

Nordic Folk Boat Base Settings

Introduction

The following information has been gathered from recent regattas in Europe. Following the Sessan Cup in September 2022 it was clear that the European boats particularly the Danish boats had a significant speed advantage over the Western Solent boats that took part.

During 2022 myself and Ed Donald have made a study of the difference in settings between UK boats and the Danish fleet and have made significant changes to the way we set up the rig on Madelaine and Gybe n' as a result. The aim of this document is to share this data with all Folkboats in the UK Fleet.

Before we look at rig's settings let's talk about rigs... Metal v Wood

I have been in and around the Folkboat fleet for nearly 20 years, not as long as some I know. However, I have sailed on several different boats in the UK fleet. Some with wooden rigs some with metal rigs. Some metal rigs with no taper and some with a taper. Some people believe that there is an advantage with a metal rig and that they are lighter! It is interesting to hear that our European friends are currently having a debate in the opposite direction believing that some wooden masts are better balanced in their weight.

My thoughts for what it's worth are as follows: If you have a well-maintained wooden mast, you are at no disadvantage to a metal mast and in fact I go as far to say that if you have a non-tapered metal mast you are at a disadvantage to both tapered wooden masts and tapered metal masts. In the summer of 2022, I was lucky enough to take out a wooden mast Folkboat in a Saturday race after Folk Boat week. We won the race against a metal mast. My feedback to the owner who kindly allowed me to take his boat out was that she was a rocket ship upwind. I would go as far as to say she is the same if not quicker than my boat upwind.

It is no coincidence that over the last twenty years of the fleet in Lymington the top boats are mostly sailed with wooden masts, (Crackerjack, Tak, Bonnie and Padfoot to name four). I will admit that having a tin mast has several advantages though. You can leave it in your boat all year round and don't need to paint it. It won't rot, but the fittings will still corrode if you don't take care of them. Any perceived performance is simply not born out by the racing results of the fleet in the western Solent.

What are the fundamental changes to rig set up today?

The change in rig setting moves away from the old thought process of increased rake offering better upwind performance and instead generates a more upright mast as a base setting. It also changes the point of measurement from the transom to the forward face of the companion way bulkhead. This allows for an easier measurement process with less variation for tape bend over the cockpit combing.

This change in the rig set up creates a requirement to sail the boat in a different way to how people up to now might have sailed their Folkboats.

Forestay Sag

The base setting for a forestay is 131cm, this remains the same as per previous rig set up guides. However, with the rig further forward at the tip the sag of 8cm needs to be managed differently. When sailing to windward in medium wind 14/18 knots the mainsheet tension should self-manage the forestay sag. However, when sailing to windward or even fetching in light airs there is a need to manage the forestay sag by applying backstay to maintain the 8cm sag on the forestay. During 2022 we managed to measure nearly all the fastest Danish boats and their forestay varied from 129cm to 131cm, the majority were 131cm.

Mast base settings

At the beginning of the season Madelaine had a measurement of 198cm from the base of the mast to the forward face of the companion way bulkhead. During the season we managed to measure all the fastest Danish boats. They varied from 196cm to 193cm, only one boat was set on 193cm all the others were 195/196cm. This appeared to vary very slightly due to the hole positions in the T track that each mast sat in. Gybe n' and Madelaine are both set at 196cm.

By moving the mast base back 10mm, 20mm or even 30mm there is a much larger movement at the mast head, somewhere in the range of 100 to 140mm. This has one significant effect on the rig. When you head down wind you project the rig further forward, this improves the trim of the boat downwind lifting the transom further out of the water so offering less drag. This should all result in more boat speed and a more efficient sail plan down wind.

By playing the backstay up wind you can tune the rig to offer good upwind pointing in light airs, just remember to release the backstay when you round the windward mark, or you will not get the rig to project further forward and then you lose the benefits.

Backstay

Traditionally the backstay only really came into play when the wind was honking!! 20/25 knots and everyone was starting to put on the backstay to generate twist in the top third of the main spilling power as the rig becomes overpowered. Another method might be to put more vang on to push the bottom third of the rig forward generating a similar effect of opening the top and flattening the bottom third of the main sail. *Some do both. Different heavy weather racing styles and crew weight make each option fast, much depends on crew weight and how much you need to depower to minimise excessive heeling and weather helm – remember some weather helm is good – an excessive amount means the rudder acts like a brake.*

Most boats backstays are crude and controlled from the stern or maybe on the traveller either side, maybe on a 2 to 1 system. This was the case on Madelaine which makes fine tuning the backstay a challenge. On Gybe n' we have system that comes to a single point under the main sheet so the helm or main trimer can adjust it on a micro level which makes a massive difference to sail trim if the helm/ crew remembers to use it! In light air and in heavy airs we now spend a lot of focus on this as part of the total trimming process. In medium airs it is used less but still gets used a little. This is one of the biggest changes I have noticed personally. *Its all about keeping that 8 cm sag on the forestay in all conditions to generate the power through the slot (gap between the main and jib when looking to leeward) which is where boat speed and ultimately pointing ability come from, remember speed builds height!*

Shroud Settings

Again, changing the settings on your shrouds is important depending on the weather conditions. This is made much easier if you have a modern turn buckle as changes can be made quickly on the dock or on the water between races. To make informed changes to your rig setting it requires a rig tension gauge. There are several different makes, and they range in price. However, getting one is a must and it always surprises me how few people have one and use it regularly. So, if you haven't got one and you want to improve your sailing performance the biggest single improvement you can make would be to invest in one or even team up with another boat and share one. I sail three different vessels currently, Finn, 2000 and Folkboat. Each require a rig gauge to get the best out of them, so I have three different gauges, one for each boat.

Anyway, back to setting shrouds... With your forestay set at 131cm from bottom of the band to the deck. Pull on the backstay until the gauge registers 10kg. It is worth noting that while doing this you want to minimise the roll of the boat and any pitch change so best to do it in calm conditions with as few people on board as possible. Now measure the shrouds with the backstay still applied and set your shrouds to 20/22kg. Most Danish boats are on 22Kg.

Now release the backstay and check what the setting is on your shrouds, make a note of this and this is your base setting. You can then adjust up and down for the conditions. Usually, one turn off for super light conditions and one to two turns on for heavier conditions. Always good to check your settings regularly as your rigging will change slightly for different weather, midsummer to spring / autumn. Metal expands and contracts with temperature changes.

The first thing I noticed with these settings was how loose the shrouds are. This has the effect of the power in the lower parts of the mainsail, where the most sail area is and least heeling moment – allowing you to sail flatter and faster upwind. It also means that the boom can move more towards the perpendicular downwind, maximising the sail area.

So there is a reason that the shrouds are loose in light to medium weather and as such you must remember to tighten the bottle screw nuts and tape them up (on the shrouds and forestay) if you have them. In heavier weather you tighten the bottle screws,

which tightens the forestay and has the effect of depowering the jib and main. Again, how much will likely depend on your total crew weight.

Jumpers

The metal masts tend to have adjustment systems on them that allow you to make changes on the fly. These can easily be retro fitted to any wooden mast but I'm not sure you need to. The jumpers are usually left off in light airs to allow the rig to be adjusted through the backstay as maintaining the 8cm of sag is critical to maximise good boat speed in light airs.

In medium airs a little adjustment is made to help stop the top of the rig falling away, this is typically when the backstay isn't being played much as the mainsheet tension is controlling the forestay sag. On a wooden rig system this is usually one or two turns on. Once you are in heavy weather conditions you would let the jumpers off again as you want the top of the rig to fall away to assist in depowering the top of the rig when going upwind.

Jib Car Position

The distance from the forestay buckle to the jib cars should be between 264cm 265cm, this varies depending on which sails you are using. Where you set them on your cabin top is personal preference depending on how you like to sail, footing off for speed or high and slower but potentially better Velocity Made Good. However, the base setting would be 58cm from the centre line of the boat to the centre of the jib car. On Gybe n' we have a fixed position fore and aft (set at 264cm) but have a floating car in a similar way to an XOD, this allows us to change the sheeting point from the cockpit. Our inboard to outboard position can be changed to manage the slot but is set at the 58cm base setting. **Lighter airs less slot, heavy weather more slot.**

Improving performance

I'm no expert, far from it I'm just another club sailor. However, I have been sailing since before I was born as my parents sailed all their lives and my mother went into labour with me onboard. I grew up sailing from the moment I was dropped on the floor as Mum and Dad just got through the door before, I arrived.

I have sailed many different dinghies and keel boats over the years as well as fifty years of windsurfing. I have always had a desire to learn, particularly if it involves having fun on the water. Foiling my windsurf board around at 30 knots is taking a lot of my focus these days but I can't get enough of these slow clinker Folkboats as they have a particular appeal and there is a good challenge in sailing them well. In sailing we are constantly learning, and I think I have learnt more about sailing a Folkboat this last year than in all the nineteen previous years put together.

If you really want to get better, making some adjustments to your rig is a good start but it also needs you to work on your sailing performance too, trimming, starting, wind shifts, mark rounding's, fleet management and teamwork are all areas that you can improve on. From my professional career, there is one single tool that helps in everything I do. Plan, Do, Check, Act (Deming's cycle).... the cycle of continuous improvement is iteration. Good luck fellow sailors and I look forward to seeing you on the water in 2023.

The all - important 8 cm sag!

Attach a thin line (black) to the jib tack foot and to your spinnaker halyard, along with a rigid 8 cm marker (red) and hoist until the (red) marker sits alongside the 5th jib button on the forestay, and your line is taught. Tighten or loosen the shrouds until you achieve 8cm sag between the black line and forestay at the 5th button up from the tack foot. F1-3 wind for establishing this base setting.

