

## **Installation of a single-line reefing system and leading all controlling lines aft.**

**By Tim Sharman April 2013**

I have owned My H22 *Strider* since 2002. During last season I was pondering whether to move on to a H24 for greater degree of comfort and stability for my next decade of sailing. I was strongly attracted to the merits of the 24 but less so to the idea of beginning again with a completely strange boat having, over 10 years, got *Strider* to a point where everything is basically sorted out and I am fully aware of the material state. Also, and not the least factor, the 22 is a prettier boat (in my view!), a great sailer, cheap to run and easy to handle.

I decided therefore to keep *Strider* but to carry out a refit in order to make life easier for myself for the future. This came down to two points. First, I have been in the practice of lifting my outboard after each trip and flushing in an old swing bin of fresh water, which I place in the outboard well. I can do this because I enjoy the blessing of an alongside berth with fresh water easily available. This has kept the Tohatsu in good order, but it is a strenuous chore at the end of an energetic day's sailing and, as the years slip by, the engine seems to get heavier! So, knowing that many owners leave their outboards shipped for the whole season, I applied a proprietary outboard antifoul and decided to leave it in the water. I can keep an eye on any growth and can lift it to clean once or twice if necessary. That was the easy one.

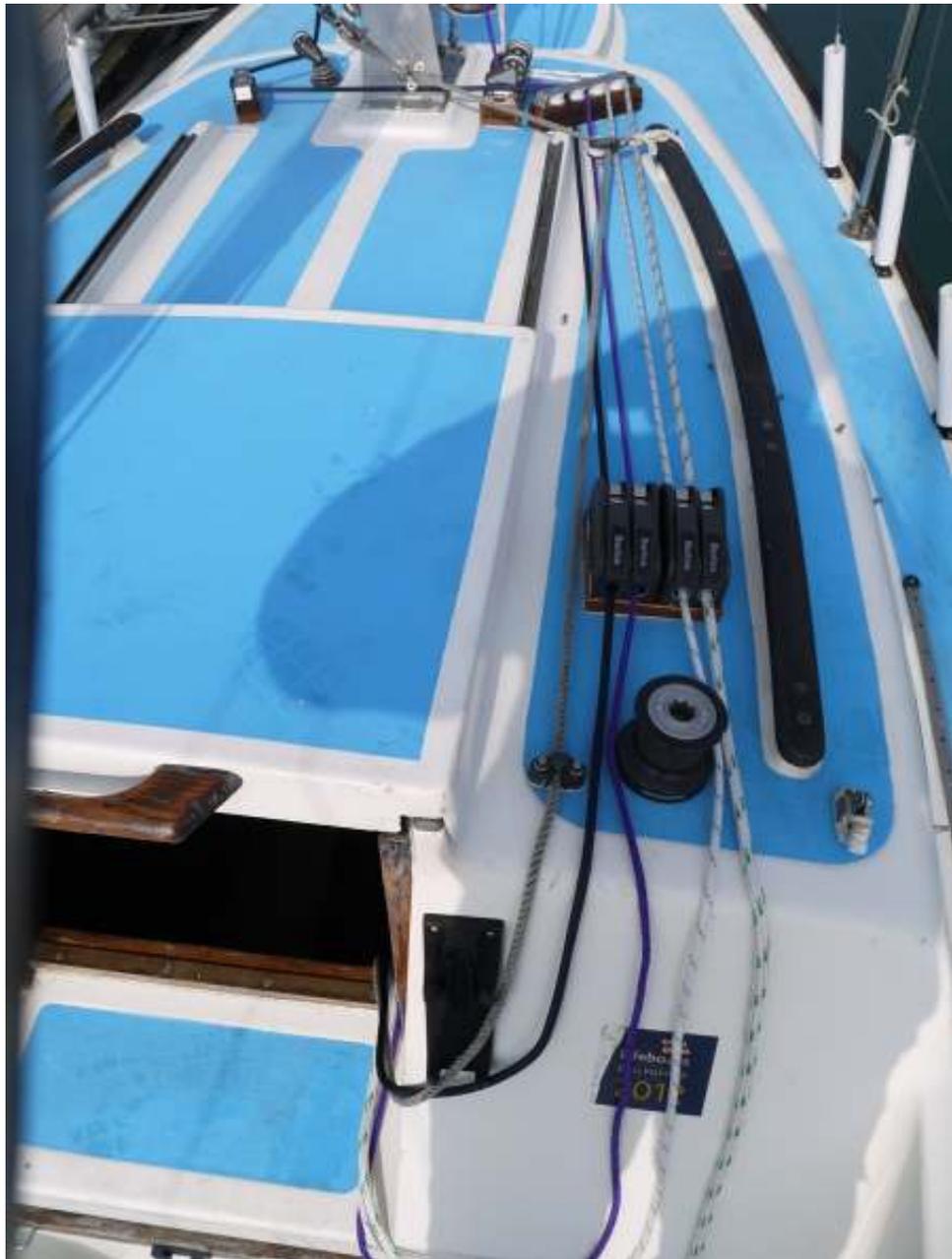
The second and by far the most significant (and expensive) item was to shift to single-line reefing. I had often considered this but *Strider* has a very smart grp headlining and I have always been loath to cut into it in order to fit the necessary deck gear. However, now I was determined that the boat had to work for me, so surgery was planned!

The Barton single-line reefing system (two in number) seemed ideal for my needs, plus I needed appropriate blocks, deck organisers, clutches etc to complete the job. In addition to the two reefing lines, I wanted to bring the main halyard, topping lift and kicking strap aft to the cockpit, preferably all on the starboard side, where I intended to fit the halyard winch having removed it from the mast. Leading all lines to starboard clearly added some complexity, requiring the second reefing line to be led across the deck, behind the tabernacle. The reason for this was two-fold – I did not want to crowd out both sides of the coach roof, as I mount my GPS unit to port and I did not want to buy a second winch.

The Barton systems come with comprehensive instructions so I do not need to repeat them here. Just to say that I did buy punches, a tap and die set and a rivet gun from Amazon, which are needed to secure the parts to the boom and mast. Those of you like me who are not engineers or familiar with tapping threads, take heart, it is not too difficult. The main lesson I learned when tapping threads is to believe the instructions when they say you need a 4.3mm drill for a 5mm tap – the right size drill does make all the difference!

It is also good idea to practice on some scrap aluminium if possible. You-tube is useful here – plenty of examples of how to tap a thread.

I spent a lot of time working out exactly where all the tang blocks, bulls eyes, leading block, deck organisers, rope clutches and winch had to be sited. You need to have your mast and boom rigged to be able to do this accurately. Take time over this! My solution is shown in the various images.



*Overview of the arrangement of deck fittings. From right – Main Halyard; Topping Lift; No1 reefing line; No2 reefing line; Kicking Strap*



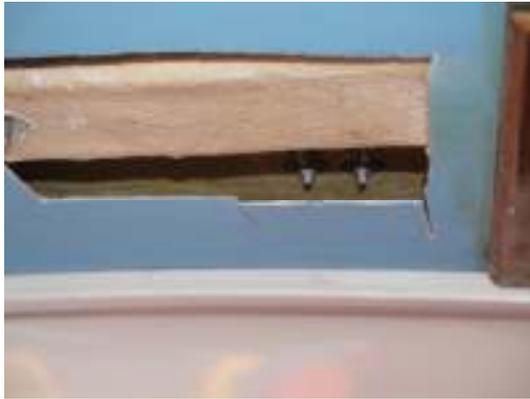
*Left/top (port side) – the tang block for No1 reefing line above the bulls eye for No2 reefing line. In the background you can see the tang block for No2 reefing line (stbd side). The No1 bulls eye is out of view but you can see the No1 reefing line leading downwards to the upright block.*



*No1 reefing slide on the boom; both reefing lines rigged.*

A key issue is to expose the supporting structure of the coach roof and work out where items could be secured, where bolts/machine screws will pass through the deck and whether any will pass through or close to the supporting members which are glassed into the deck. You need to know this to get bolts of the right length and to avoid minimise drilling through supporting members. *Strider* does not suffer from mast compression and I really did not want to drill through the main transverse supporting frame under the mast, in case it becomes weakened. In the end I could not avoid this altogether, but was able to minimise the number of holes.

My first action was to buy one of those tools without an interesting name (unless someone knows it) – in my case a *'Bosche Multi-functional, Allrounder, Oscillating, Multi-tool, with Cutting Discs, Saw Blades and Sanding Sheets'!!* The key point being, you can cut into GRP without the risk of losing a finger as the blade oscillates rather than rotating and it does not fill the cabin with grp dust! So armed, I made tentative exploratory cuts in the headlining in the areas where the deck gear would be mounted.



*Port-side looking forward*



*Starboard side looking forward*

*Left, bolts securing the stand-up block and 2-way organiser. Right, 4-way deck organiser and the 'bridge' unit which holds the upright blocks. The main transverse supporting member can clearly be seen.*

Three out of four bolts from the 4-way deck organiser had to go through the transverse member, as did one of the two of the two-way organiser on the port side.

The final point of detail in my solution is that I mounted the leading blocks and deck organisers on 40 mm high wooden blocks. The main reason for this was the need to lead to second reefing line over the mast step which is about 35 mm higher than the deck level. The rope clutches were mounted on a 20mm high block, to give the correct lead onto the winch, which was mounted directly on the coach roof.

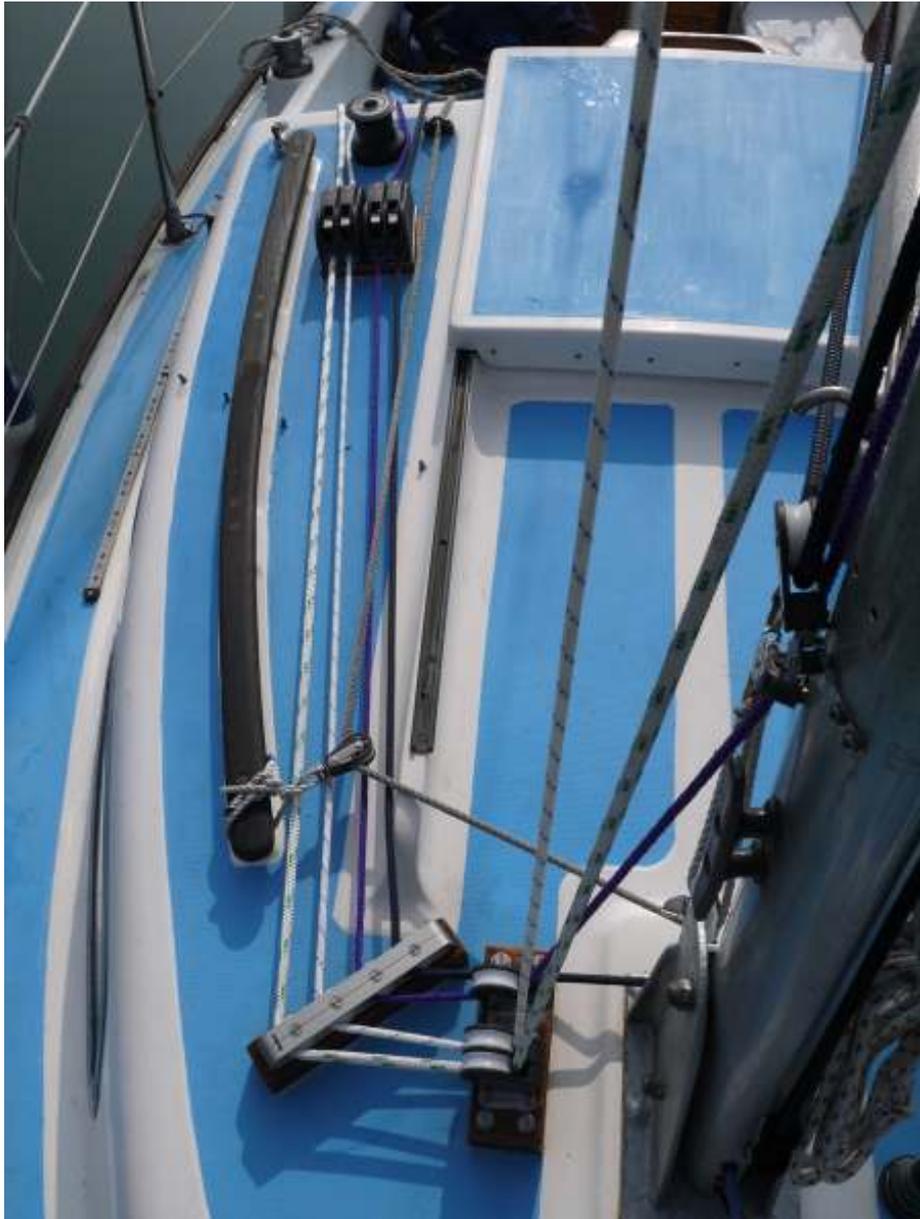


*Leading No2 reefing line to the stbd side, over the mast base.*



*Bolts securing the 'stand-up' block on the port side, which leads No2 reefing line to the deck organiser*

To lead the main halyard, topping lift and No1 reefing line from the vertical to the horizontal I mounted one single and one double Barton upright blocks on a 'bridge' made from two pieces of 20mm oak glued together. The blocks are bolted to the top piece, heads of the bolts at the bottom to leave the bottom face flush, before the two parts are glued together. The idea here is to reduce the number of drill holes which go through the main transverse supporting member under the mast. The combined unit was mounted by 4 M8 bolts at the corners, positioned to penetrate either side of the transverse member.

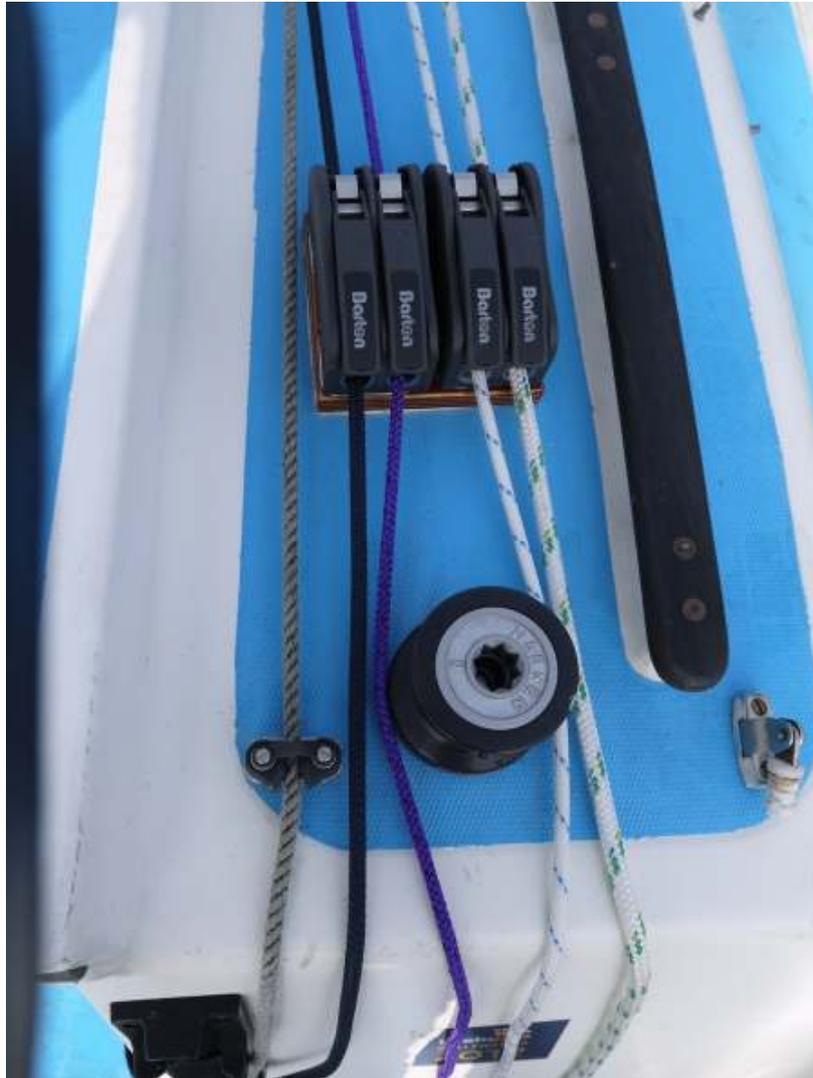


*Visible at bottom right – the 'bridge' with two upright blocks*

A simple solution for the kicking strap presented itself; a leading block tied to the stbd grab rail and the line led aft, over the other lines, to a simple jamming cleat on the coach roof inboard of the rope clutches. I removed the jamming cleat previously attached to the kicker block, otherwise it would jam

before the new one and negate the idea of controlling the line from the cockpit.

I used 2 x Barton DO550 double rope clutches (part number 81501), mounted close together on a piece of well varnished ply. The winch is a Harken, taken from the mast. The jamming cleat a simple Barton 'K' Cam cleat, with a 'bridge' over the top to restrain the line from straying.



*Rope clutches, winch and 'K' Cam cleat*



*Securing points of the two double rope clutches (right) and the Harken winch.  
Note – I tried to make the penny washers sit neatly together by filing off one edge but it proved too difficult to line them up with sticky fingers, looking upwards though varifocals, whilst straining my neck!*



*Winch bolts and, visible at the top, the bolts securing the K Cam cleat.*

All bolts were secured with appropriate penny washers and liberal quantities of Sikaflex top and bottom.

### Problems and Tips

- I was rather careless in cutting the headlining – the areas I chose to remove were, in some cases not quite where I eventually wanted to mount the deck fittings, meaning I had to cut some more away. Don't cut until you are sure where you want to mount the various items.
- A couple of bolts came through rather too close to the transverse supporting member, making it difficult to get a penny washer over it and difficult to offer-up a nut and get it to bite. Plan the holes carefully.



*The aft bolt of the port-side deck organiser has come through too close to the supporting beam making it impossible to use a washer!*

- Watch out for the lead and orientation of the various components so as to give the best lead for the line. When fitting two Barton single-line reefing systems, space on the mast for two tang blocks and two bulls eyes, can be in short supply, especially if you already have cleats and other fittings in place. You may want to move cleats which are in the way.
- I ended up with one 'stand-up' block surplus to requirements. One comes with each single-line kit, on the assumption that you want to lead only the reefing line aft. In my case I wanted to lead everything aft and used an upright block for the No1 reefing line – hence the 'stand up' block being spare. Tip, don't buy the components until you are sure what you want. My solution for leading No2 reefing line across the mast foot did not firm up until rather late in the process.

- You can buy all the Barton components as individual items, so depending upon your solution it may be worth calculating whether this is cheaper or more expensive than buying the kit. You can get fitting instructions from the Barton Marine web site.