

Swedish Lass Mooring 2024

The bank between SH buoys #27 & #29 has been extending for some time and the existing mooring was becoming unusable due to silting. Chart datum shows 2.6m drying height. This was confirmed by observation using the Brightlingsea tidal curve. SL draws 1.3m therefore needing at least 4m of tide to leave. This has been observed in practice. The net result being SL is neaped for a lot of the tide cycle. The existing mooring chains were becoming badly worn and the decision was made to bite the bullet and go for a mooring move in search of deeper water. This is not meant as a 'How to' but as a record of my thoughts and actions during the process of amending my mooring.

Constraints

The existing mooring buoys and tackle are currently shared with boats fore and aft. I will therefore need to provide my own buoys, risers and additional ground tackle.

Highest Astronomical Tide is 5.7m (Brightlingsea), surge tides can be higher.

Deep mud is needed to remain upright at low tide, SL is 9m, 4tonnes and has a long keel.

Starboard hand buoy #29, denotes the channel and the maximum move towards deeper water.

Existing sinkers are not in line.

There is not enough water in the channel to remain afloat, nor enough mud to remain upright.

Any move into the channel would impede navigation.

Solutions

In June 2023 Paul Kelly at EYE was contacted to discuss solutions. These were his suggestions:-

“ Re our discussion about a 2 point (fore & aft) mooring, please find the following product suggestions and prices:

Option 1:

2 x 50kg Admiralty Pattern Anchors at £127.37 each = £254.74

2 x BS25x28 Self-Colour Dee Shackles at £9.43 each = £27.56

1 x Shot Length (27.5m/90ft) of 19x75, G40 Self-Colour Ground Chain at £11.84 per mtr = £325.60

2 x 5m Lengths of 16x80 Self Colour G40 Riser Chain at £7.88 per mtr = £78.80

2 x BS19x22 Galvanised Dee Shackles at £5.54 each = £11.08

2 x CC2 Inflatable Buoys c/w Steel Centre and Top Swivel at £48.05 each = £96.10

Total ex vat = £793.88

Total inc vat = £952.66

**N.B. The shot length of ground chain quoted can be shorter if you require. I would suggest the minimum length be 20m.

Option 2:

2 x 250kg Railway Wheel Sinkers c/w Tail Chain at £187.50 each = £375.00

2 x BS22x25 Self-Colour Dee Shackles at £6.75 each = £13.50

2 x 5m Lengths of 16x80 Self-Colour G40 Riser Chain at £7.88 per mtr = £78.80

2 x BS19x22 Galvanised Dee Shackles at £5.54 each = £11.08

2 x CC2 Inflatable Buoys c/w Steel Centre and Top Swivel at £48.05 each = £96.10

Total ex vat = £574.48

Total inc vat = £689.38

I hope all the above information is useful. If you have any further queries, please do not hesitate to contact me.

Best regards Paul Kelly “

Option 1 was a non starter as the boat would sit on the chain as it dried. Option 2 was considered but the logistics of moving 250kg (twice) was impractical. Transit wheels and tyres were considered as an alternative but I have prepared sinkers and dug moorings before. I was not keen on repeating the performance. Wheel sinkers would also need to be purchased and modified. Environmental concerns were also considered. Further research into alternatives revealed the eco moorings being developed for use on the south coast and the potential of using a screw pile instead of a sinker.

As I want the mooring to be secure for the foreseeable future I have tried to over engineer the chosen components. As a result I am not anticipating further major expenditure for at least 5 years other than the usual annual checks. The final total feels high but amounts to a brand new mooring. If I had existing equipment, such as buoys, or sourced used items, this would have brought the price down, as would alternative sinkers. However the outlay should be considered over the planned life of the mooring. Refurbishment of the existing mooring would have been limited to the cost of replacing the risers, if all other components were ok, for no tidal benefit.

Railway wheels and concrete blocks are used locally by the harbour (1m of tide)



Planning

A deep and extremely muddy examination was made of the existing sinkers which were secure and had good rising chain deep in the mud.

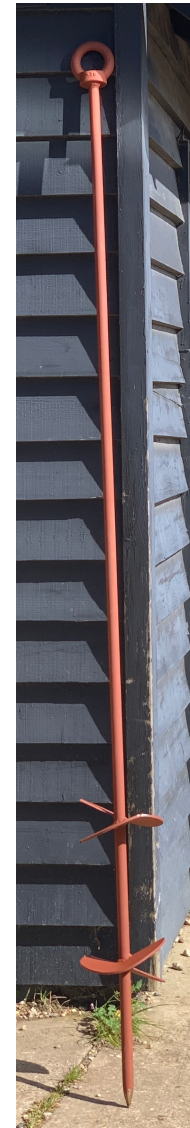
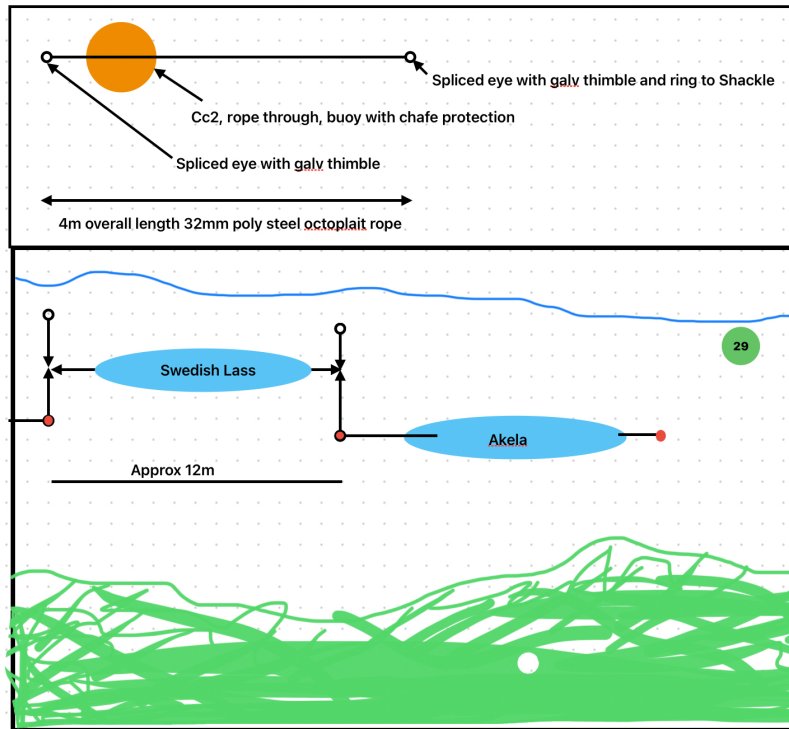
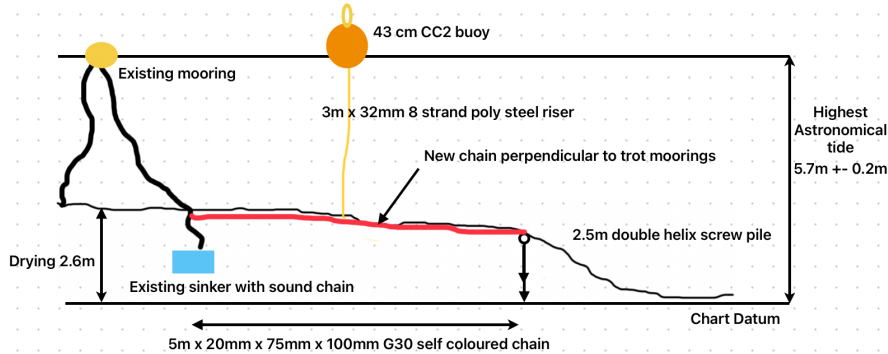
Probing the undisturbed mud nearer the channel met with little resistance for at least 1.5m.

Both fore and aft sinkers would be used again. New chain would be shackled on to the sound rising chain deep in the mud.

Given the depth of soft mud, a long screw pile would be needed. 2.5m with a large eye and double discs was chosen. (See below).

The 32mm polysteel riser has a breaking strain of 17000 kg and has less tendency to wear in the muddy waters of the Colne compared with the existing chain. Based on repairs I have previously done with 19mm long link chain it seems to have a 3 year lifespan when used on the riser, longer if interwoven with rope

Swedish Lass, modified mooring arrangement 2024



Purchases

All materials are available from EYE at Levington, (April 24 prices inc VAT) I spliced and assembled the components ready to install as time, tide and weather permitted.

2x5m lengths of G30 SC chain 20x75x100mm (40kg+ each)	£144
2x6m lengths of 32mm polysteel 8 strand rope	£36
2x32mm bs464 thimbles	£16.80
2x32mm federal thimbles	£21.60
2x22x150 drop forged rings	£18
2x 5m wear sleeve	£9
2x43cm bar buoy	£96
6x20mm galv D shackles	£36
2x2.5m helix anchors (25mm bar, 200mm discs). (11kg+ each)	£192

Total £570 including VAT (ouch!)

Execution

As with all mud activities, my safety is paramount. My chosen kit is to wear a wetsuit with wetboots, overalls, gloves and buoyancy aid. I have found wellies and waders tend to stick in the mud. The overalls make the cleanup easier at the end. I take a handheld vhf and phone in dry bags. I also ensure someone on shore knows where I am and check in with them on my return.

I have a reputation for sinking into the mud! When moving about, the more I can spread my weight the easier it is. Hands and knees are easier than walking and crawl boards are better still. I know everything will be caked in mud at the end and a good hose down of everything, including me, will be inevitable. My dinghy is my lifeline, I always keep it close even if it means hauling it up over the mud before I start work.

Installation

Trip 1 & 2 Existing sinkers (This can be done in one, but I planned for two).

I took the ground chain and a shackle in the dinghy on a falling tide, this means I don't have to haul the dinghy up a slope. I also have more time to search around, or for, the existing sinker. I dug down to the sound chain on the existing sinker and secured one end with a moused shackle. I back filled the hole and laid the chain out at 90 degrees towards the channel. It is useful to mark the attachment point for the riser with a light buoyed line. The free end was marked with a stick. This gives the location for the pile.

Trip 3 & 4 Installing piles (This was actually done in one, physically demanding, trip).

I took the screw pile, shackle, crawl board, pipe wrench and a 1.5m turning bar and installed the pile at the end of the ground chain. Before driving the pile I double checked that the chain would reach so that the shackle could be attached easily. The final location must also be clear of any boat drying out. I used the pipe wrench initially to drive the pile as the eye was too high to reach and finished by using the turning bar. The pile finished level with the existing mud surface. I then attached the ground chain with a shackle and wear sleeve. I finished by mousing the shackle pin. It would have been useful to have placed the piles roughly whilst afloat rather than drag everything over the mud. They took about 30 minutes each to screw in. At 2.5m the last half metre was a bit of a chore. Easier with two!



Completed ground chains (1m of tide)

Trip 5 Attaching buoys (This can be combined with the above). Finally I took the assembled buoys and risers and attached the rings to the ground chain with moused shackles as close to the mid point as possible to get the correct alignment with the ebb tide. I usually pick up the mooring on the outgoing tide facing upstream, this allows the boat to settle better. It also allows me to leave the mooring more easily on the flood by putting the helm over towards the bank swinging the stern into the channel. After ensuring all is OK, I fitted the mooring bridles and marrying line. Job done, beers earned!

Conclusion

Relaying the mooring will bring me at least 3m nearer the channel, reduce the amount of lateral travel and gain about 1/2m of depth. Roughly another hours sailing at springs. It should also allow the ridge that builds up on the outside to subside and be carried away by the river flow. There is still enough mud to remain upright.

Before & After



Due to the different alignments of the existing sinkers, I should have considered an extra metre of ground chain on the upstream end. However it would have been almost unmanageable to move around. In the future it is still possible to extend this, if required, by shackling on an additional lengths perhaps even unscrewing the pile and relocating it. A more likely procedure would be to add a further pile and ground chain.

There are various ways of splicing 8 strand and I over ordered extra length to allow for the learning curve. EYE will splice if required but I enjoy playing with bits of rope. There was some waste but it was not excessive, about 2m in all. A hard eye was fitted on both ends but in hindsight a soft eye would be better on the buoy as it will only have rope attached to it using a secure knot. Either an anchor hitch or a spliced eye in the form of a barrel hitch.

Moving a dinghy and crawl board with contents into position is much easier on the ebb tide when everything is still floating. Whilst I completed this single handed an extra pair of hands would be useful.

Installing screw piles is just as messy as digging in traditional sinkers, without the muddy shovels. Wearing overalls over the wetsuit makes personal cleanup a lot quicker.

It is important to check the mud depth first for obstructions using a long rod in case there are old sinkers or chain lurking. Pile moorings are still relatively hard work, but less so than shovelling a cubic metre of mud for each sinker. I was able to install two piles in an hour and a half. I was initially worried that 2.5m was excessive but in practice both piles were fully engaged. On the downstream pile, which was nearest the channel, I could also feel it boring into the gravel below the mud. As with the normal sinkers I will still allow time for the mud to settle before putting full load on it. Ignoring the securing effects of the mud, the new mooring has additional ironwork amounting to 50+kg at each end which is heavier than my normal anchor setup.

Since installing the piles there has been a small amount of scouring exposing the eye but if it becomes an issue the pile can be driven further in. There is clear evidence that SL is moving nearer the channel and digging a better hole.

Having long heavy ground chains across the river secured by screw piles is definitely a viable technique for others to use and allows for easier alignment of buoyed risers with the river flow. Whilst installation using handraulic power is practical, a powered auger would help greatly if a number of piles were to be laid. With a suitable extension they could even be driven in from the workboat.

Completed mooring with buoys, fine adjustment of the bridles will be done at springs. The forward ground chain sharing the load and views of the fore and aft installation.



Sources

<https://www.boatgeardirect.co.uk/products/>

<https://www.gsproducts.co.uk>

<https://www.ancrest.com/upload/pdf/Ancrest-UK-GC-standard.pdf>

<https://helixmooring.com/round-shaft-anchors/> Nearest equivalent H0866 single disc gives 1.5 tonne hold when 2m deep, a double disc and extra 1/2m should increase holding beyond this.