias. If the line is biased make sure you start at that end.

If there are a lot of boats looking to start at the biased end start a few boat lengths up the line and avoid the mêlée as early boats slow down and try not to hit the pin.

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Get a transit so you know if you are over the line. People tend to sag back from the middle of the line.

Get your boat set up for the beat before the start.

Try not to get too close to the line too early. It is better to sail parallel to and about 2 boat lengths down wind of the line until the final 20 seconds. You can then round up and cross the line close hauled. Many boats sail down the line and round up after the gun goes. They risk being luffed over the line and loose distance whist they round up to close hauled.

Boats often line up in groups on starboard tack during the minute before the start. Try sailing down the line on port and tack into a gap with 30 seconds to go. Remember not to leave the tack to late or you will not have time to get up to speed before the start.

If you want to start at a given location, sail through that point on port gybe about 90 seconds before the start, continue sailing down wind at 45 degrees to the line until 60 seconds, gybe round or tack then start to sail back towards the line on starboard tack. You should hit the line on time in the location you want.

## **UPWIND**

The boat must be as flat as possible. This means getting the crew to sit out. It also means learning how to de-power the rig in heavy airs. The keel on an XOD is quite short and stops working when the boat heels over.

The crew should sit together on the rail at the widest part of the hull. As the waves increase it is worth moving aft to help keep the boat dry.

XOD's are badly slowed by disturbed air, so try to find clear air. It is usually worth taking away rather than hanging on in disturbed air.

## **CROSS WIND**

Set the spinnaker halyard about 4 inches lower than normal when tight reaching. This stops the head of the spinnaker being closed by the jumpers. Adjust the pole to make the clews level. Mark the guy so the pole does not rest on the jib luff. We use none stretch sheets to stop the pole sagging onto the jib luff in heavy weather.

Practice fine reaching with the spinnaker up. The XOD can sail very close to the wind with a spinnaker and still gain ground. Practise windward launches with your crew as they are easy to mess up. When sailing 3 up, David goes to the forestay and we launch the spinnaker from there.

In medium airs let the back stay off and use the kicker from maximum power. In heavy airs apply some back stay to flatten the main and ease the kicker to vent the main. Get the crew to sit out hard in heavy air to keep the boat flat.

It is hard to pass boats to wind ward on a reach. It is usually better to try to position yourself so you get an over lap at the next mark.

Follow in the wake of the boat in front to sail in smooth water.

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Remember to sail straight between marks. A lot of boats sail high to protect their wind and then struggle to get down to the mark. It is sometimes worth sailing a low line away from the mark to get clear air. Be careful not to do this if the mark is set high. You will be sailing into bad air from the boats in front and will probably be rolled.

## **DOWN WIND**

Decide which side you want the spinnaker and whether you are going to sail high or low before the mark. A lot of boats go round the mark then make the call which is too late.

Let the back stay right off and pull the rig right forward. Get the main right out and the spinnaker pulling before the pole goes on. Set the pole height so the clews are level. The pole should be set for maximum projected area. Let out the Main in-haul. Use the kicker to control the leach of the main from twisting too much. In heavy airs XOD role. This can be controlled by applying more kicker, pulling the main in and letting the pole go forward. The last two controls will slow the boat so only use them to control rolling in gusts then revert to maximum projected area. Use the waves to promote surfing. Yes XOD's do surf. You can use large waves to sail below the lay line and thus work the boat to leeward.

As with reaching, sail straight between marks. Have one of you crew look aft to see if boats behind are on your wind. Remember they are on your wind if their Windex is pointing at you. It is apparent wind that counts. If you are behind manoeuvre for position at the next mark. Consider sailing on the wind of the boat in front but remember he may sail higher to protect his wind and this will allow the boats behind to close on both of you.

## **THE SECRETS FROM X177 - OR STATING THE OBVIOUS??**

### **Boat preparation**

Really do leave this to the team in Bembridge, they do a great job overall - importantly they leave the set up/tuning to me and don't try to guesstimate where things should be.

Usually have the straightforward things done..varnish and antifouling although in 2002 we had the coamings adjusted to the legal limit...really because I have a shorter crew!!

Always have more antifouling 2 weeks prior to Cowes....important if we're using soft antifouling (1998-2001) but more psychological if using hard (2002). In truth white antifouling is probably not the best..but it is pretty!

Seems obvious but make sure the systems work, and move cleats etc that hurt crews. Make sure Compass is easy to see - a problem on 177!

### **Tuning and set up**

I use the Christian Brewer set up and tuning guide...it works for me - See Yachts and Yachting XOD tuning guide on their website if you don't have a copy.

Obvious Tip - mark everything when you've had a great day, gives a good start point for when you get similar conditions.

It's useful to know how flexible your mast is, flexible masts mean fuller mains!

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Have somewhere to clearly write the course down. (we do it twice, each side, on the inside of the coaming). When you've got the course at 5 mins move the kite if need be.

CREW - Sailing two up can be hard work unless you're both gorillas or you work very well together. When three up, make sure you all know who's doing what, especially looking out for other boats!

## **Starting**

Get to the start area in good time, a few tacks upwind to get feel.

Do the basics well and you'll be front line. (Space to leeward and boat speed is always a good thing). Don't start just to windward of a quick boat, you'll soon be struggling and looking for a gap to tack into.

Crew does the timing and calls out regularly, it's no good as a helm trying to look at your watch when you're the one who's supposed to be steering the boat!

Try and keep out of trouble and don't be afraid to bale out early when you know its going wrong. Remember everything takes a bit longer in an X...getting up to full speed in light breeze can take a full minute or more!

Check the course with 2 mins to go.

If the start line is very biased and there is only one place to start, consider making the second best start a boat length or so away from where the carnage will be (but make sure you're going fast!)

## **Beating**

Crew weight central for and aft in everything except big wind and waves, then move back to get the bow up.

Don't be afraid to take sterns, especially at the start. I'd say that 90% of the time it'll pay later.

Watch for shifts all the time, try and keep in phase and take small pain for long term gain...but beware how far you go in the harbour, the tide is a killer in light breeze and looking for a lift whilst heading for a big negative tide could be costly.

Get to windward of the lay line and a cover tack on boats below when approaching the windward mark is effective, especially with a negative tide effect in the harbour.

## **Running**

Work hard, keep clear air and have a great spinnaker trimmer, Crews that concentrate are gold-dust.

Out of harbour, waves are good!

## **Reaching**

Often a case of preserving place in the harbour. But an opportunity if there is a long leg. Keep playing the main, look for and hunt for waves.

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Make sure the rig is fully powered for the conditions, a classic is to have too much backstay on after a windy beat and then have less power on the reach. This was the reason we overtook Tony P on a Dunes Channel reach - and we went to leeward!

Speed tip - In big fleets keep in the line, keep clear air, don't let people role over you - the last race at Cowes this year was testament to this - last 10 at the first mark after a long reaching leg!

In the harbour, apart from the Tony incident it's rare to pass to leeward.

## **Finishing**

Top tip...be ahead of the competition...it doesn't matter if it's less than a boat length. (a few minutes is more relaxing..but concentrate all the way to the line).

If your behind, and it's a series, consider the whole regatta..watch out behind before launching an attack. If it's a one off race watch for mistakes on the boat ahead (helms or crews taking jackets off when it's hot means someone either isn't steering or playing the kite), look for other boats/motor boats etc to use as obstacles to assist you in making a move. There are often several classes finishing at the same time, keep clear air, and be decisive in what you want them to do!

## **Chichester harbour tactics**

If you're new, find out who the quick boats are, they're quick and more often than not go the right way! It's rare that the flyer works...unless you're the jammy sod in 186!

Tide is crucial...finding the edges is important...take two dip sticks (long canes, not the crew!) and know how long it takes to tack after the crew shouts GO!

On a beat to Dunes go left, or is it right?? You'll be right 50% of the time, but which 50% who knows! Even those with plenty of grey hair don't really know!

## **Others**

Never give up and keep thinking - unless you're behind X177 in which case crack open beer, have some sandwiches, admire the local wildlife!

PS> If you see Mark Palmer heading for a shallow bit there is a better than even chance that you're about to gain a place.