



COURAGEOUS SAILING

# Questland

A Reference for Rigging, Storing, and Troubleshooting RS Quests

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Last Updated: July 1, 2018

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# Rigging

## Sails

### Jib

Jibs are normally left furled around the forestay, covered by a jib sock. Before sailing, uncleat the spin halyard, lower and remove the sock, and tie the halyard to the silver ring on the mast.

To rig a jib from scratch, do the following:

1. Attach the tack of the jib to the tack-hook on the bow
2. Attach the end of the jib halyard (blue) to the furling unit on the forestay using an overhand
3. Attach the head of the jib to the furling unit on the forestay
4. Begin to hoist the jib (the halyard comes out of the port side of the mast, one foot above the gooseneck)
5. As each plastic jib hank is raised from the deck, pause to slot the hank onto the forestay
6. Cleat the jib halyard once the jib is fully raised
7. **Tension the forestay** by snapping the metal tension clip into place (p. 55)
8. Fasten the jib's velcro flap over the tension clip
9. Bring the jib sheets back between the mast and the shrouds, pass each through its bull's-eye fairlead, and tie a stopper knot
10. Furl the jib by pulling the red furling line (p. 47)

When ready to sail, unfurl the jib by uncleating the red furling line and pulling a jib sheet.

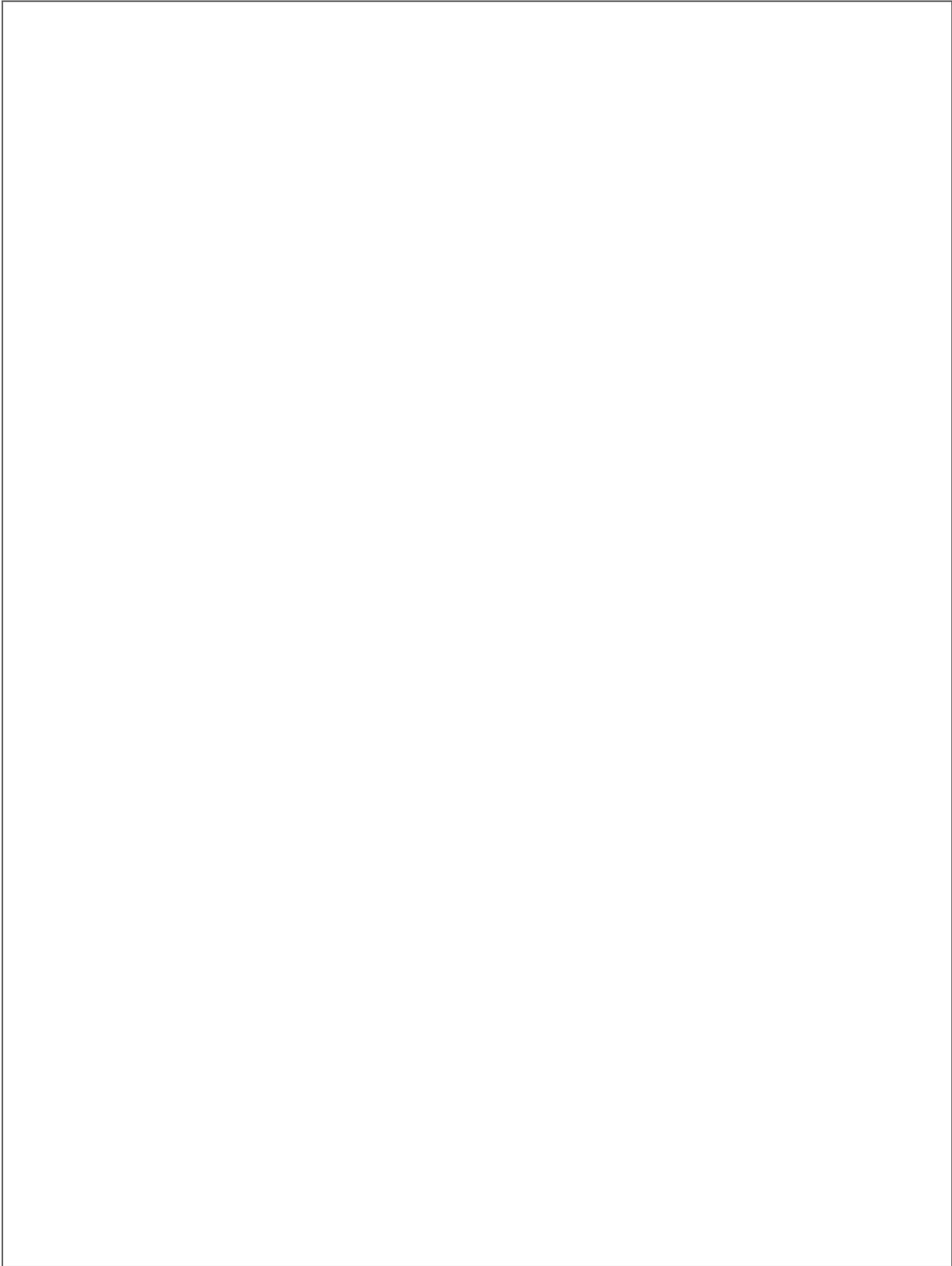
### Spinnaker

1. Tie the end of tackline (*not* the bobble) to the tack of the sail using a bowline (p. 6 - 7)
2. Uncleat the spin halyard
3. Tie the end of the spin halyard to the head of the spin using a bobble knot (pp. 9-10)
4. Untie the downhaul from the tack bar and lead through the bow opening (pp. 11 - 12)
5. Pull some slack into the downhaul
6. Lead the downhaul through the metal ring that's near the foot of the spin (p. 13)
7. Tie the downhaul to the white canvas X using a bowline (pp. 14 - 15)
8. Pull the downhaul from the cockpit to draw the spinnaker into its sleeve
9. Pass both ends of the spin sheet through the clew and tie a luggage tag (pp. 16 - 17)
10. Lead each spin sheet through its spin block, making sure the arrow on the block points inboard -- the block should ratchet when pulled inboard under pressure (p. 18)
11. Tie the ends of the spin sheets together in a water knot (pp. 19 - 23)

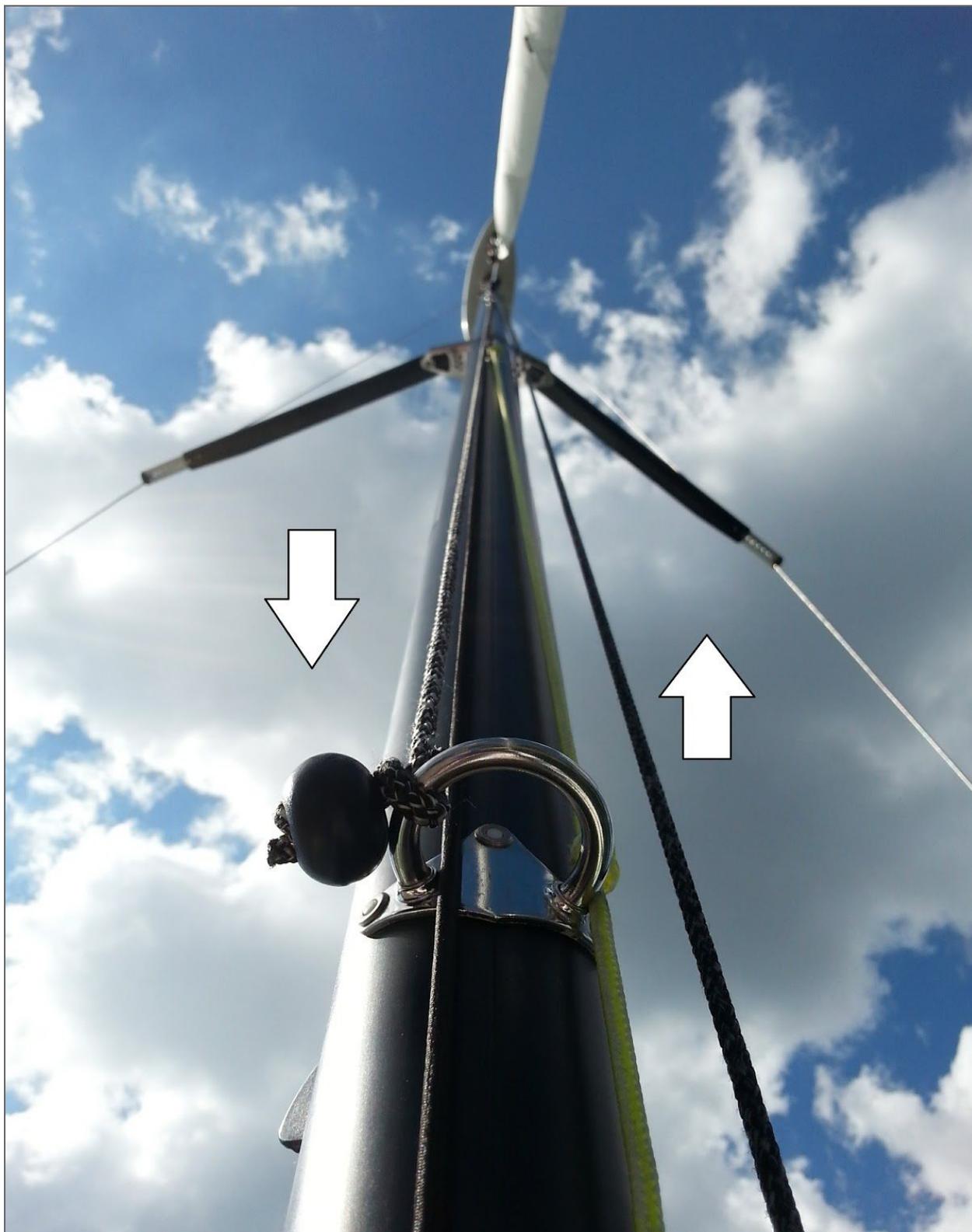
Attaching the Tackline (1 of 2)



Attaching the Tackline (2 of 2).



Check Spin Halyard goes up to Port of Everything, comes down to Starboard



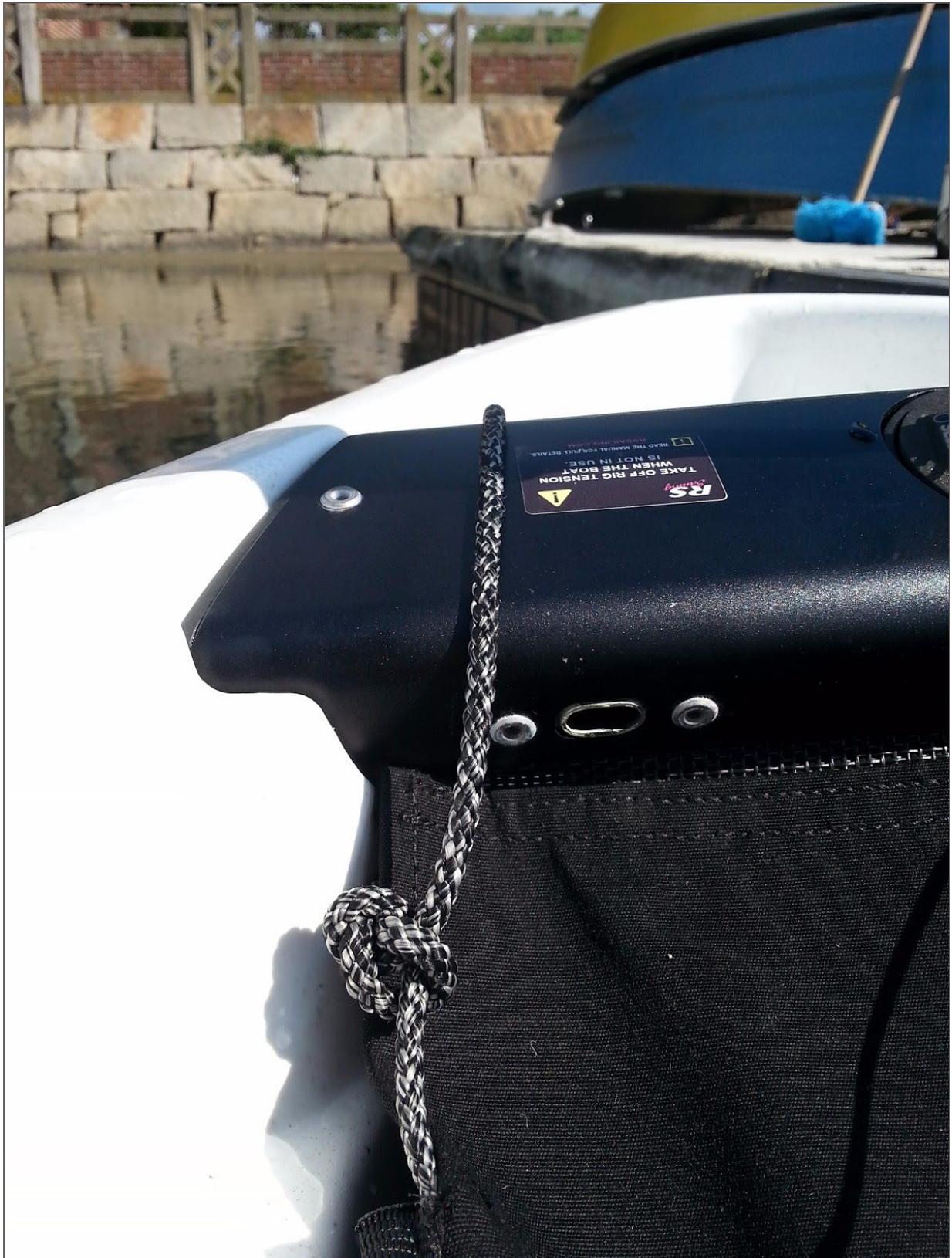
Attaching the Head of the Spinnaker (1 of 2)



Attaching the Head of the Spinnaker (2 of 2)



### Locating the Downhaul



### Leading the Downhaul through the Bow Opening



Leading the Downhaul up through the Silver Ring



## Leading the Downhaul up to the Canvas X



## Tying the Downhaul to the Canvas X



## Attaching the Spin Sheets to the Clew - Luggage Tag

**Tip:**

The spin sheet is too thick to pass a bight (a doubled over section of line) through the clew. Instead, pass the ends of the sheet through the clew, pulling the lines equally until the center of the sheet forms a bight (see picture above).

To finish the luggage tag, pull the ends of the sheet through the bight.

**Note:**

The *luggage tag* goes by many names, including *cow hitch* and *lark's head*.

Attaching the Spin Sheets to the Clew - Luggage Tag



## Leading a Spin Sheet through its Block



Tying the Spin Sheets Together - Water Knot (1 of 4)



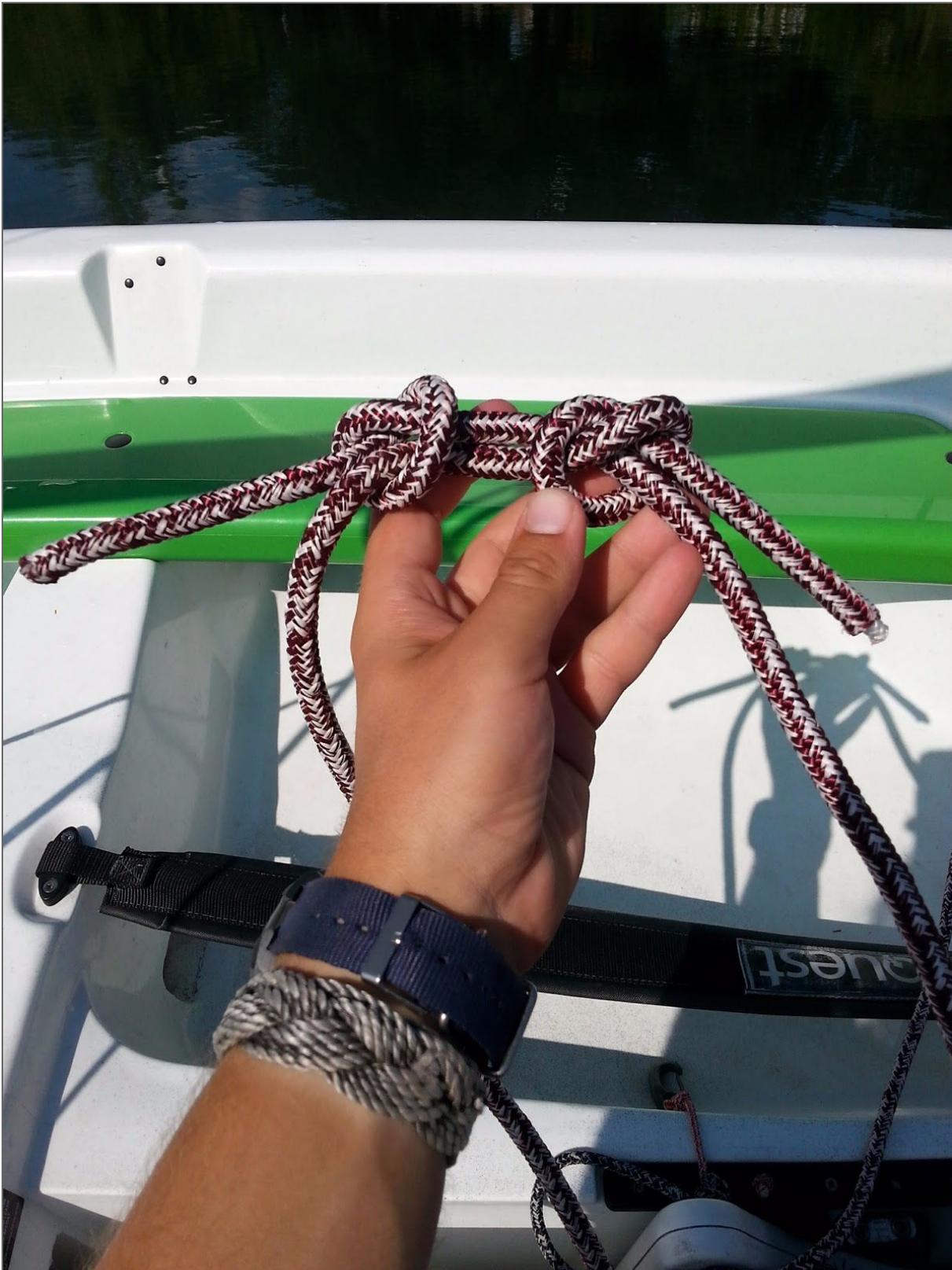
Tying Spin Sheets Together - Water Knot (1 of 4)



## Tying Spin Sheets Together - Water Knot (2 of 4)



Tying Spin Sheets Together - Water Knot (3 of 4)



## Tying Spin Sheets Together - Water Knot (4 of 4)



Rigged Spinnaker



## Mainsail

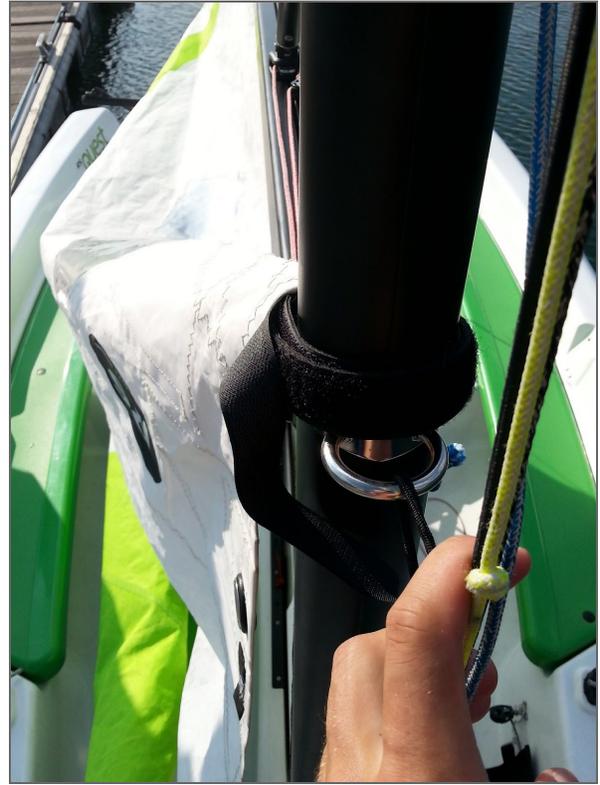
1. Remove the mainsail from its sail bag
2. Tie down the sail bag
3. Slide the tack slug into the groove in the mast
4. Slide the clew slug into the groove that  $\frac{3}{4}$  of the way down the boom
5. Attach the outhaul (page 27)
6. Unroll the mainsail completely
7. Lower the boom by uncleating the main halyard (the black line coming out of the starboard side of the mast, just above the gooseneck)
8. Untie the main halyard from the end of the boom
9. Tie the main halyard to the head of the mainsail using a bobble knot (pages 29 - 30)
10. Feed a few feet of mainsail into the mast
11. Untie the slip knot that's in the mainsheet near the mainsheet block and uncleat the gnaw
12. Raise the mainsail while the Quest is head to wind (stand on bow while raising)
13. Fasten the tack strap around mast (over main halyard, under other lines) (page 26)
14. Find the cunningham, the line attached to the starboard side of the gooseneck
15. Pass the cunningham from starboard to port through the cringle a foot above the tack of the mainsail
16. Take the slack out of the cunningham. Leave it cleated (page 28)
17. Coil the main halyard and jib halyard. Stow them in the velcro pocket (page 31)

## Steps of Reefing

1. Do steps 1 - 11 of rigging the mainsail (see above)
2. Remove the red reefing outhaul from the velcro pocket of the spinnaker sleeve
3. Tie one end of the reefing outhaul in a bowline to the silver ring at the end of the boom
4. Lead the reefing outhaul through the reefing clew from port to starboard (page 32)
5. Lead the reefing outhaul down through the ring on the starboard side of the boom
6. Run the reefing outhaul forward to the clam cleat on the underside of the boom (p. 33)
7. Hoist the mainsail until the reefing tack-ring is level with the gooseneck
8. Slip the starboard side reefing tack-ring onto the silver hook
9. Tighten the main halyard
10. Tighten and cleat the reefing outhaul. Place the loose line in the pouch on the mainsail
11. Coil the loose line from the halyards, placing the coils in the same pouch
12. Pass the cunningham through the cringle above the tack. Cleat it off (page 28)
13. Remove the two reefing ties from the velcro pocket of the spinnaker sleeve
14. Pass the reefing ties through the reef points along the new foot of the sail
15. Fold in the corners of the loose mainsail and roll it up on the starboard side of the boom
16. Secure the roll by passing one end of each reefing tie under the loose foot of the sail (*not under the boom*). Tie the ends together using square knots

Note: If you're missing a reefing outhaul, you can still reef. Slide the reefing clew slug into the boom and secure the reefing clew with the normal outhaul.

## Rigging the Tack Strap



### Steps:

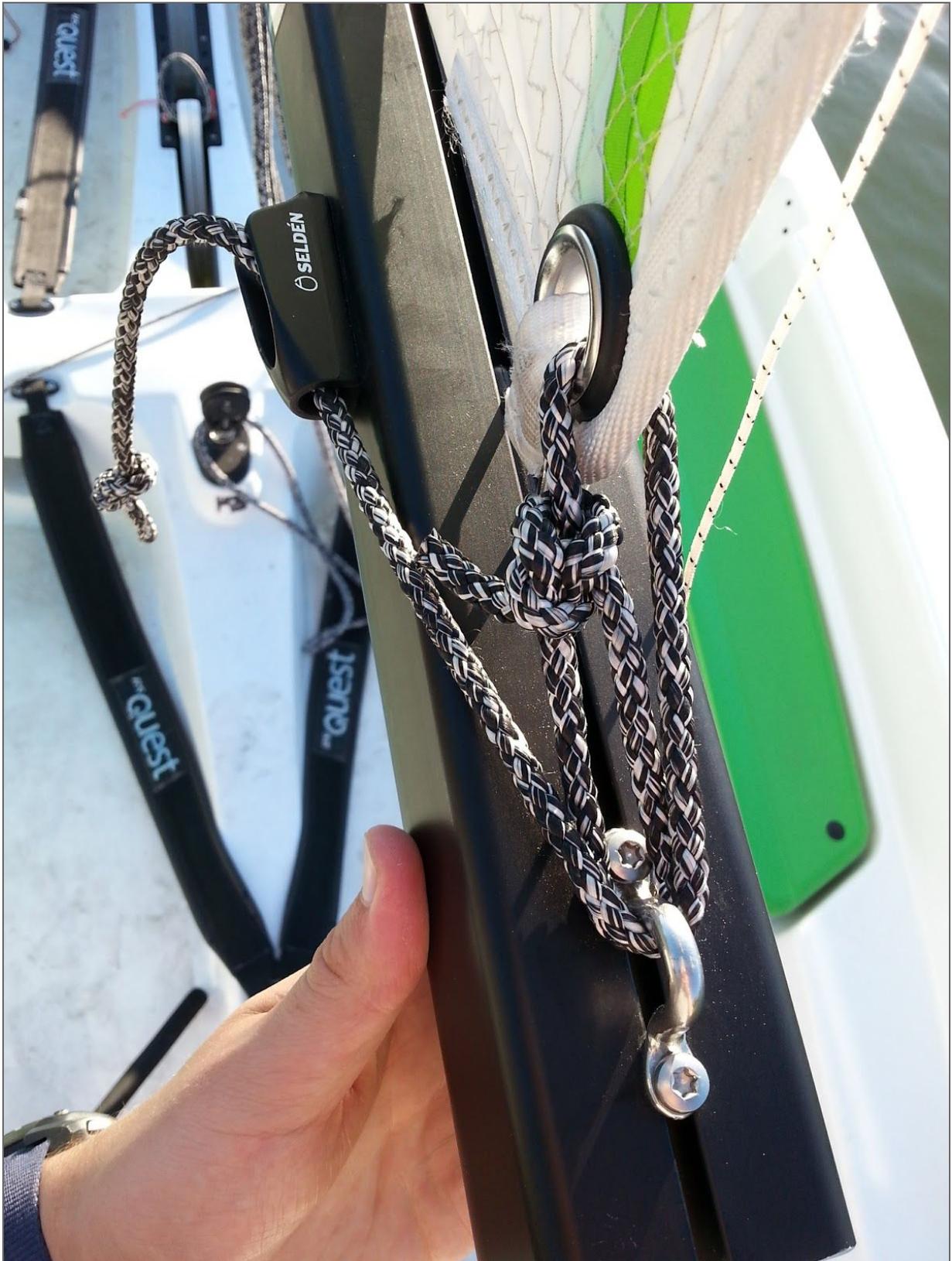
1. Pass the longer velcro strap around the mast -- outside the main halyard, inside the other lines
2. Lead the longer strap through the rings and velcro it back on itself
3. Velcro the shorter strap on top of the longer one.

### Notes:

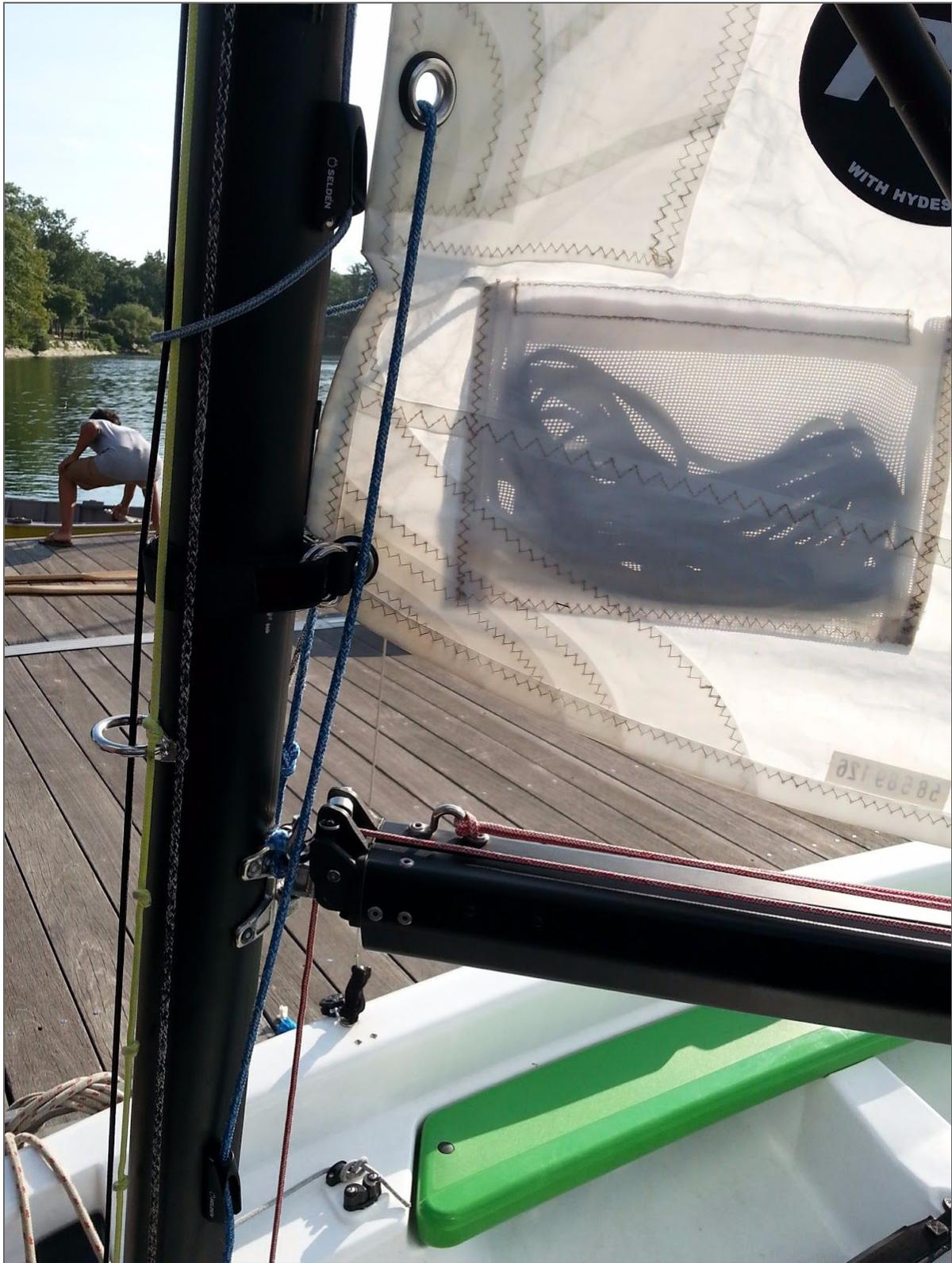
The tack strap should go *over* the main halyard, and *under* the other halyards and bungees (see photo to left).

The strap must be above the silver mast ring.

Rigged Outhaul



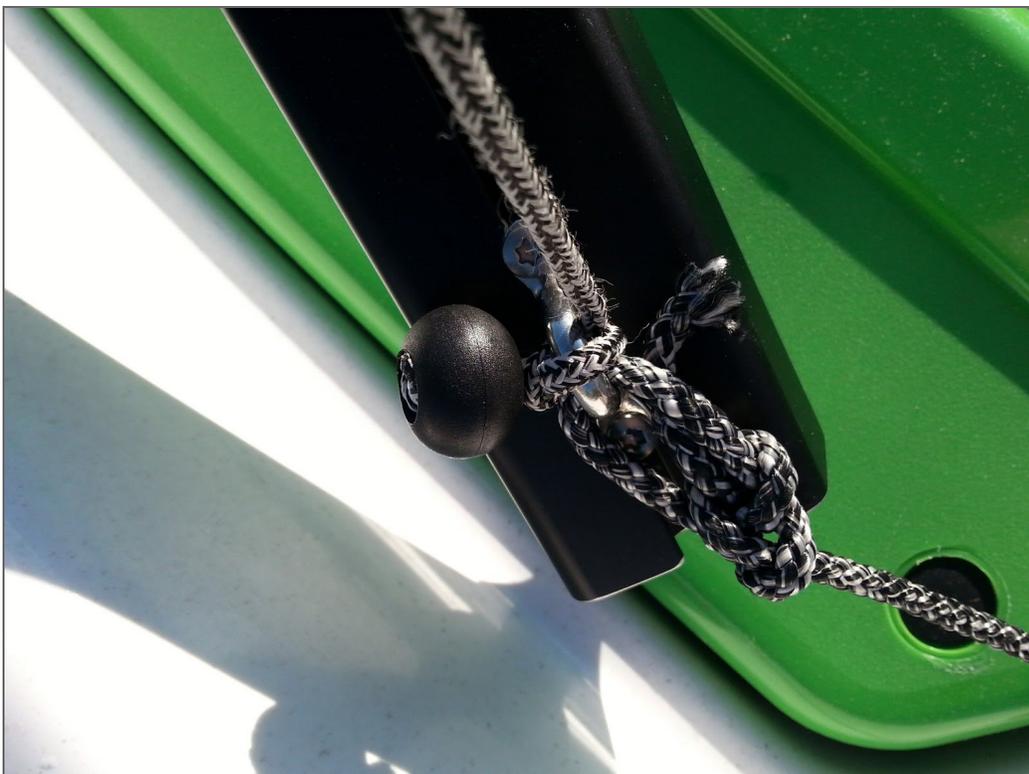
# Rigged Cunningham



Tying a Bobble Knot (1 of 2)



Tying a Bobble Knot (2 of 2)



## Line Control

There is a pouch on the starboard side of the mainsail which holds the halyards. Once the mainsail is raised, coil the jib halyard and place it inside this pouch. Then, coil the main halyard, place it inside, and velcro the pouch shut.

**Remove the halyards from the pouch before approaching the dock.** This allows the main halyard to run freely when sailors drop the mainsail. (Removing the jib halyard before docking is optional but recommended -- it saves a step of derigging the mainsail.)



Rigged Reefing Outhaul (1 of 2)



Rigged Reefing Outhaul (2 of 2)



Starboard View of Reefed Quest



Port View of Reefed Quest



## Blades

### Centerboard

Grasp the rope centerboard handle and pull aft to lower the centerboard. Don't worry about clipping the board in place.



### Rudder

Make sure there is a rudder safety line connecting the rudder to the hull. Once the boat is in the water, line up the pintles with the gudgeons. There should be a satisfying thunk/click as the pintles slide into place.

Tip: It's easier to first line up the top pintle, as it's longer than the bottom one. Then, keeping the top pintle just inside the top gudgeon, line up the lower pintle.

# Derigging

## Sails

### Jib

1. Leave the jib up and the forestay tensioned
2. Furl the jib just to the point that it is fully furled. Leave the furling line cleated
3. Re-cleat both jib sheets
4. Uncleat the spinnaker halyard (cleat is located on port edge of centerboard trunk)
5. Untie the end of the spinnaker halyard from the spinnaker ring
6. Find the top of the jib sock (the end further from the black plastic clips)
7. Attach the spinnaker halyard to the top of the jib sock using a bobble knot (p. 29 - 30)
8. Raise the jib sock<sup>1</sup>, zipping it around the jib. Stop once the sock is at the top of the jib
9. Zip the lower section of the jib sock upwards
10. Fasten the black plastic clips -- one above, one below where the jib sheets exit the sock

#### Note:

- (1) Pull the spin halyard from the mast, then take up the slack through the spinnaker cleat. This prevents the bowsprit from extending. (see page 41 for pictures)

### Spinnaker

1. Untie the water knot that connects the spinnaker sheets
2. Untie the halyard from the head, and retie it onto the ring on the mast using an overhand
3. Untie the downhaul and retie it around the tack bar (so it doesn't get pulled through the spinnaker sleeve) (p. 11)
4. Untie the tackline
5. Bundle the dry spinnaker into its bag, starting with the center of the sail, and ending with the three corners
6. Leave the sheets attached. Store them inside the bag if dry, hanging out if wet

### Mainsail

1. Undo the outhaul from the clew. Keep one end tied to the silver ring on the boom
2. Undo the main halyard. Attach it to the end of the boom with a bobble knot (p. 29 - 30)
3. Undo the cunningham from the sail. Keep the cunningham attached to the boat.
4. Undo the tack strap from around the mast. Keep the tack strap on the sail
5. Roll the Mainsail (see the next two pages for pictures of how to fold the head)

### Rolling the Mainsail (1 of 2)

Rolling this square-topped mainsail requires two folds near the head. (Cont. on next page.)  
First, fold the head so the two battens rest on each other and lie parallel.

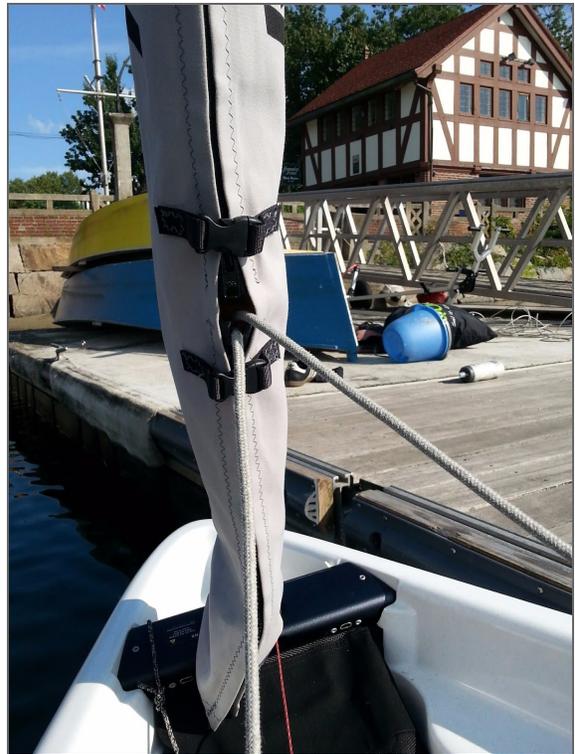
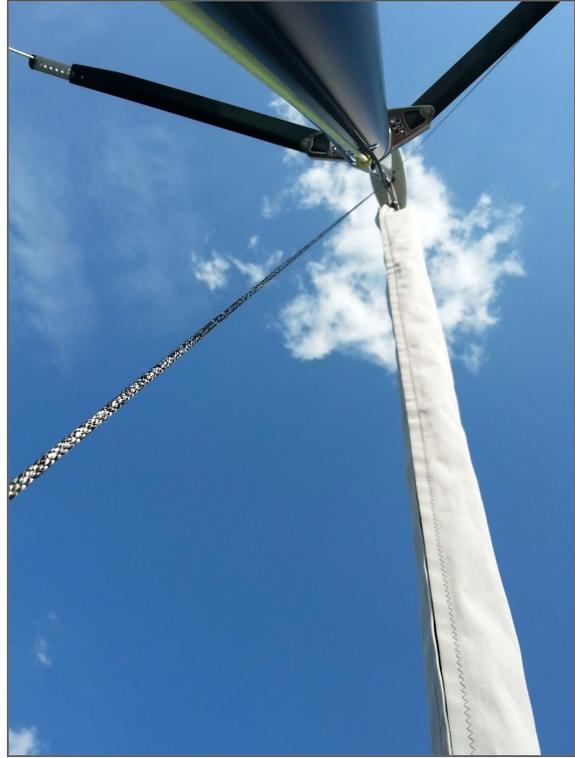
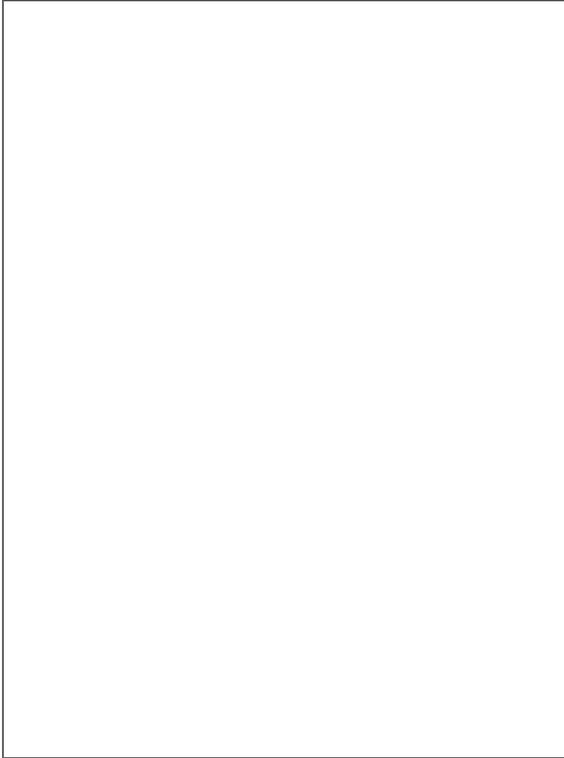


## Rolling the Mainsail (2 of 2)

Second, make another fold perpendicular to the length of the sail. This allows for a straight roll.



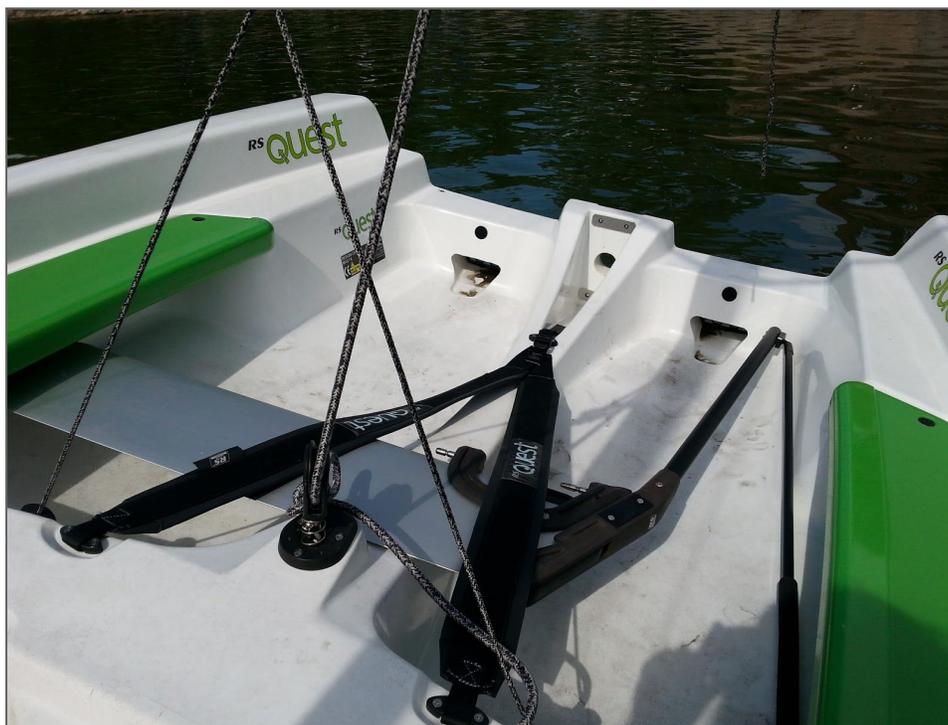
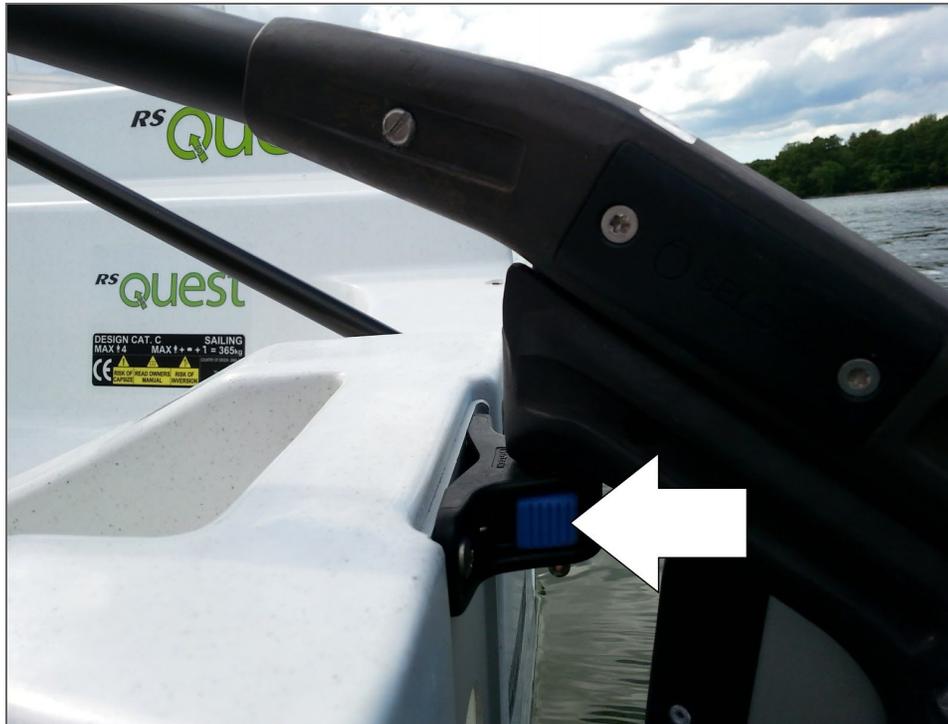
### Attaching the Jib Sock



## Blades

Raise the centerboard. The friction pads will hold it in place.

Pull the rudder straight up while pressing the blue tab inboard. Store under the hiking straps.



# Storage

## Charlestown

### Sails

#### Jib

1. Leave the jib furled around the forestay
2. Raise the jib sock using the spinnaker halyard, zipping the sock as it's raised (p. 38, 41)

#### Spinnaker

1. Keep the spinnaker sheets attached to the sail
2. Store the (dry) spinnaker and sheets in the spinnaker bag
3. Store the spinnaker bag in one of the Quest dockboxes

#### Mainsail

1. Store the mainsail rolled in its bag (pages 39 - 40)
2. Cinch the opening of the bag closed
3. Leave the bag on the starboard side of the Quest, beneath the black bar to which the mast is attached

### Boats

1. Leave the rudder safety line attached
2. Remove the rudder and store it beneath the hiking straps (page 42)
3. Raise the centerboard
4. Pull the Quest onto the dock until the tie-down lines are abeam of the jib cleats
5. Attach the main halyard to the ring at the end of the boom (pages 29 - 30 for knot)
6. Raise the main halyard until the boom is at a right angle to the mast
7. Tighten the mainsheet, tying a slip knot at the mainsheet block -- **don't over-tighten**
8. Remove the jib sheets from the fairleads
9. Lead the tie-down lines through the jib fairleads
10. Leave the Quest cleated securely to the dock tie-down lines

## Jamaica Pond

### Sails

#### Jib

Leave the jib furled around the forestay, with its sheets cleated

Raise the jib sock using the spinnaker halyard, zipping it closed as it's raised (p. 38, 41)

#### Spinnaker

1. Keep the spinnaker sheets attached to the sail
2. Store the (dry) spinnaker and sheets in the spinnaker bag
3. Hang the spinnaker bag from the yellow hook to the right of the workbench

#### Mainsail

1. Store the mainsail rolled in its bag (pages 39 -40)
2. Bring the mainsail bag up to the boathouse
3. Hang the bag above the front desk

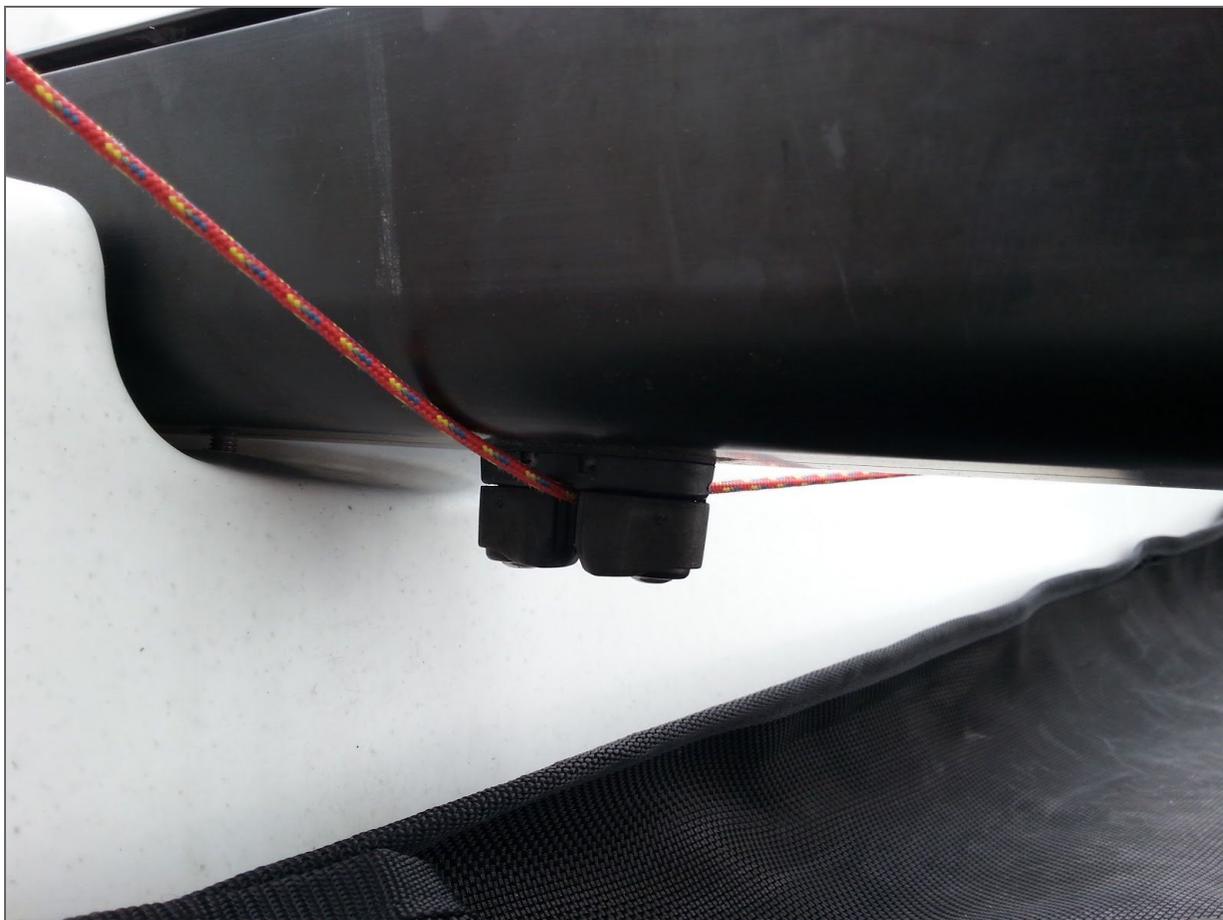
### Boats

1. Attach the main halyard to the ring at the end of the boom (pages 29 - 30 for knot)
2. Raise the main halyard until the boom is at a right angle to the mast
3. Tighten the mainsheet, tying a slip knot right at the mainsheet block -- **don't over-tighten**
4. Leave the rudder safety line attached
5. Remove the rudder and store it beneath the hiking straps
6. Raise the centerboard
7. Hang CDs along the boom to spook the cormorants
8. Tow the Quest out to a mooring
9. Leave the Quest tied securely to the mooring

# Quest-specific Quirks

## Roller Furler

The furling line runs to an upside down cam cleat on the port side of the boat. To uncleat, pull the furling line aft and down.



**Rotate the clew counter-clockwise around the forestay to load the furling drum.**

If the jib doesn't fully furl or doesn't fully unfurl, the furling drum has either too much, or not enough line wound up inside. If the jib won't fully furl, it's running out of line in the drum.

To load the roller furler, first uncleat the furling line. Untie any stopper knots in the end of the jib sheets. Loosely coil the jib sheets. Then, holding the coil, rotate the clew counterclockwise around the forestay several times. (Notice more of the furling line being pulled *into* the drum.) Finally, lead the jib sheets back to their cleats.

## Gnav

Quests have a gnav (pronounced “gee-nav”) in place of a boomvang. The term *gnav* isn’t an arcane acronym -- it’s simply *vang* spelled backwards. This is fitting, as a gnav works like an inverted vang.

The top of the gnav unit is fixed to the mast, on the port side of the mast track. The bottom of the gnav unit can slide along the boom. Tightening the gnav pulls the bottom of the gnav unit closer to the mast. This *pushes* the boom down, tensioning the leech of the mainsail and reducing twist.

**Since the gnav is fixed to port of the mast track, the mainsail will always be raised to starboard of the gnav.** This is why we store the mainsail on the starboard side of the Quest in Charlestown.



## Beam Drainage Hole

Mentioning this feature serves mostly to satisfy curiosity. After a capsize, a stream of water drains from the side of the Quest that was lower. The water comes from the area beneath the end of the black bar to which the mast is attached.



## Rudder Safety Release

Quests have a safety release mechanism on the rudder. The rudder blade pops free and hinges upwards if it hits a rock, or it can be intentionally raised for beaching (see page 52). The same release is activated if a sailor pulls up on the tiller, which can easily happen by accident during a capsize.

### **To Fix the Rudder, Push the Tiller Aft, *Then* Down**

To lock the rudder back into place, the tiller must be lined up above a hook on the rudder casting. To line up the two, **push the tiller aft**. This causes the rudder blade to hinge downward. Then, still keeping pressure aft, **push the tiller downward**. The rudder and tiller should click together into their original position.

The following sequence of photos shows a rudder that has been popped loose -- and the rudder being returned to its normal position as the tiller is pushed first aft, then down.

Popping a Rudder Back into Place (1 of 2)



Popping a Rudder Back into Place (2 of 2)



## The Three Rudder Positions: Sailing, Beaching, Beached

Quest rudders can rest in three positions -- down, halfway up, and elevated. The rudder is held in these positions by the base of the tiller aligning with notches on the rudder casting. (See the grid of photos below).

The three rudder positions make it easier to beach a Quest. With the rudder and board halfway up, Quests have a shallow draft -- yet still maintain enough steerage to approach a beach while making upwind progress. Once close to shore, the skipper can elevate the rudder (and the crew fully raise the centerboard) before stepping into shallow water.

Down



Half Up



Elevated



# Maintenance

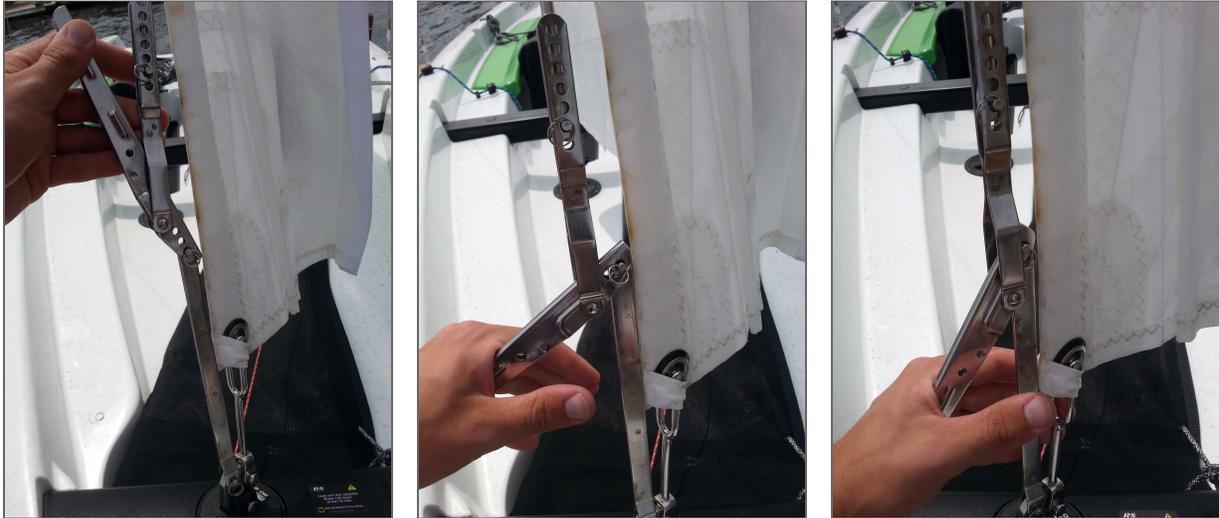
## Forestay Tension Clip - Self-Destructive (1 of 2)

When tightening the forestay tension clip on a Quest, the ring-ding indicated below can get caught. If this ring-ding breaks and the clevis pin comes loose, the forestay will separate from the bow -- the mast will fall aft, or (if the jib's attached) only be held up by the jib.



## Forestay Tension Clip (2 of 2)

As tension is applied, the top of the clip handle slots into a piece of the clip that looks like an upside down "Y". It's during this motion that the ring-ding at the top of the clip handle (see previous page) gets snagged. Over time, the ring-ding deforms enough to fall off the clevis pin.



### Solution

**Replace this ring-ding with a ½ inch cotter pin.** The cotter pin will secure the clevis pin in place without getting caught in the tensioning clip.

## The Rig Tension Problem

Furling the jib without rig tension causes the forestay and jib halyard to twist around each other. Over time, **this kinks the top of the forestay**. This can also happen even with rig tension, if your rig isn't tight enough or your jib halyard is too tight.

A simple solution would be to remove the jib while derigging -- but that extra step adds to rigging time and increases the chances of losing the jib head shackle. It's simpler to leave the jib furled around the (tensioned) forestay and protected by a jib sock, especially when the boats are in constant use.

### Current Compromise

**Youth Program: Leave the rig tension on during the week -- remove the jibs and let the rig rest over the weekend.**

**Adult Program: Store with the jibs removed and rig tension off, unless the Quests are being used more than once a week.**

**Jamaica Pond: Leave the rig tension on while moored -- rotate Quests spending time on the dock with their rig tension off.**

## Taping the Forestay Swivel

Quest forestays have two sections -- a fixed upper portion and a rotating lower portion. The two sections are connected by a swivel. The two ring-dings on this swivel should be taped to prevent them from snagging the spinnaker halyard.

This is easiest to do at the start of the season, before the masts are stepped.



## Caulked Seam near Spinnaker Sleeve on Bow

When pulled into the spinnaker sleeve during a douse, the spinnaker would sometimes jam in the seam between the tack bar and the hull. In Fall 2016, all of the bow seams in Charlestown were caulked with 3m 4200 Marine Sealant. Using painters tape around the seam made cleanup easier. Another solution would be to tape over the seam with electrical tape.



## Using the Drop Nose Pins

The gooseneck and gnav are each attached to the mast by a drop nose pin. To add or remove a drop nose pin, push the notched end of the toggle toward the pin, then rotate the smooth end downward. Note that the gooseneck and gnav attachments each sit on a washer.



## Controlling the Extension of the Bowsprit

Before going up the mast, the spinnaker halyard runs forward beneath the spinnaker sleeve, passing through a block tied to a line. This line then runs through a cheek block at the bow and back to the base of the bowsprit.

The length of the line between the base of the bowsprit and the moving block determines how far the bowsprit retracts into the boat. The bowsprit stops retracting at the point when the moving block is pulled against the cheek block.

**The bowsprit should not retract so far that its base touches the hull!** (See the next page for an example.) If it does so, the base of the bowsprit will cut into the hull during a collision.

**If the base of the bowsprit touches the hull, shorten the line between the base of the bowsprit and the moving block.** Do this by adjusting the knot which attaches the line to the moving block. For instance, retie a bowline so that it has a longer tail.

If the bowsprit doesn't retract enough, do the opposite -- tie a smaller knot to lengthen the line.

Bowsprit Half Extended

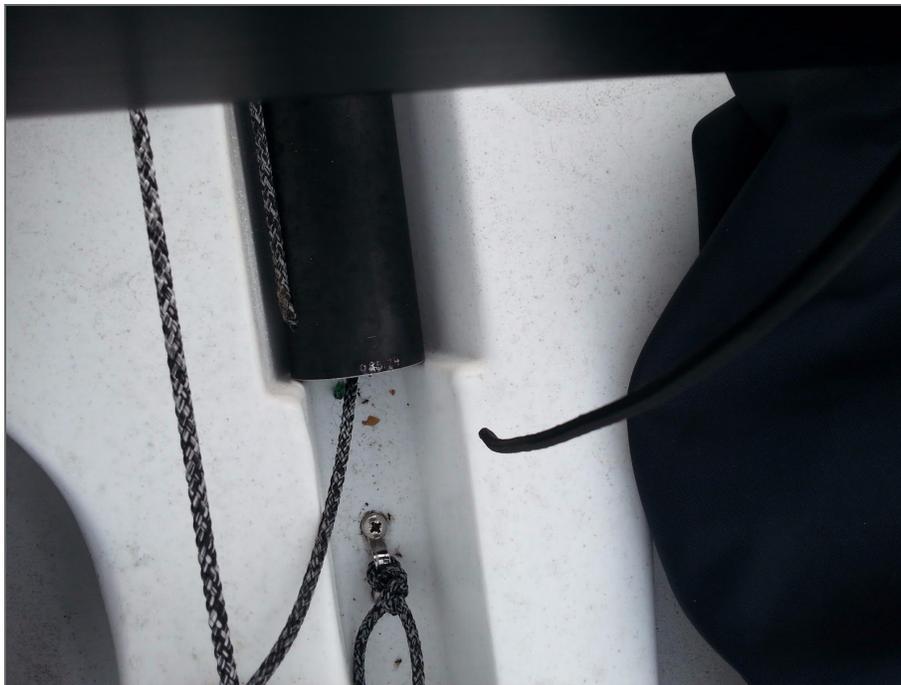


Bowsprit Fully Retracted

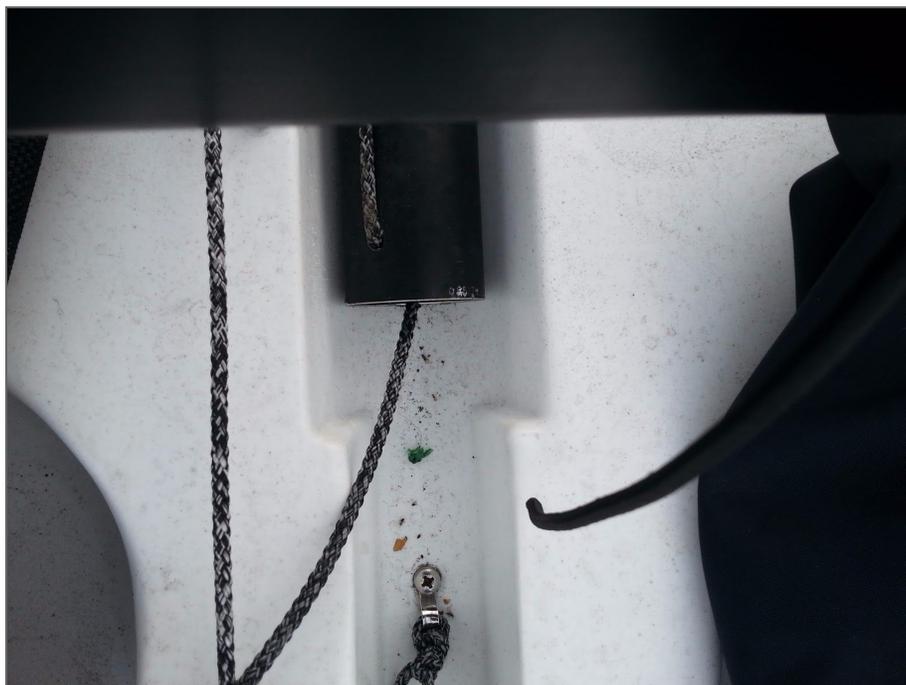


## Distance between the Base of the Bowsprit and the Hull

Bad: the bowsprit will cut into the hull during a collision



Good: 1 inch of clearance between the base of the bowsprit and the hull



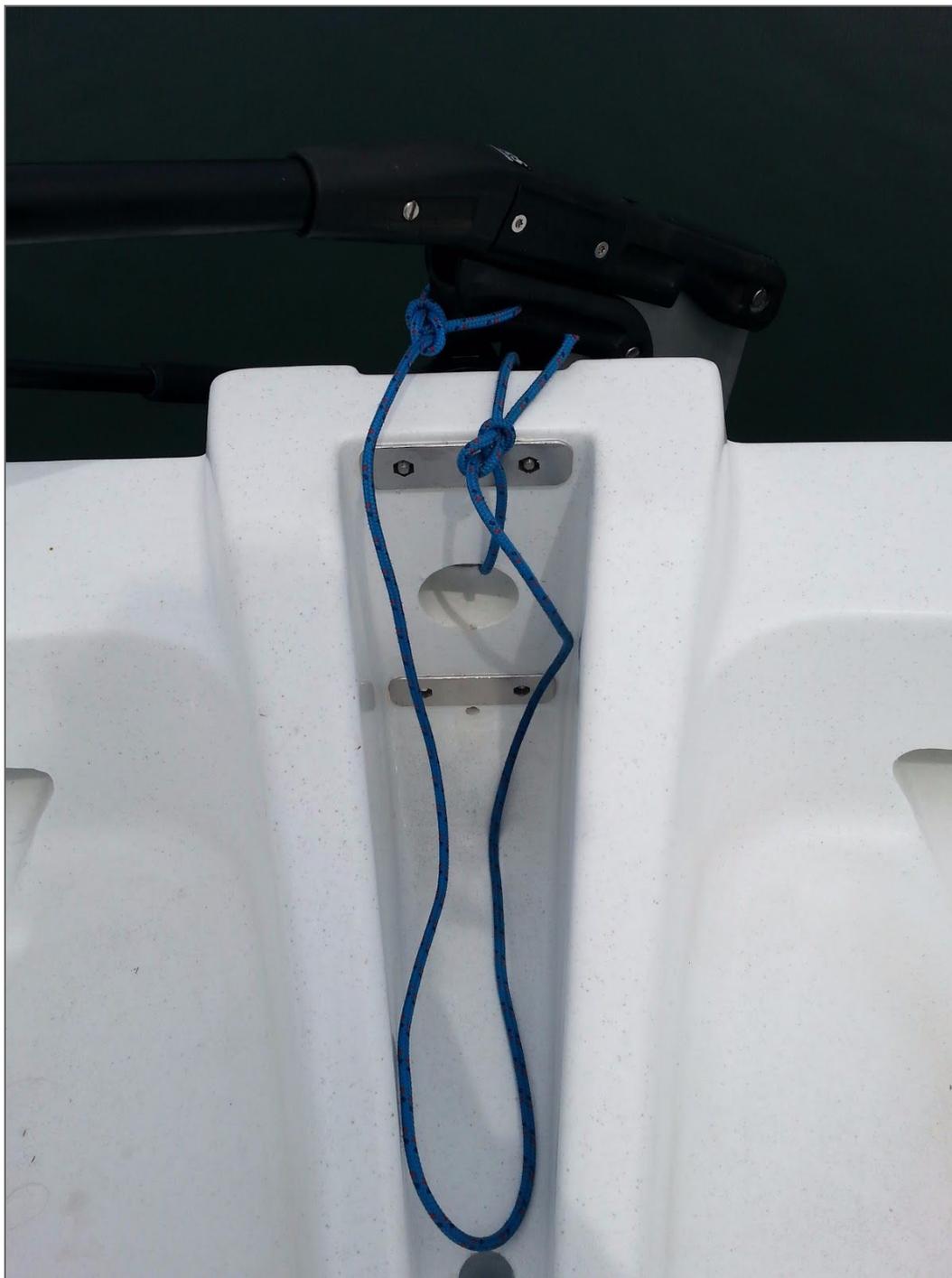
## Fusing the Lines

The lines on the Quest start to separate at the ends. In particular, the cunningham's inner core doesn't fuse well to its braided outer shell. To fix this, pull one inch of inner core out of the shell. Cut the core. Then, pull the shell over the core and fuse the shell to itself.



## Adding Rudder Safety Lines

The rudder casting has a hole for attaching a safety line to the rudder. The other end of the safety line can be tied through the hole in the center of the transom. Seven feet of line (before tying knots) will form a long enough safety line to store the rudder under the hiking straps.



## Masthead Floats

Before the masthead floats were installed in June 2017, we would tie two, one-gallon jugs to the top of the mainsail to prevent turtling. Without masthead flotation, Quests are unacceptably quick to turtle and hard to right.

The float is attached to a silver bracket by four bolts, and the bracket attached to the mast by six screws. **These bolts and screws should be checked every spring, before the masts are stepped. Use Loctite when installing or reinstalling these screws.**

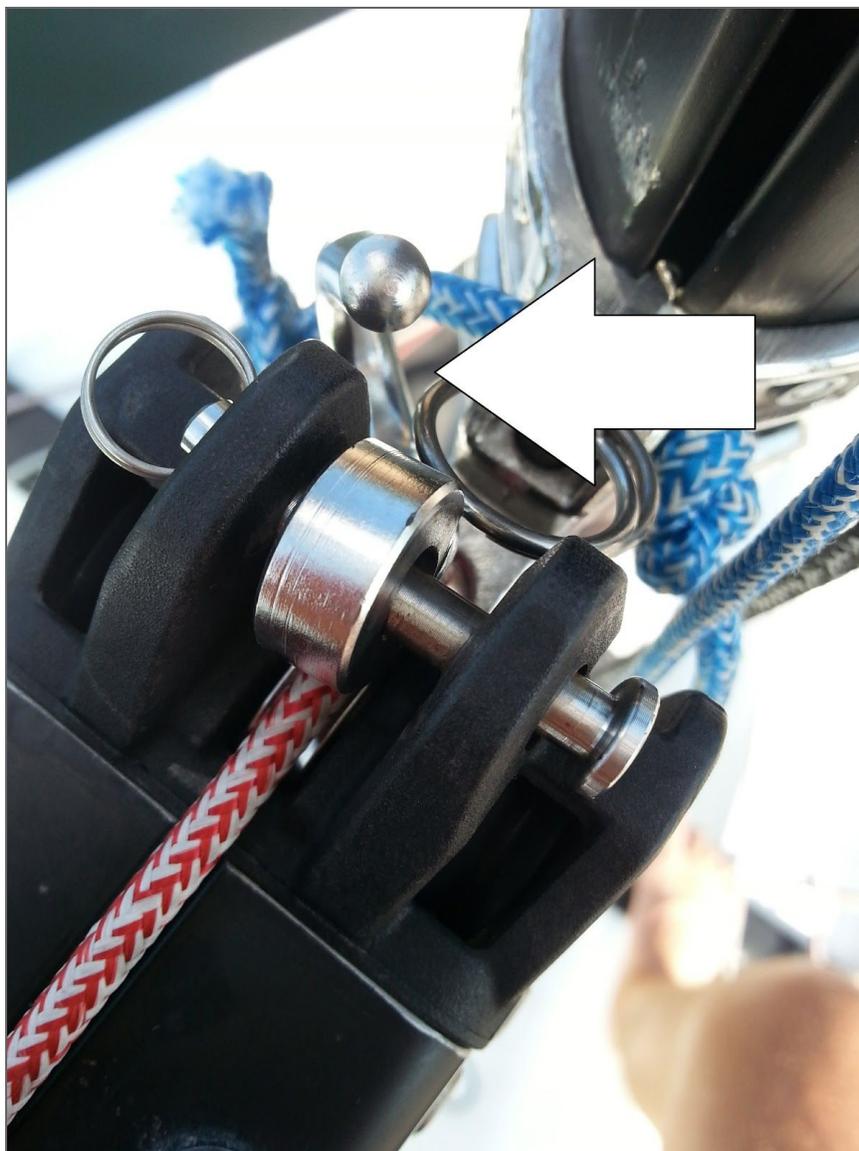


## Bent Reefing Tack-Hook Pins

Quests have a hook on the boom for reefing. When reefing, a ring on the new tack of the sail is slipped onto the hook, and the halyard is tightened.

The Quest upgrade kit we received in Spring 2017 had an improved reefing tack hook. The new hook was designed to be stronger and less likely to get caught between the boom and the mast. These new hooks, however, have yet to be installed -- **most of the clevis pins that hold the hooks in place are too bent to remove.**

It's likely that the pins were bent after the hook got caught between the boom and the mast. In the picture below, notice how the hook would get bent against the mast if this boat were to gybe onto starboard.



## Notes on Maintenance

- The canvas loops at the end of the hiking straps tear off easily. **Reinforce these seams on all Quest hiking straps**
- The first part of the sails to break has been the outermost seam on the panel that reinforces the clew of the jib
- Use G/flex epoxy to repair hull damage