



 Hallberg-Rassy 34.2

TRAINING MANUAL



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RAFSA(O) HR 34.2 TRAINING MANUAL

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INTRODUCTION

1. The purpose of this Training Manual is to set out in more detail how to conduct specific evolutions when operating RAFSA(O) HR 34.2 yachts at sea. This Manual supplements [RAFSA\(O\)'s Safety Management Policy](#) and our [SOPs](#); it forms a critical component of the [RAFSA\(O\) Document Set](#).
2. Suggested amendments should be forwarded to the Training Principal at trainingprinciple@offshore.rafsa.org.uk

There is nothing new in sailing – a few thoughts to ponder

"He who loves practice without theory is like the sailor who boards ship without a rudder and compass and never knows where he may cast."

Leonardo da Vinci

"The pessimist complains about the wind; the optimist expects it to change; the realist adjusts the sails."

William Arthur Ward

"The wind and the waves are always on the side of the ablest navigator."

Edmund Gibbon

"The good seaman weathers the storm he cannot avoid, and avoids the storm he cannot weather."

Anon

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CHAPTER 1 - STORM SAIL RIGGING

1. The HR 34.2 yachts are equipped with a storm Jib, which hanks on to a 'baby' forestay (baby stay) rigged immediately aft of the furling genoa, and a deep reefed mainsail – the third reef. The yacht will point higher with the storm jib than a heavily reefed genoa. An indicative sail plan/reefing guide is in the laminated Reference Cards.

2. **Storm Jib.** The storm jib must remain accessible in the starboard cockpit locker. The bag contains:

- One orange storm jib with wire Tack stop
- Two sheets bowlined to the clew
- Highfield Lever to connect and tension the baby stay

3. When not rigged, the Baby Stay is clipped onto the spreaders and tied to the stanchion foot near the port shroud foot, with elastic cord. The following procedures are used to prepare the storm jib for use; hoisting and dropping is as per any hanked jib:

1. Take the bagged storm jib forward onto the foredeck and remove the bag

2. Ensure the bag is tied on and the sail is secured

3. Secure the Highfield Lever

4. Unclip the baby stay from the midship port stanchion foot



Storm sail with sheets and Highfield Lever

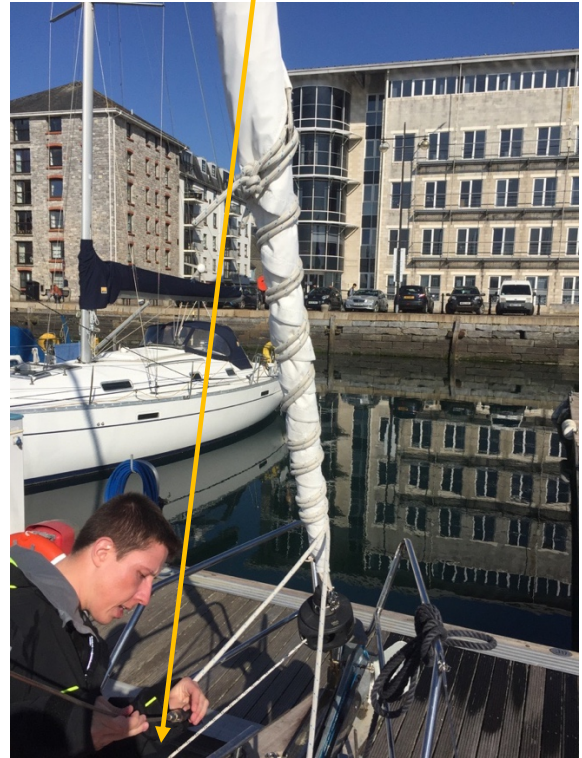


Baby stay secured to port midships stanchion foot

5. Unclip the baby stay from the spreaders



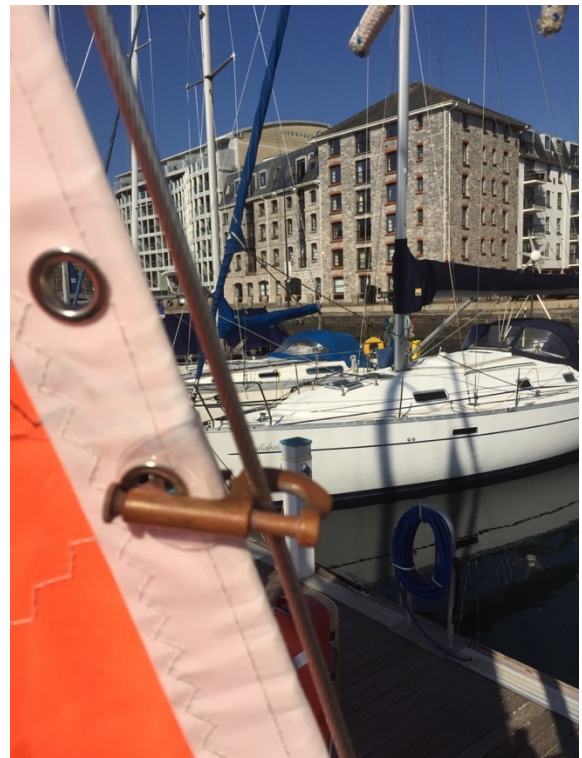
6. Take the baby stay forward and connect to High Field Lever



7. Connect Highfield Lever to fore deck fitting which is stressed for the load



8. Hank on the Storm Jib ensuring all hanks face the same way



9. Attach the Halyard; roll and tie the storm sail & sheets securely ready for use



10. Prior to hoisting the storm jib

- Furl the genoa
- Continue to furl to wrap genoa sheets around genoa
- Secure genoa sheets completely



Wire tack stop

11. Route the storm sail sheet through The genoa travellers, through the aft turning block to the genoa winch



12. Raise storm jib and tension halyard

13. Control sail normally using sheets





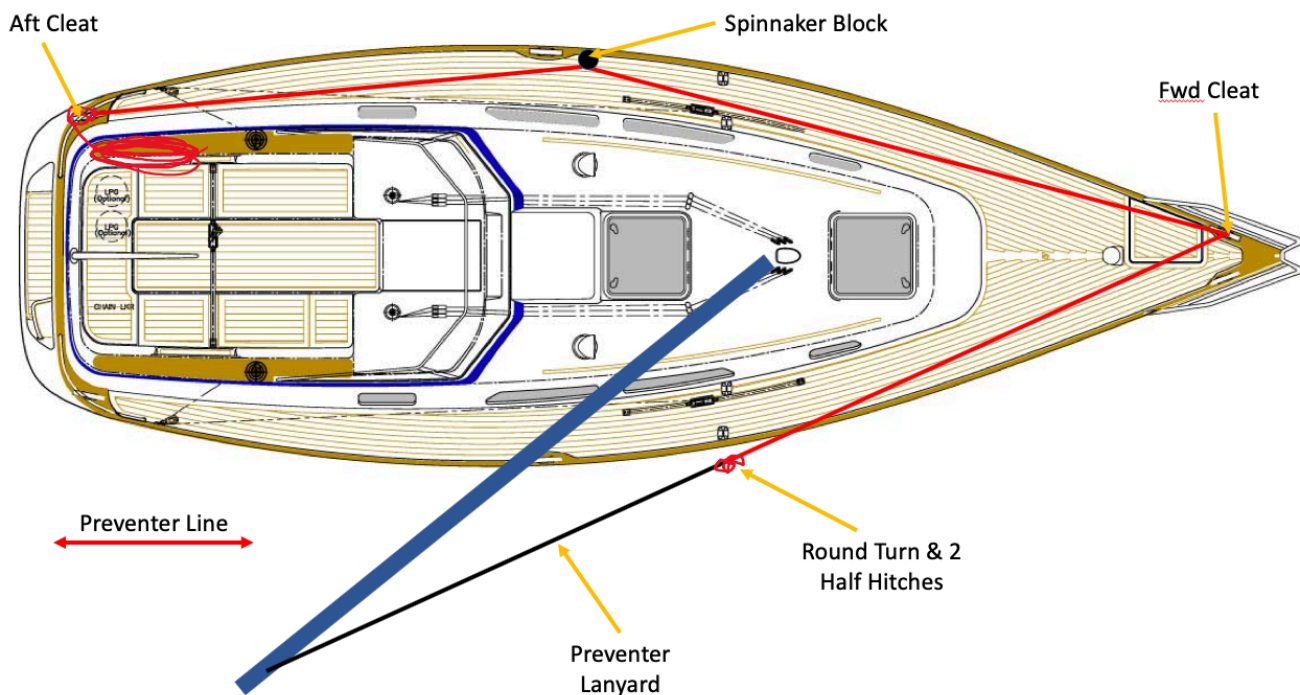
Storm Jib raised



Highfield lever & wire tack stop deck attachment point

CHAPTER 2 - RIGGING THE PREVENTER

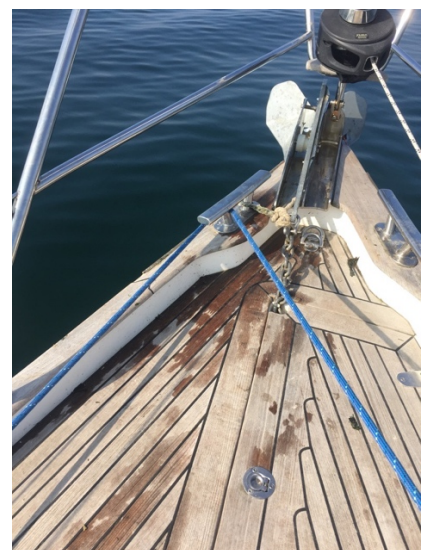
1. **Safety.** SOPs require a preventer to be rigged when sailing with the wind abaft the beam. An inadvertent gybe is extremely dangerous and can severely injure passengers and crew. Inexperienced crew and helmsmen, with little wind awareness, pose the greatest risk. **The skipper is responsible for the safety of his vessel and crew.** To assist rigging, both yachts have a preventer lanyard, attached to the boom end, clipped under the boom. The preventer line is stowed in the starboard aft cockpit locker.
2. **Function.** The preventer is designed to hold the boom out is the mainsail is backed during an inadvertent gybe. It will work in light to moderate winds but **should never be relied on.** In strong and very strong winds and rough seas, the preventer may not hold.
3. **Rigging.** The preventer is rigged as shown below:



Aft cleat OXO



Spinnaker block midships



Forward cleat out-to-in-to-boom

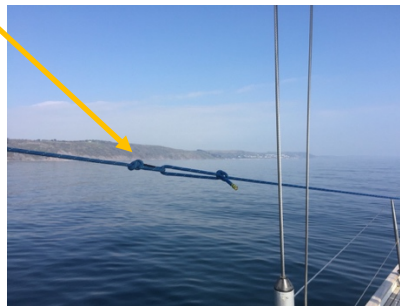
Preventer lanyard

Preventer – routed
over starboard rail

Preventer tied to
lanyard with
**round turn & 2
half hitches**



The Preventer fully rigged



4. **Method.**

- Route the preventer line from the aft quarter on the windward side
- Use windward midships spinnaker block
- Use forward cleat threading the preventer out to in
- Route the free end aft on the leeward side to just aft of the shrouds
- Tie to rail do not leave loose.
- Untie preventer lanyard under boom
- Tie preventer to loop in lanyard using a round turn and 2 half hitches
- **Do not use a bowline** – the knot will become too tight
- Sheet out the main further than sail trim requires
- Pull the preventer tight and secure to aft windward cleat using an OXO
- Sheet in the main sail sheet to set the sail trim and tighten the preventer line
- **Do not leave slack in the preventer line** it must be fairly taught.
- Release the OXO and let the preventer run free if you need to heave to or tack

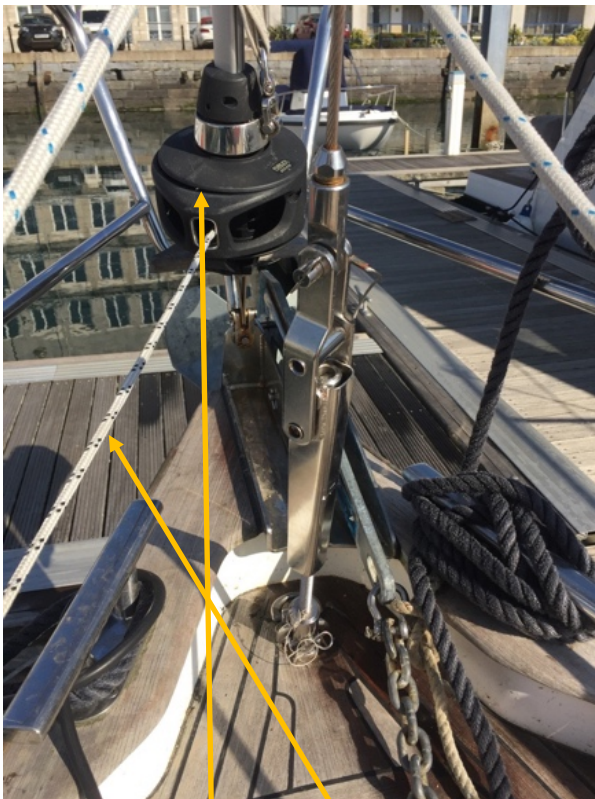
CHAPTER 3 - REEFING

1. The yacht is equipped with a furling genoa operated from the cockpit. It is **essential** that when fully furled in light to moderate wind strength, a **minimum of 5 turns of the furling line remains on the furling drum**. If less than 5 turns, additional turns can be added by removing the sheets from the genoa and turning the furling drum (and genoa) to put more turns of furling line on. This will ensure you can furl the sail in strong winds when the furl is much tighter. The mainsail uses a slab reefing system.

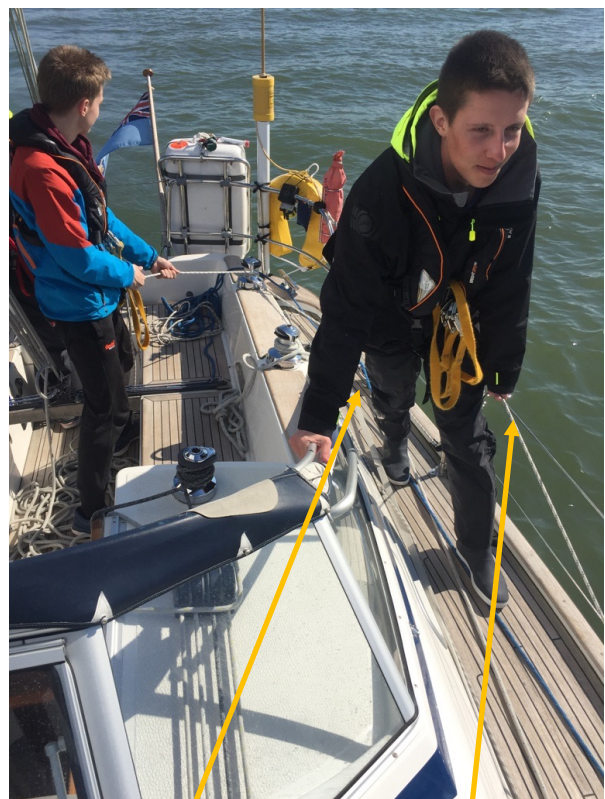
2. **Genoa Reefing.** To reef the Genoa:

- Ideally, reef with wind forward of the beam. If wind abaft the beam do not allow the genoa to fly forward of the forestay, which can damage the rig
- Ease the genoa sheet until the sail flogs
- Sweat in the furling line on the port side until sufficient sail is rolled around the forestay
- **Do Not winch in the furling line you will twist the genoa foil**
- Jam the furling line to prevent it running out
- Adjust the jib car position
- Sheet in on the genoa sheets to trim the sail

Never winch the furling line. Draw manually with 1 turn around aft winch



Genoa furling drum with furling line running aft



Jamming block/jammer

Sweating the furling line

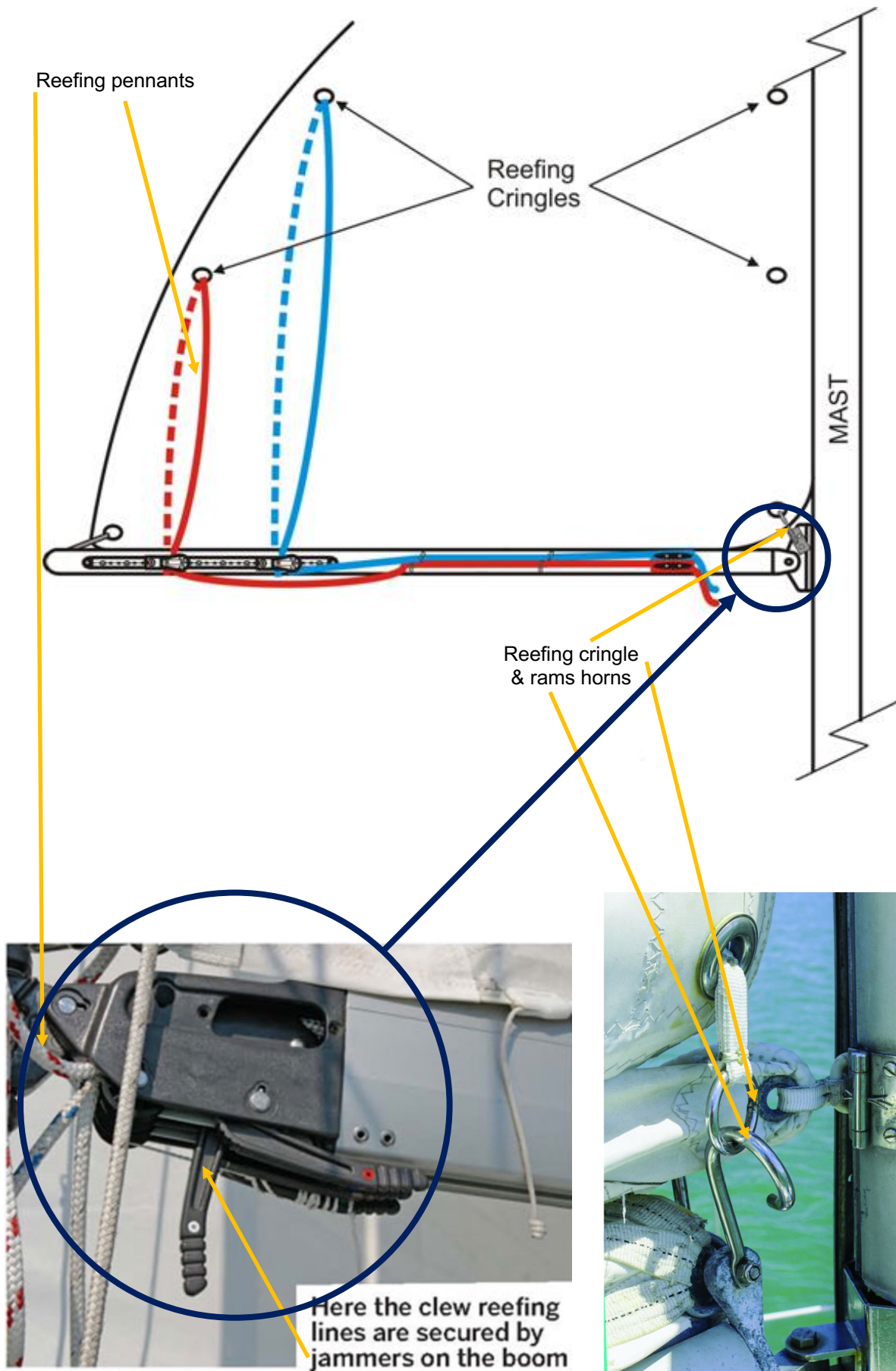


First reef in – there are no reefing marks on our HR yachts

3. **Mainsail Reefing.** The mainsail uses a slab reefing system. Leach reefing rings hook over 'rams horns' at the gooseneck. Reefing pennants secure the clew; jammers are located under the boom and the reefing pennant winch is located on the aft side of the mast, below the boom. A winch handle can be stowed at the mast.

4. **Method.** Slab reefing the main follows the same procedure as raising and lowering the mainsail; this is achieved by:

- Sailing into wind close hauled
- Shake out the mainsail halyard, load onto the halyard winch
- Position crew; one at the mast; one on the main halyard; one on the mainsheet; and one helming
- Winch in the mainsail halyard slightly and release the halyard jammer
- Kicker off; ease the mainsheet to distress mainsail; topping lift on to raise boom
- Keep the main sail depowered using the main sheet
- Lower the mainsail under control using the halyard. Place the reefing cringle over the 'rams horn' – any side will do.
- Raise and tension the main halyard. **Do not over tension**
- Pull in the corresponding reefing pennant and winch in. Stop when clew is on boom and sail foot is tight. Reefing pennant Jammer on
- **Use a reefing earring** – the jammers are easily knocked off
- Ease topping lift; sheet in the main fully; kicker on; take up slack in the other reefing pennants, tidy and secure; record in ships log





Lowering the mainsail and preparing to secure the reefing cringle to the ram's horn

This is how it should look when the pennant is correctly positioned and the cringle pulled down tightly



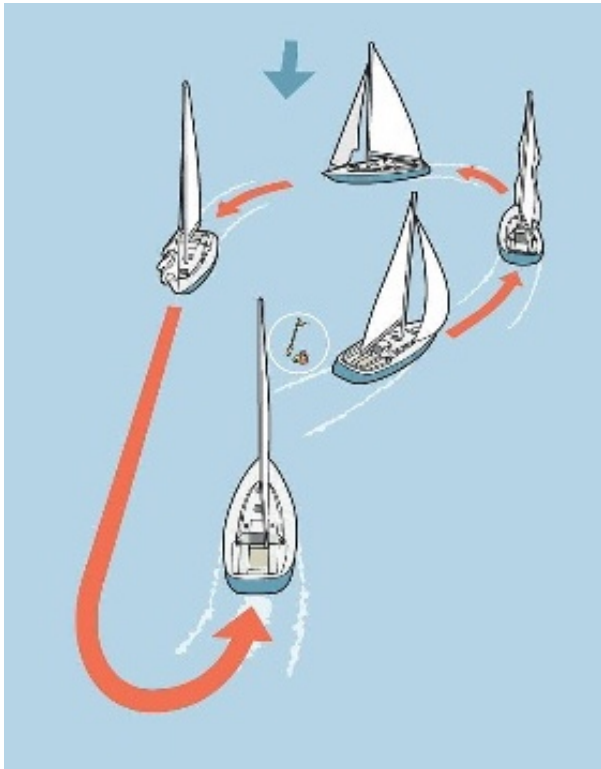
Reefing earring (rope sail tie) in place to secure clew if reefing pennant drops out. **Use a slip knot**

CHAPTER 4 - MAN OVERBOARD TECHNIQUES

Returning to The Survivor

1. You will have been taught how to carry out the sailing drills to position the yacht to recover a MOB, under power (preferred) and sail. **MOB is a Distress situation:** the aim is to reduce separation of the yacht from the MOB and return to pick up the survivor on the leeward side as soon as practicable, using a method that will give the very best chance of first-time success. The RYA currently advocate the following methods:

2. **Under Power.** If you've got an engine and it works, use it.



- Sheet in the mainsail and heave to in order to take the way off your boat
- Throw buoyancy to the casualty and mark with a dan buoy and MOB on GPS
- Instruct a crewmember to point at the MOB
- Retrieve any warps from the water and start the engine
- Furl or drop the headsail
- Make ready the throwing line
- Manoeuvre 5-6 boat lengths downwind of the MOB; keep the MOB in sight
- Approach the MOB into the wind, so that the mainsail is depowered
- Pick up the MOB on the leeward side, aft of the mast.

3. **Under Sail.** There is an art to coaxing your boat gently into the breeze and coming to a standstill alongside your target; it requires regular practise. This is skill you must master; a MOB situation is EXACTLY the time when your motor will decide not to start, or you will end up with a line wrapped around the propeller.



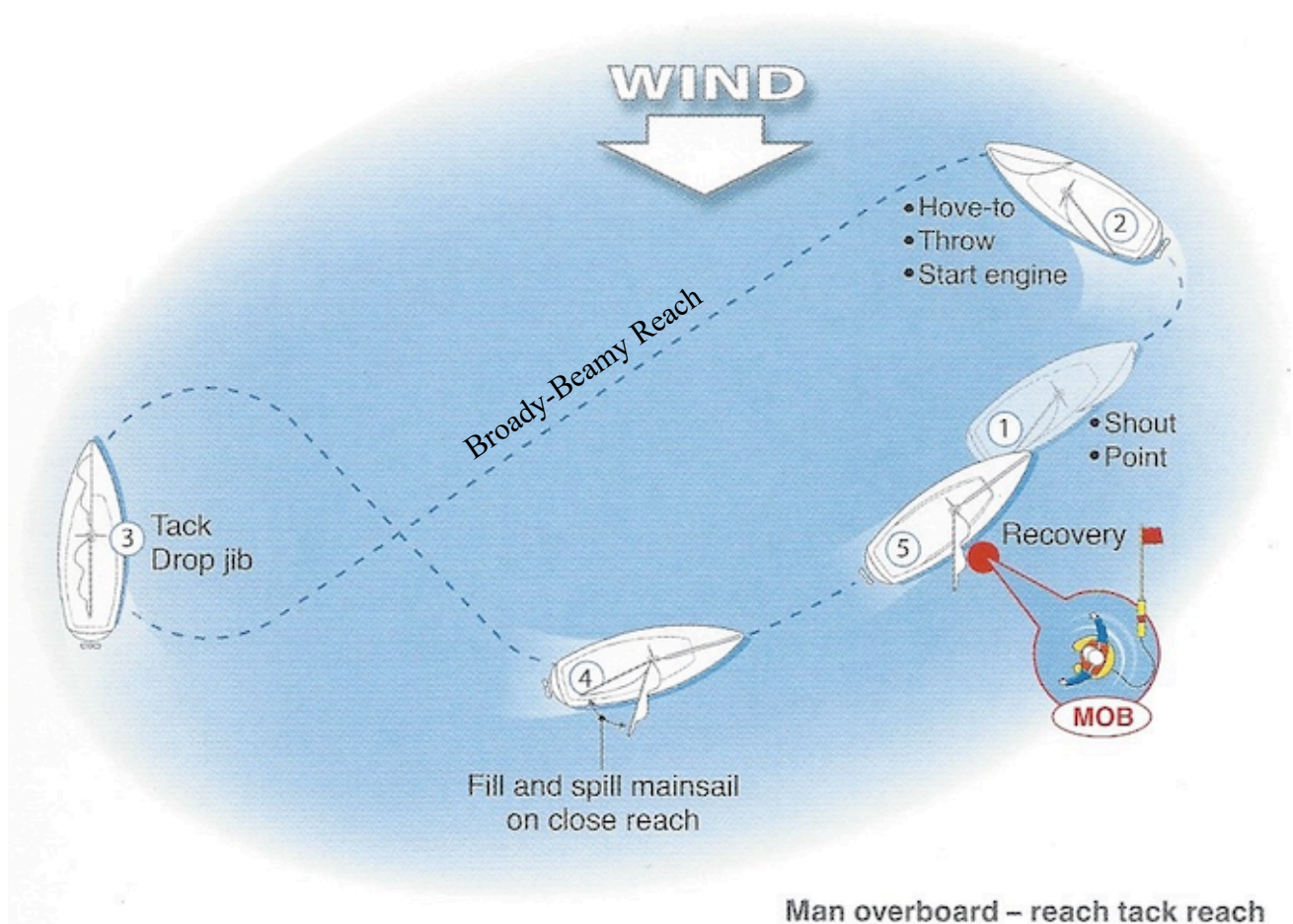
On a close reach you can spill and fill your mainsail to control your speed

Distressed mainsail

MOB

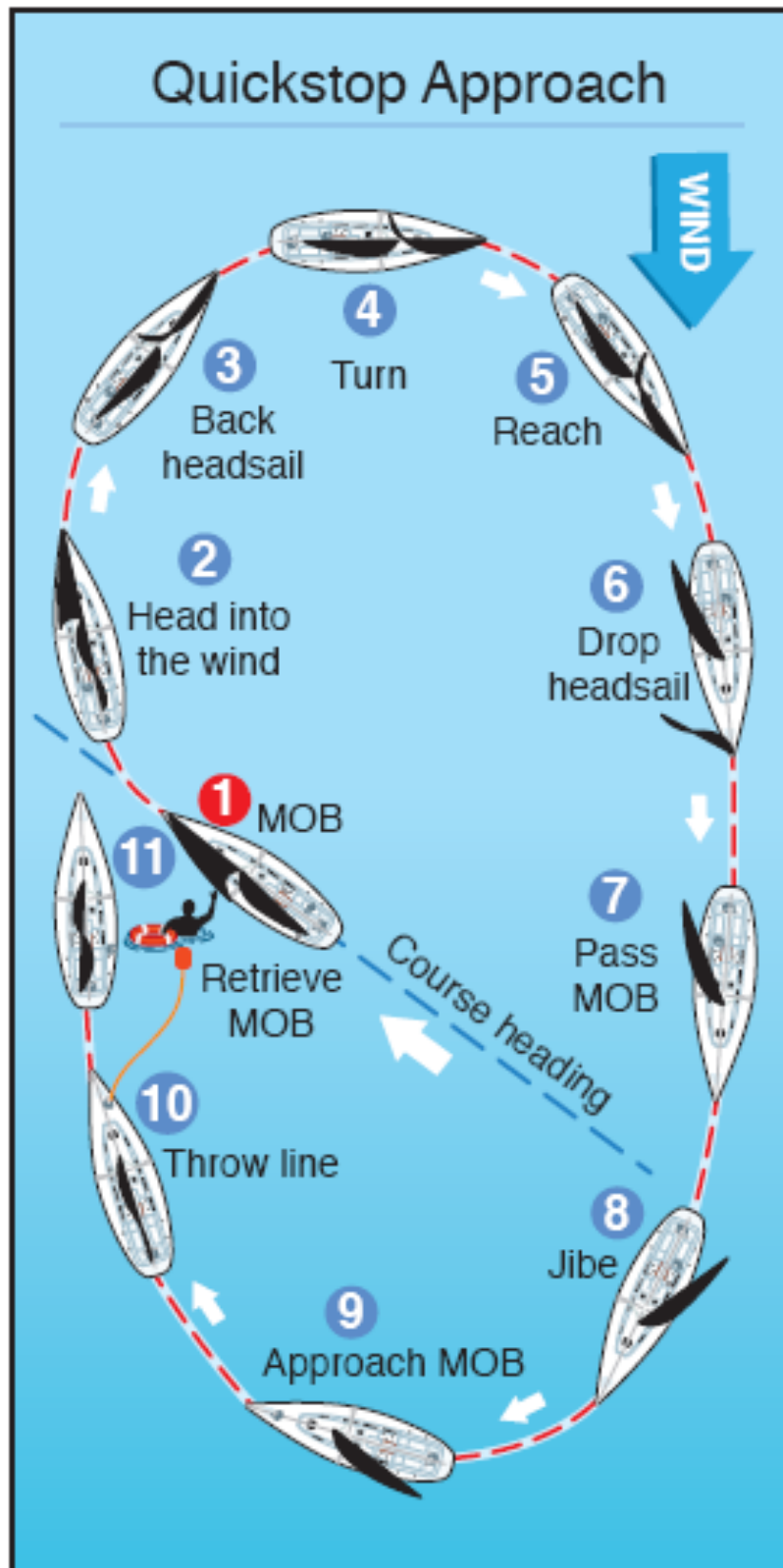
Method:

- As before, sheet in the mainsail and heave to
- Throw buoyancy to the casualty and marking with a dan buoy & on GPS
- Instruct a crewmember to check for warps
- Sail back to the survivor then turn onto a beamy/broad reach
- Sail away for about five or six boat lengths, ensuring that you do not lose sight of the MOB. Drop/furl the headsail
- Tack, aiming the leeward side of the yacht at the MOB. Ease/release the kicker and let out the mainsail sheets. The mainsail should flap; if not, bear off downwind to change the angle of approach. Point the boat slightly above (windward of) the MOB until the mainsail flaps (distressed).
- The angle of approach should be a close reach so that the sails can be powered and depowered
- Fill and spill the mainsail and slowly approach the MOB. Pick up the MOB to leeward, aft of the mast



4. **Alternative Approach Methods – Sail and Power.** There are numerous alternative methods of approaching the MOB; several are set out below for consideration. The method that works on the day in the prevailing conditions is the correct one. This is a skill which requires regular practise.

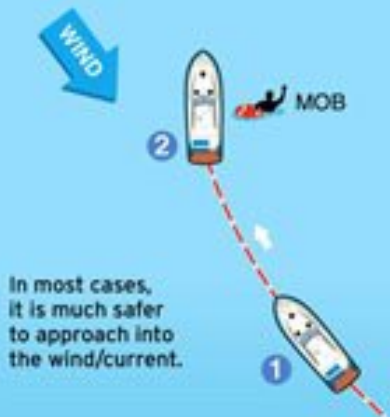
a. **Sail.**



b. **Power:**

ALTERNATIVES FOR APPROACHING VICTIM

Preferred method:
Wind/current over the bow



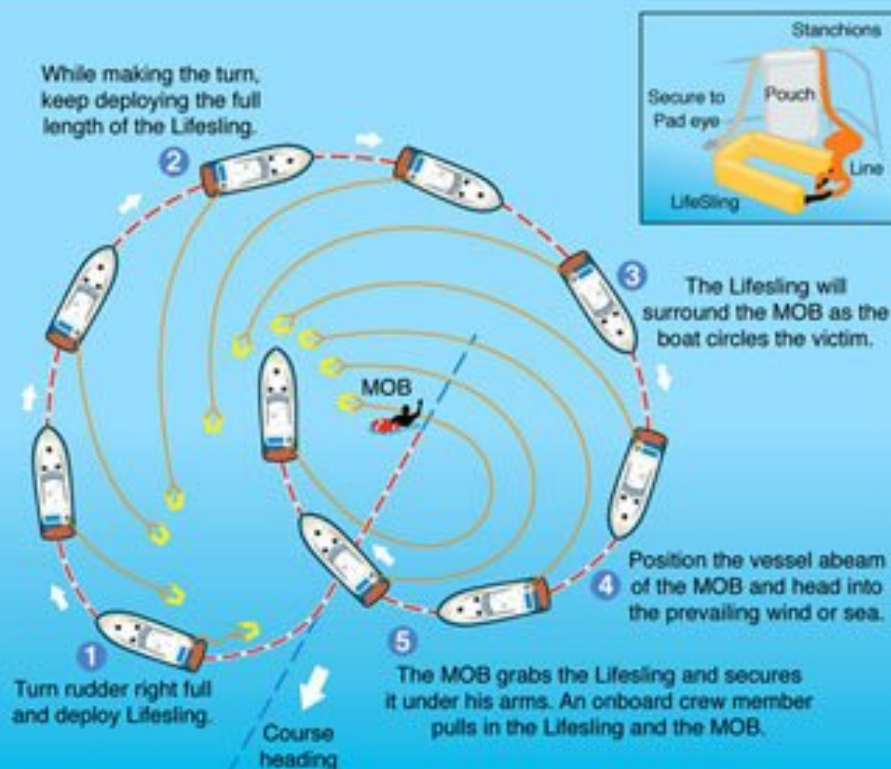
1. Slow the boat and reduce wake as you approach.
2. Positioning the boat with the victim on the recovery side; stop headway with a short, backing down burst, put engines in neutral, and make recovery.

Alternate method:
Wind/current over the stern



1. Maneuver into position upwind and up current of the victim, place the engine in neutral.
2. SLOWLY drift down to the victim, controlling the boat to avoid drifting over him, and make recovery.

LIFESLING, TOWLINE, OR SKI-ROPE RETRIEVAL

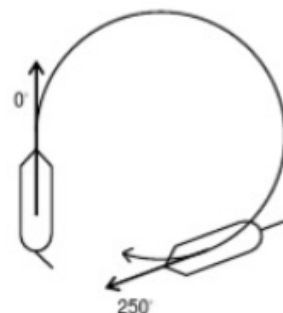


5. **MOB Manoeuvres Under Power.** Practice has shown that different MOB manoeuvres may be required, depending upon the situation prevailing and the type of vessel involved. The effectiveness of the manoeuvres described below has been proved in numerous MOB scenarios; **the aim is an accurate course reversal that places the vessel on the previous water track, on the reciprocal heading:**

- **Immediate Action Situation:** MOB noticed by crew and action is initiated immediately.
- **Delayed Action Situation:** MOB is reported but action is initiated with some delay.
- **Person Missing Situation:** Person is reported missing (time uncertain).
- When a ship is making full speed ahead, the following three standard manoeuvres are used;

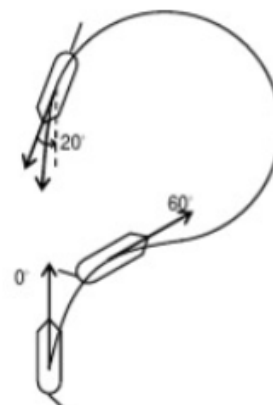
1. **Single Turn (210° Manoeuvre)**

Rudder hard over (in an **immediate action -situation, only** to the side of the casualty). After deviation from the original course by 250° rudder to mid-ship position and stopping manoeuvre initiated.



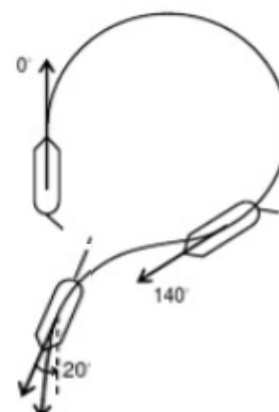
2. **Williamson Turn (180°)**

Rudder hard over (in an **immediate action situation, only** to the side of the casualty). After deviation from the original course by 60° rudder hard over to the opposite side. When heading is 20° short of opposite course, rudder to mid-ship position and vessel turned to reciprocal course.



3. **Schanow Turn (180°) (not to be used in an immediate action situation)**

Rudder hard over. After deviation from the original course by 240°, rudder hard over to the opposite side. When heading is 20° short of opposite course, rudder to midship so the vessel will turn to the reciprocal course.



MOB Recovery.

6. **Boat Hook.** After a good approach to position the MOB 0.5-1m off the leeward side of the hull amidships, the boathook can be used to secure the casualty whilst the lifting mechanism is attached. **Do Not use the boathook held horizontally to lift a weight; lift along the length of the shaft.** The boathook can however, be difficult to attach to a loop on the lifejacket and can cause injury to the survivor. The lasso is the preferred method.

7. **Lasso.** The lasso is used to 'encircle' and secure the survivor alongside the leeward side of the hull amidships, clear of the bow where serious injury can occur from a pitching yacht. The HR yachts tend to forereach and a lasso ensures you do not lose the MOB. The lasso is stored in the starboard aft cockpit locker and should always be on top ready for use.

Method:

- Un-hank the lasso amidships on the side nominated for MOB recovery. The lasso must remain doubled. Pass the two ends **out over the top rail** and recover **under the bottom rail**; OXO to the midship cleat.
- Pick up a single lasso line in left hand and coil quickly as per a warp.
- Split the coil roughly equally into both hands. With arms spread, raise both coils above head to create slack; lower hands.
- Face outboard and forward to watch MOB approach. Continue to provide MOB position narrative to helm.
- As MOB approaches abeam, throw the lasso to encircle, then quickly draw in one of the lines to pull the MOB alongside amidships. Keep the helm informed of progress.

Technique:

- The lasso technique requires a 'lob' of both coils, outwards into the 10 and 2 O'clock positions. They must be thrown simultaneously from elbow height, high enough to clear the top rail. **Too hard a throw will not allow the lasso to open.**



1. Pass the double lasso ends out over the top rail, in under the bottom rail, and OXO to midship cleat

2. Select a single lasso line and coil quickly, clockwise, like a warp. Speed is more important than finesse



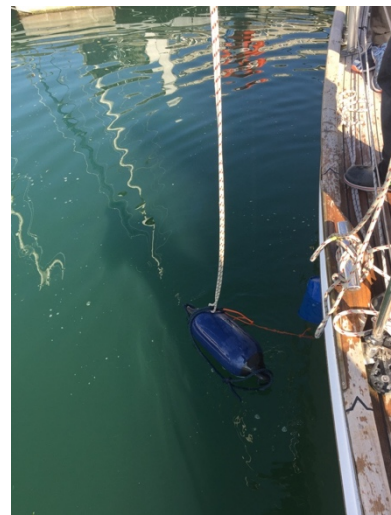
3. Split the coil, roughly evenly, between both hands. Open arms wide and raise coils above head to create slack

4. Lower hands and face forward and out. Lob the lasso coils out to the 10 & 2 o'clock positions to encircle to MOB. Don't throw too hard.



5. Lasso the MOB. Immediate pick up a single lasso line under the bottom rail and pull in as the lasso sinks to ensnare the MOB

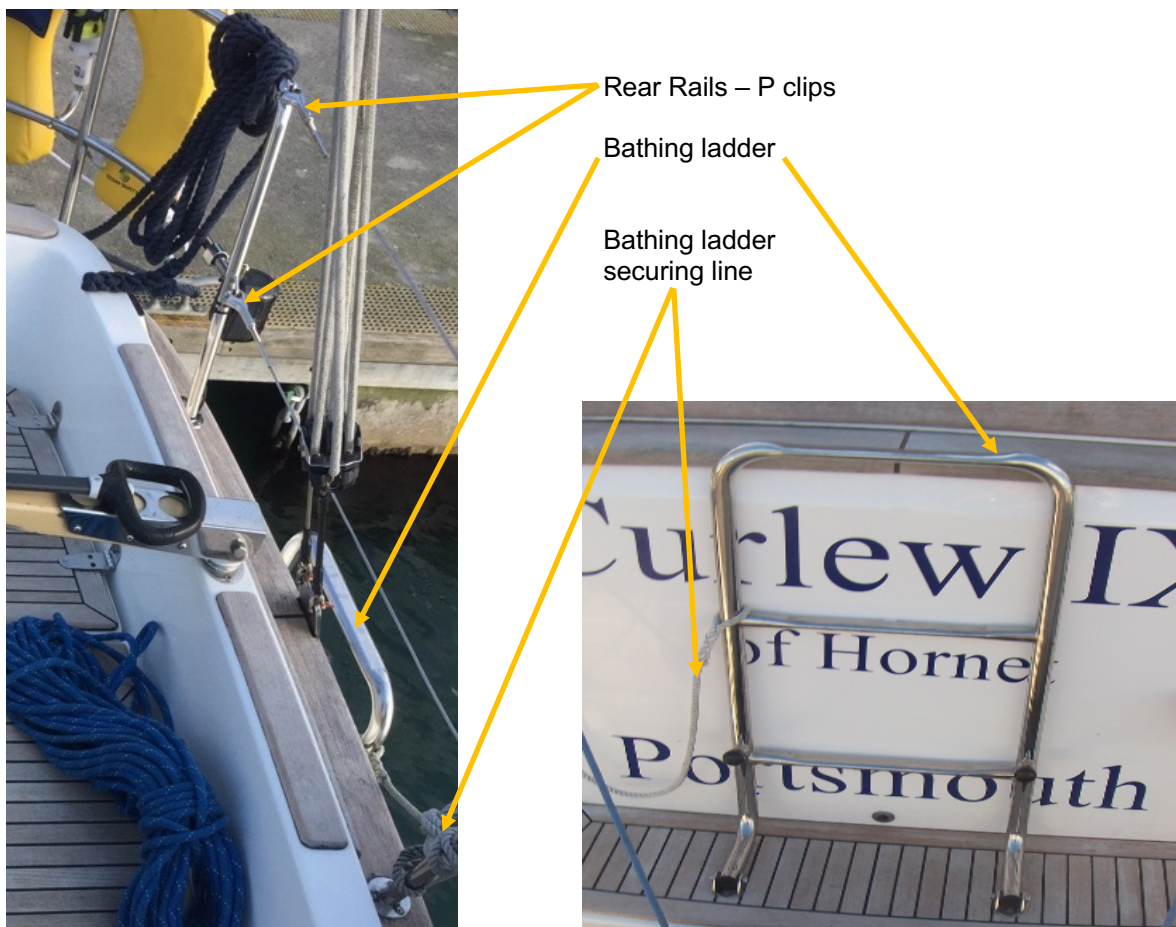
6. The casualty can then be held against the hull amidships or manoeuvred aft towards the boarding ladder



8. **Boarding Ladder.** The boarding ladder, located on the stern, offers an ideal way to recover a conscious and cooperative MOB.

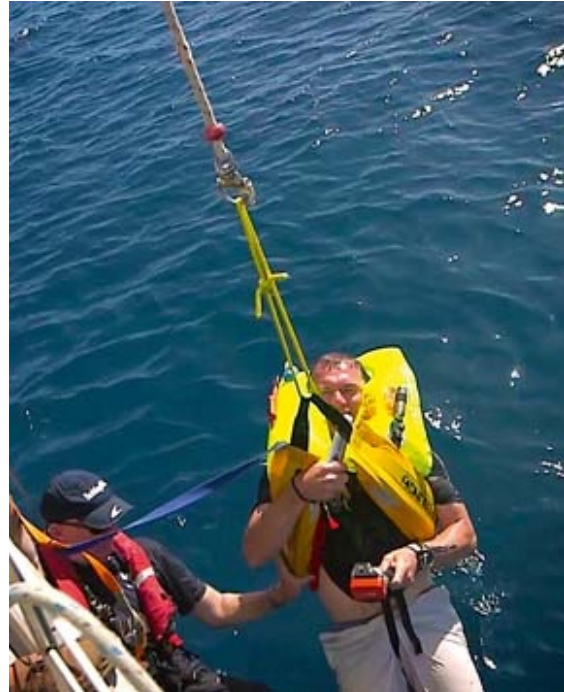
Method:

- Select two strong crew for recovery. Clip on using safety lines in aft cockpit. Unclip the two aft rails and secure.
- **Shut down engine (safety and exhaust fumes).** Untie the boarding ladder and lower.
- Manoeuvre MOB to bathing platform. Consider using topping lift to assist recovery, either to lift MOB or act as safety line. Attach topping lift to MOB's lifejacket lifting beackets (loops).
- Place both recovery crew on bathing platform facing inwards, conduct a simultaneous lift of the MOB, tacking up any slack on the topping lift, which acts as a safety live.
- Recover MOB onboard and **treat as casualty. Update distress message accordingly and arrange casualty transfer to hospital.**
- **Recover all lines before starting engine.**



9. **Halyard Lift.** The dead weight of even a small adult in the water makes a manual lift unachievable. A halyard on a halyard winch is an excellent means of recovering a survivor onboard. It may require two crew to spell each other on the winch. Keep the halyard forward of the shrouds to prevent damaging them.

The halyard can be attached to the lifting beckets (loops) on the lifejacket or the safety harness attachment point using the snap shackle



Halyard lift using a rescue sling

10. **Handy Billy Lift.** The handy billy affords significant mechanical advantage which is further enhanced by the use of a winch.

Method:

- Shake out and untangle the handy billy. Connect to a halyard using the snap shackles, with the handy billy pull at the halyard (top) end.
- Extend the handy billy to afford the required lift to raise the MOB over the top rail.
- Lower the halyard until the end of the handy billy is at water level. Secure the Halyard on a winch.
- Connect handy billy to MOB's lifejacket beckets or harness attachment point.
- Operate the handy billy manually or better, route to a cockpit winch via a spinnaker block.



Shake out the handy Billy



Handy Billy

Halyard

From handy billy

block



Route the handy billy line back, via a block to a cockpit winch

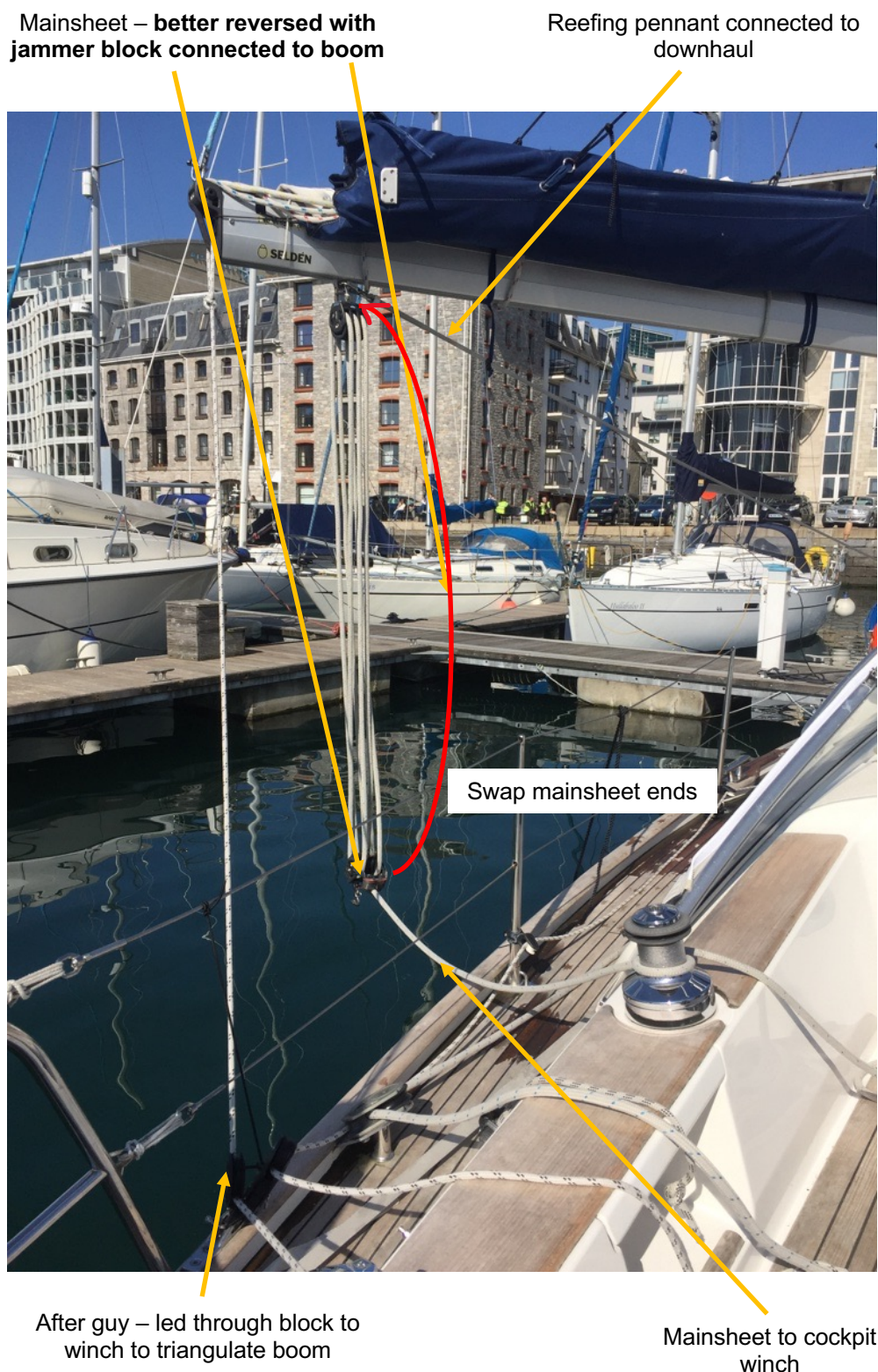
Handy billy

To cockpit winch



Winch in on the handy billy to recover the MOB

11. **Boom and Mainsheet Lift.** The boom and mainsheet provide a ready-made lifting gantry. The challenge is controlling the boom safely and avoiding further casualties in a rough sea. Furthermore, it takes longer to rig and requires the mainsail to be lowered fully. The mainsheet on the HR unclips from the traveller using a snap shackle. The key issue is to triangulate the boom using the pole down and preventer pennant, and an after guy from the boom end, lead aft and secured. The set up is shown below; recovery is by sheeting in the mainsheet. **The mainsheet should be reversed, so the jammer block is attached to the boom – the opposite way to the set up shown below.**



CHAPTER 5 - ADJUSTING BACKSTAY TENSION

1. The adjustable backstay attaches the rear stay to the transom and is adjusted manually. **Remember to ease the tension when alongside.** The arrangement on the HR34.2 is shown below:



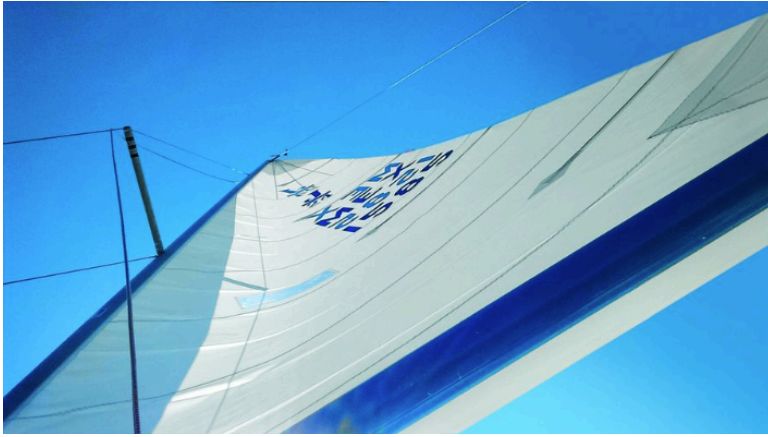
An adjustable backstay is one of the rig's most powerful adjustments.

2. Changing backstay tension has two principle effects:

Mainsail shape



- Increasing backstay tension on a fractionally rigged yacht pushes the middle of the mast forward and pulls the top backwards.
- This moves the luff away from the leech, flattening the central and upper parts of the mainsail and reducing the draft.

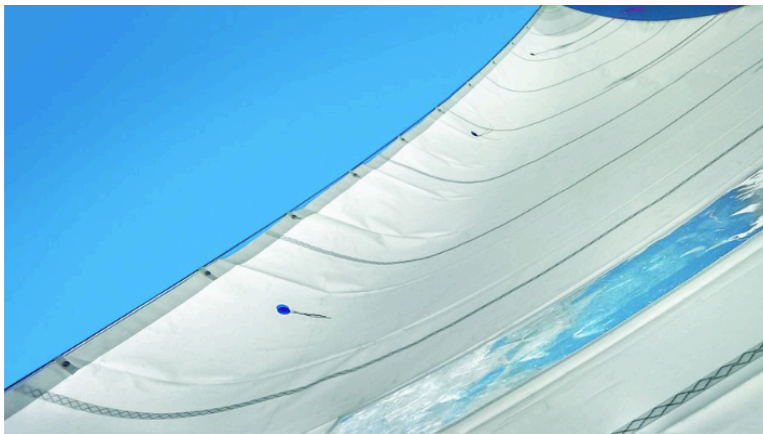


- When the backstay is eased, the top of the mainsail is much fuller, creating a more powerful shape.



- When the backstay is tensioned, the main is noticeably flatter, especially near the top-third of the sail, creating a depowered shape.

Foresail Shape



- There's more headstay sag when the backstay is eased, resulting in there being more shape in the front of the sail.

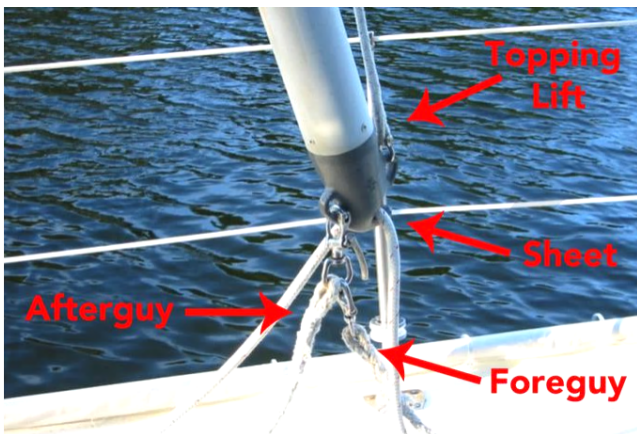


- The difference when the backstay is tensioned, creating a much flatter entry and less depth in the forward portion of the sail.

CHAPTER 6 - POLING OUT THE HEADSAIL

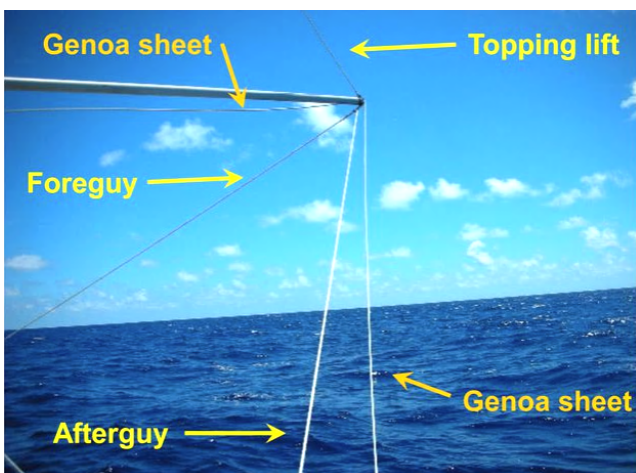
1. When running downwind at wind angles within 30° of the stern, the genoa is blanked and collapses. Poling out the genoa prevents this. **For safety reasons, the preferred method is to triangulate the pole independent of the genoa sheets.** The pole is raised and triangulated by a pole up (topping lift), pole down (foreguy) and an after guy (a spinnaker guy line). The genoa sheet is run through the pole end which allows release of the genoa and enables the yacht to be tacked or gybed, leaving the pole in position. A triangulated pole also allows the yacht to hove to.

2. Method:



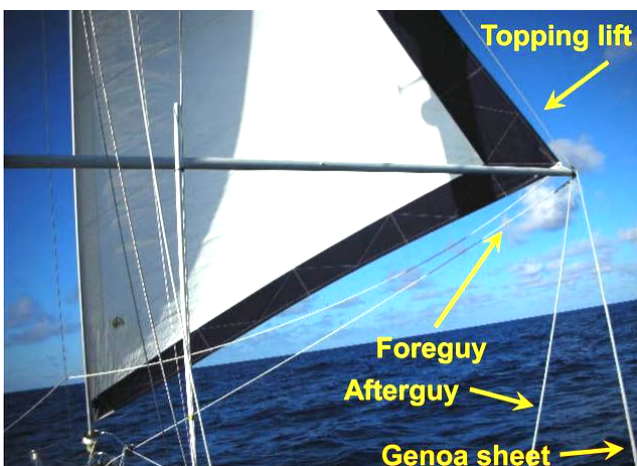
Prepare the Pole

- Lower the pole so the outboard end is on the foredeck
- Rig as shown. Run the genoa sheet through the pole end



Set the pole:

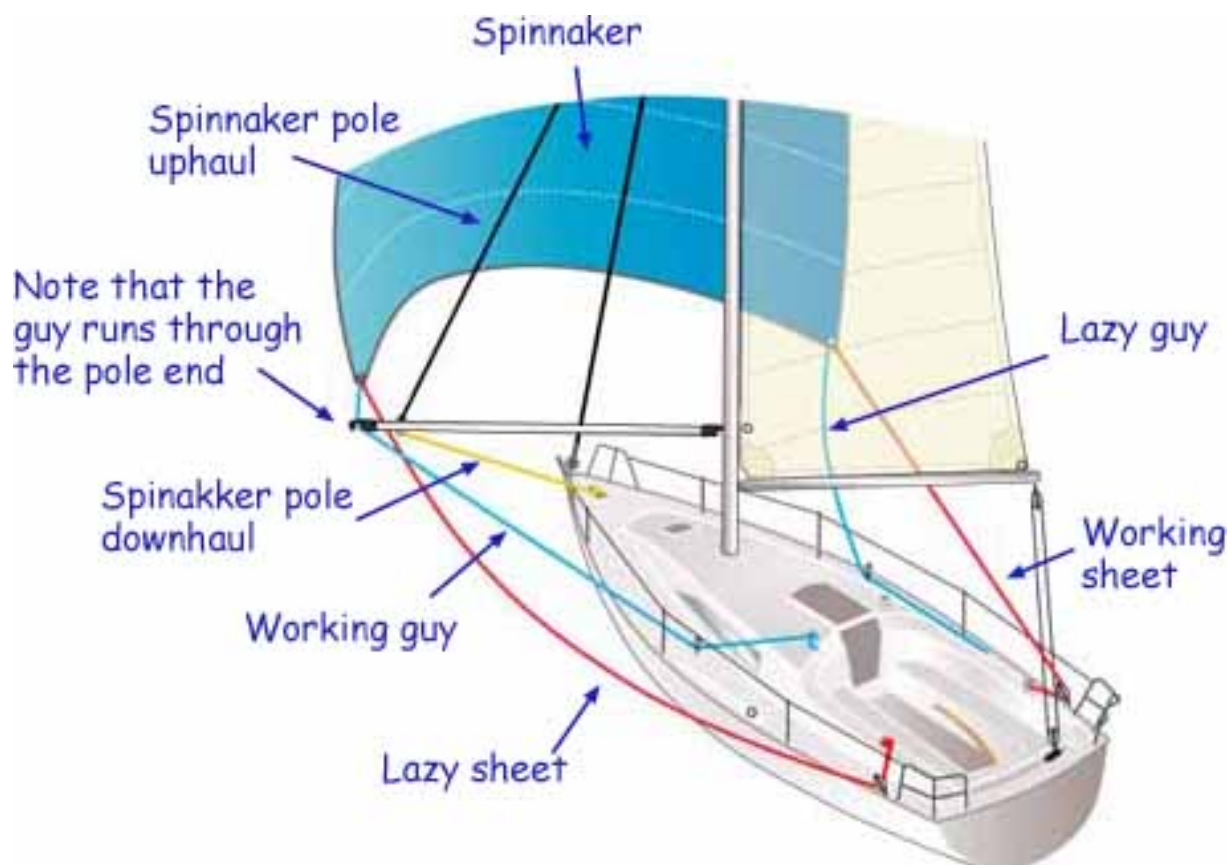
- Set inboard end at clew height
- Raise the pole (topping lift)
- Position at about 50° - 60° off the bow
- Triangulate, tensioning by hand pole down (foreguy) and afterguy
- Ease the working genoa sheet and gybe the genoa
- **Do not let the genoa blow forward of the forestay it can damage the rig**
- Sheet in genoa, adjust pole.
- **Reefing, tacking, gybing and hoving to are carried out as normal**



CHAPTER 7 - SPINNAKER HOISTING, FLYING AND DROPPING

(courtesy: sailor's life for me')

1. Flying the spinnaker successfully relies on careful planning and briefing of all the crew so they know what their duties are. The skipper needs to understand how to rig the pole and spinnaker. The first attempt should be done in light winds to facilitate learning. A view of what the crew is seeking to achieve is shown below:

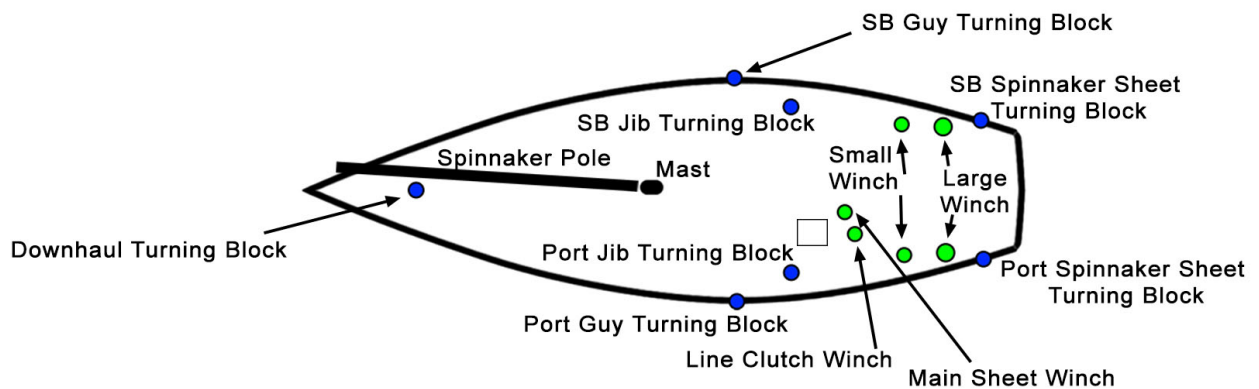
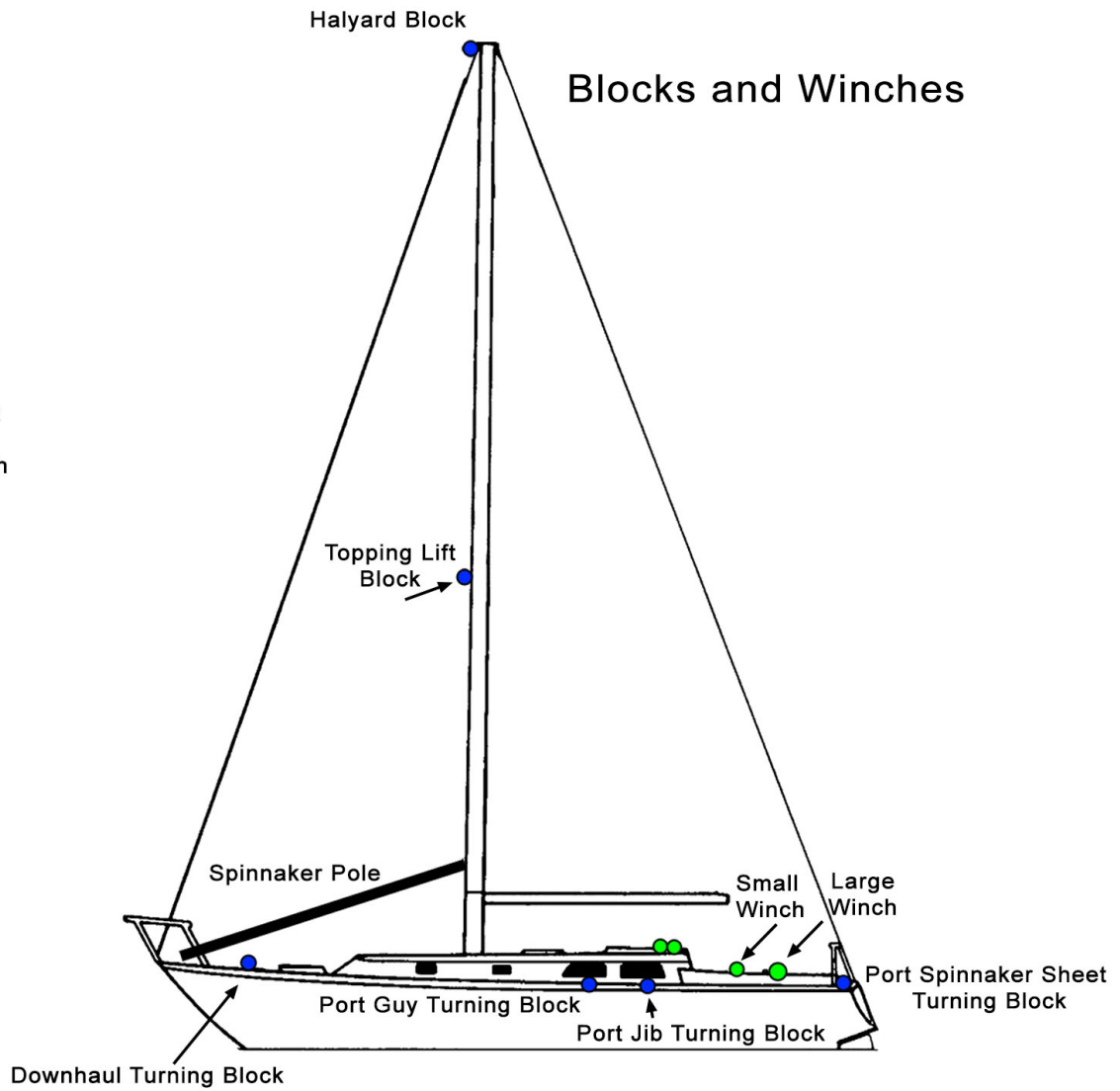


2. Use of the spinnaker first requires an understanding of the blocks and winches to be used: the process of setting up the yacht, raising and lowering the spinnaker is set out below in 5 stages:

- Setting up the yacht – can be done alongside
- Preparing the spinnaker
- Pole up – prefeed the guy
- Hoisting the spinnaker
- Dousing (Lowering) the spinnaker

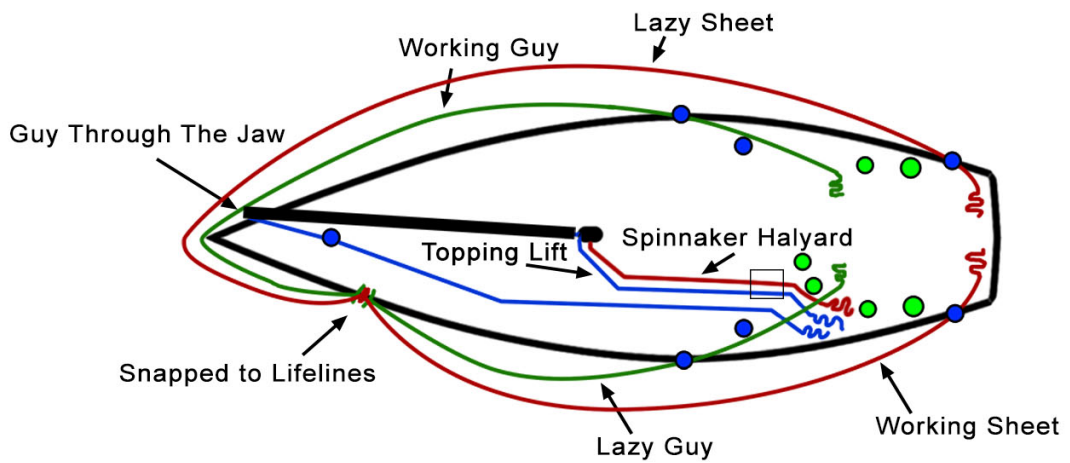
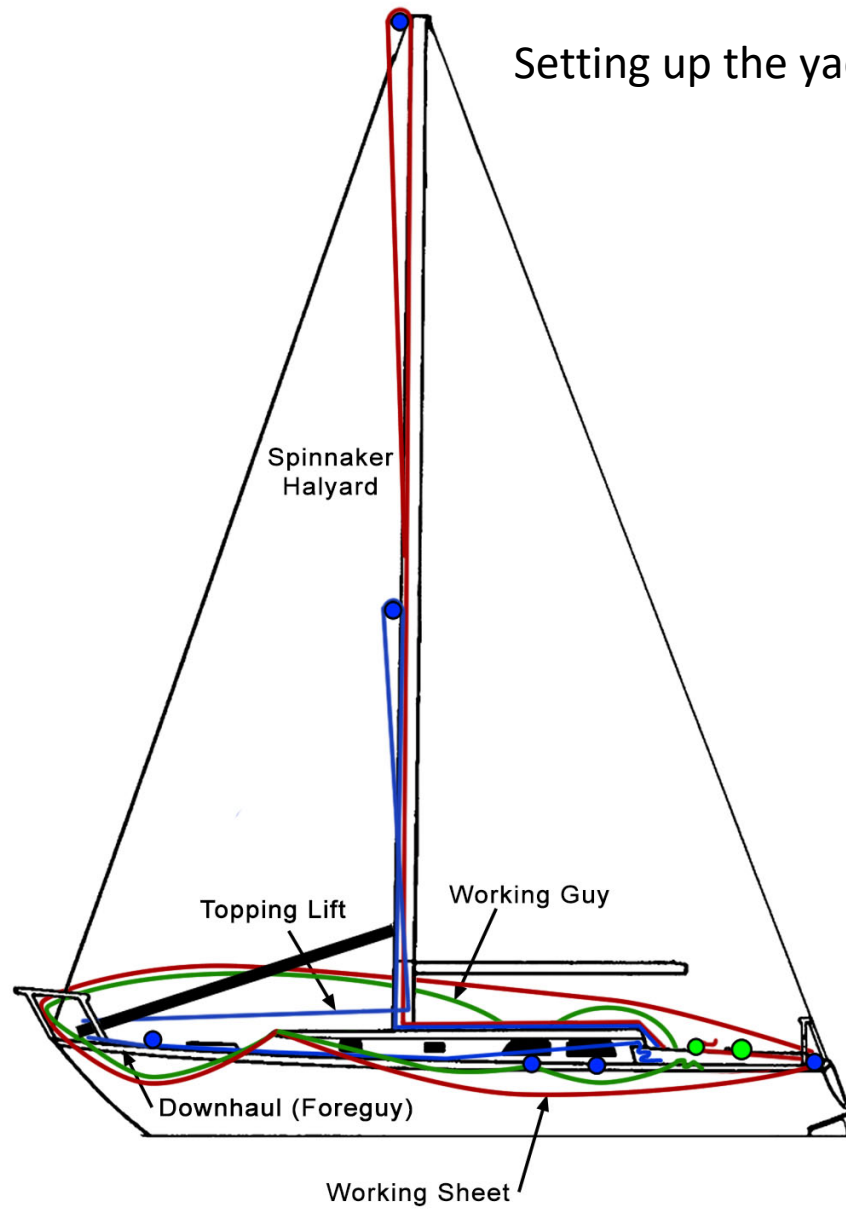
Blocks and Winches

- Block
- Winch



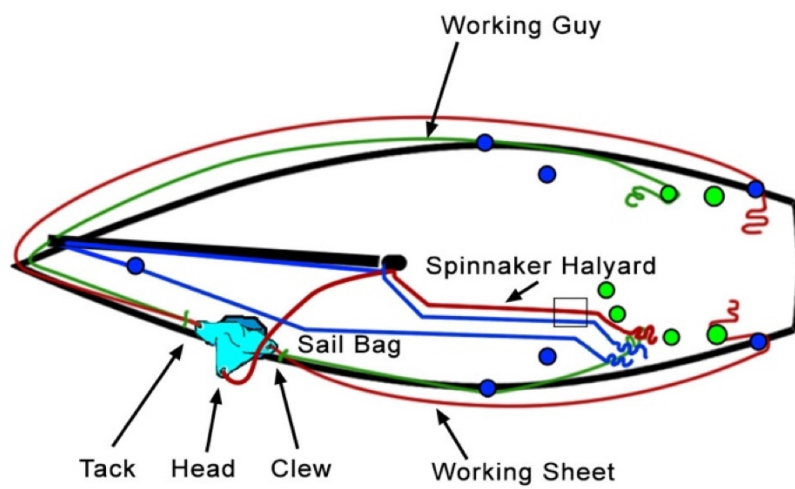
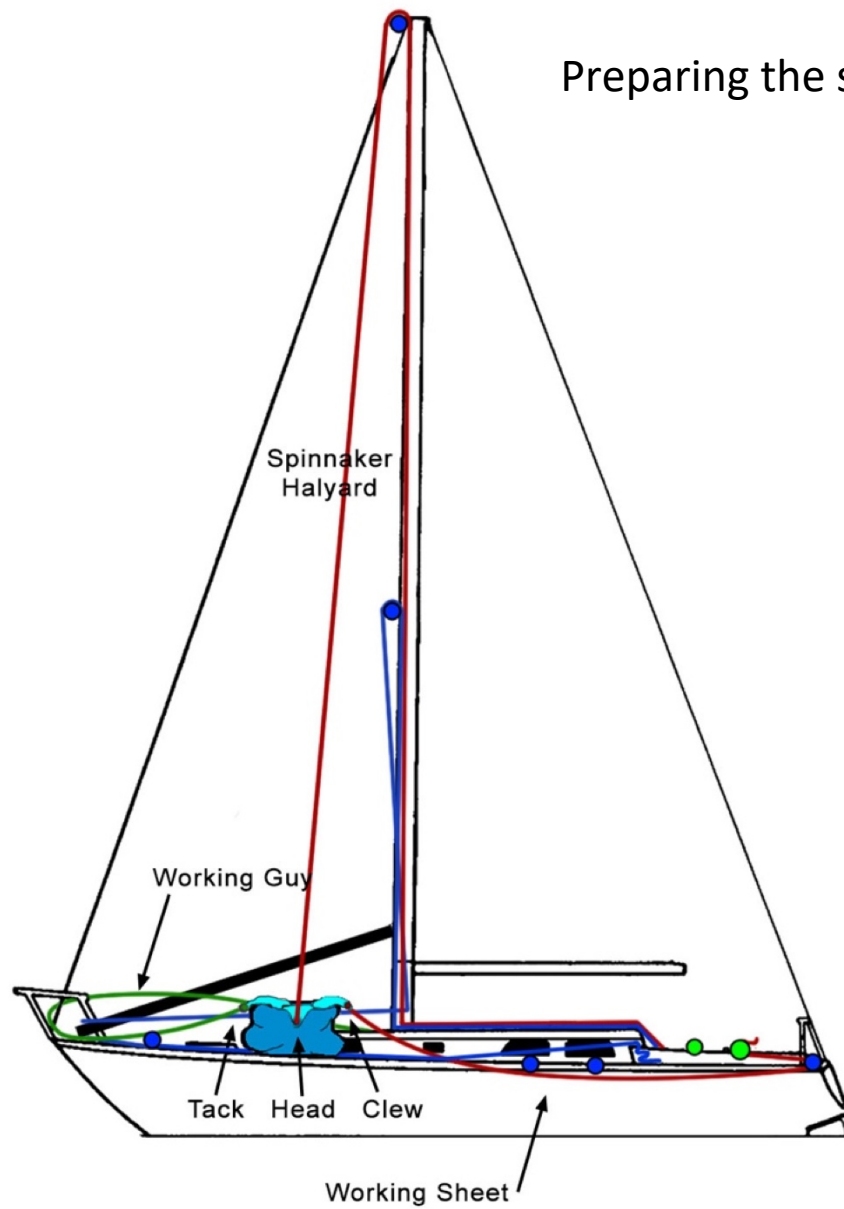
Setting up the yacht

- Block
- Winch



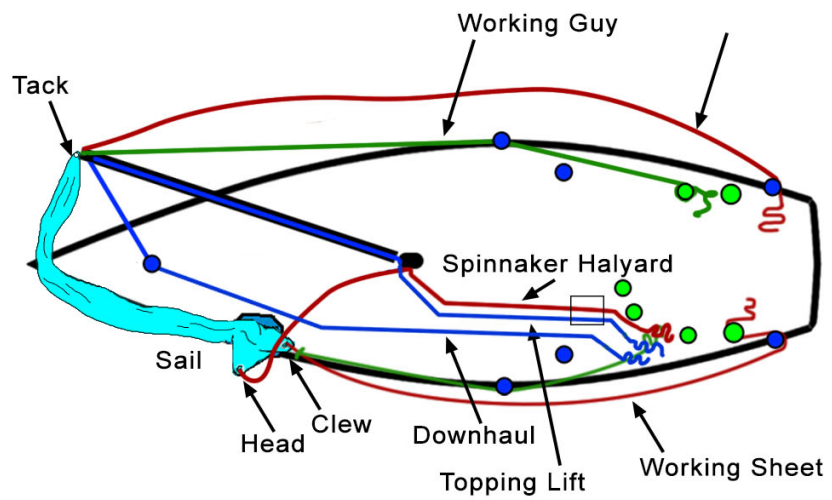
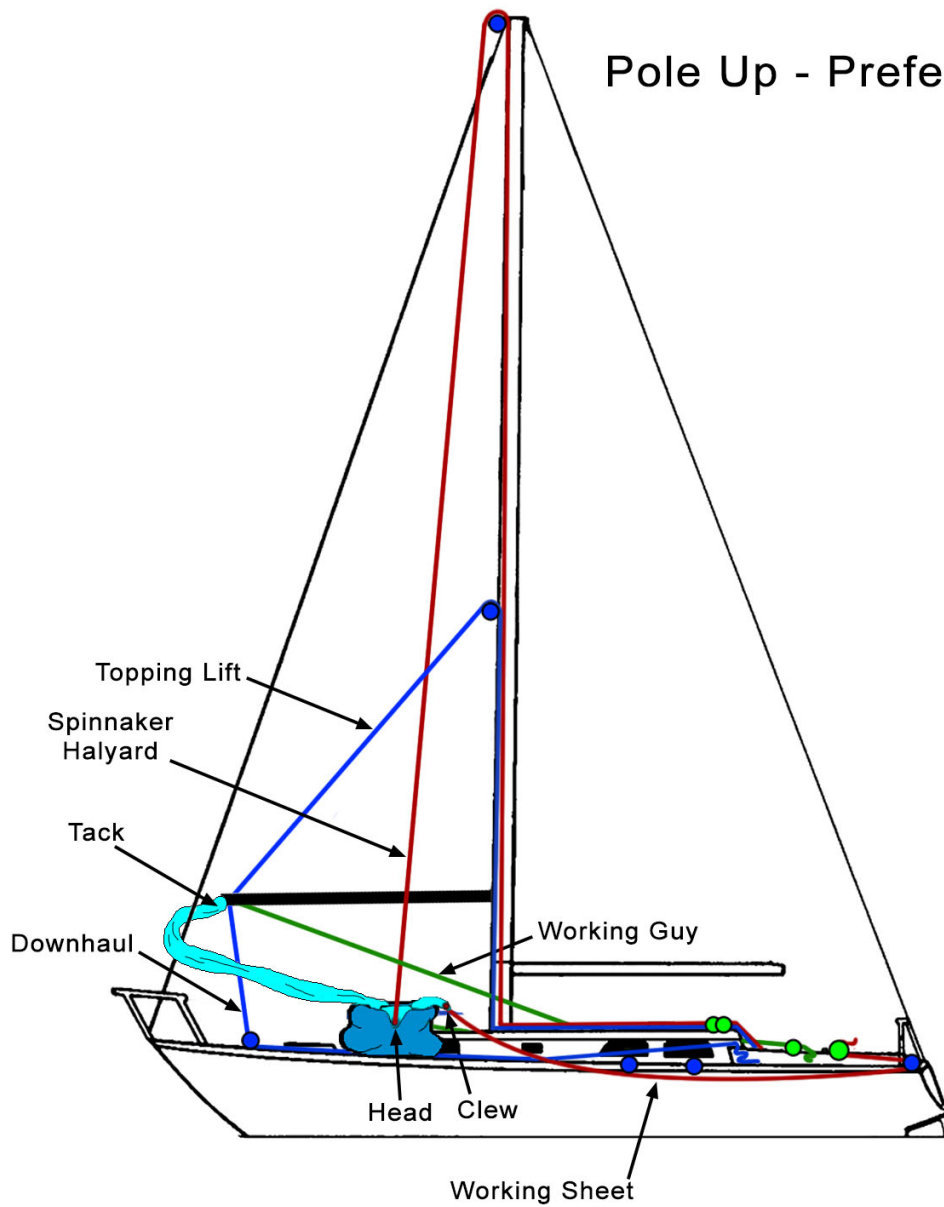
Preparing the spinnaker

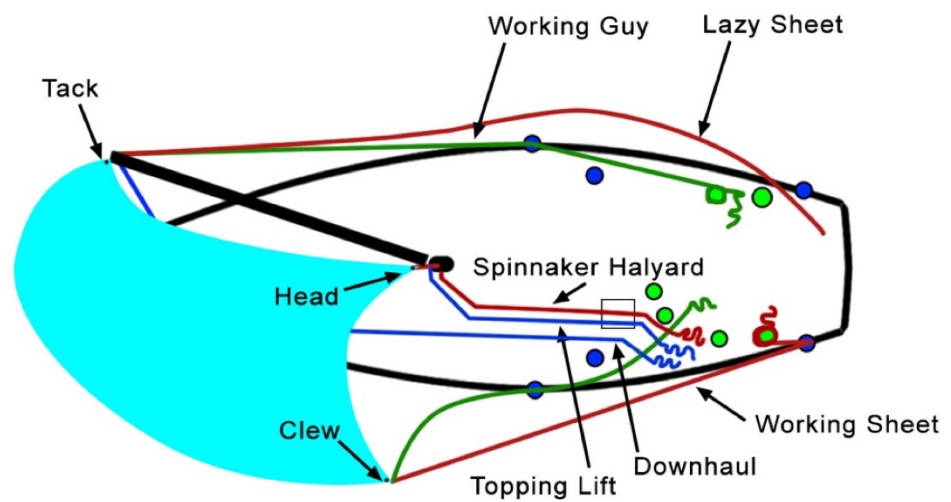
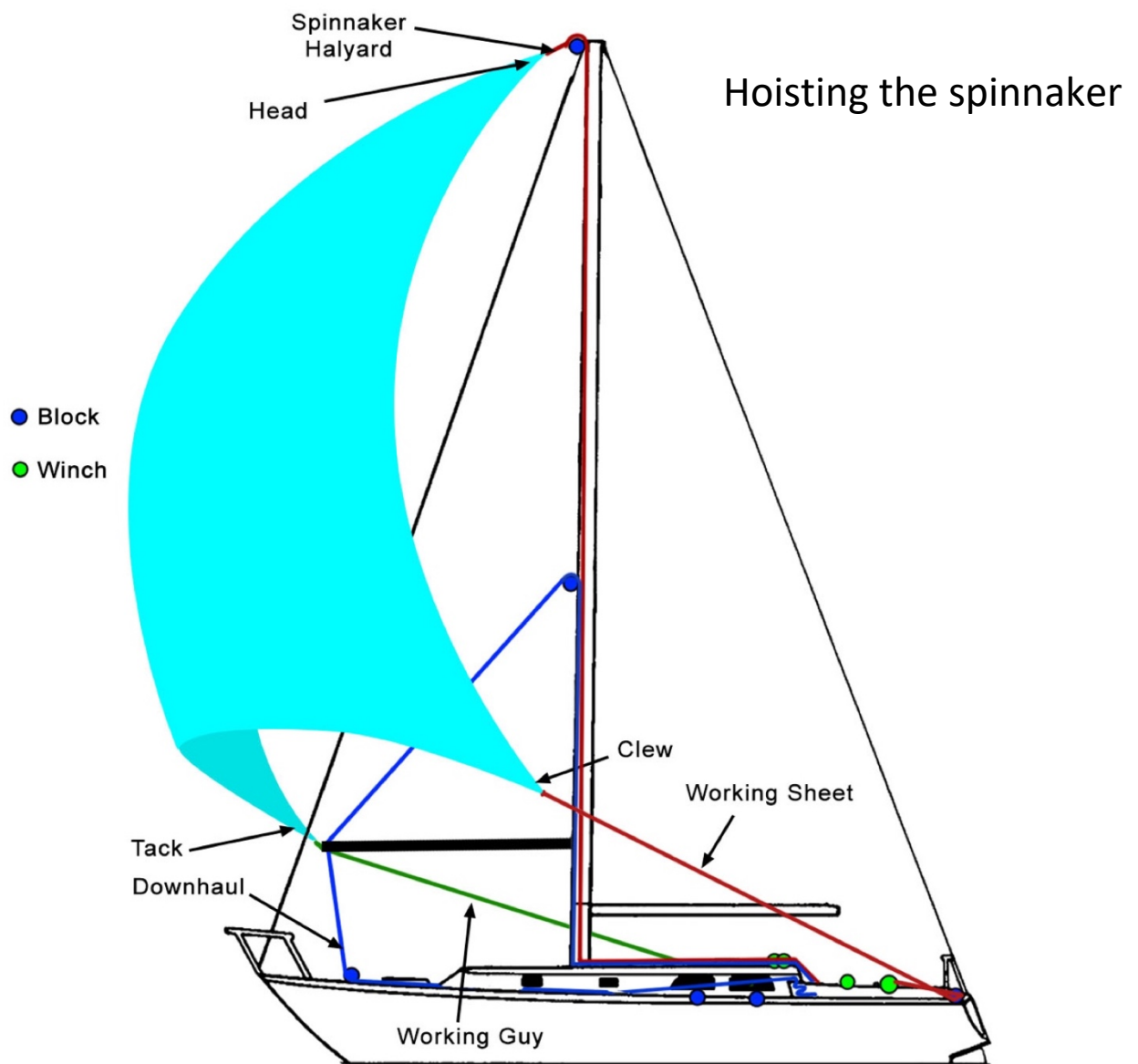
- Block
- Winch



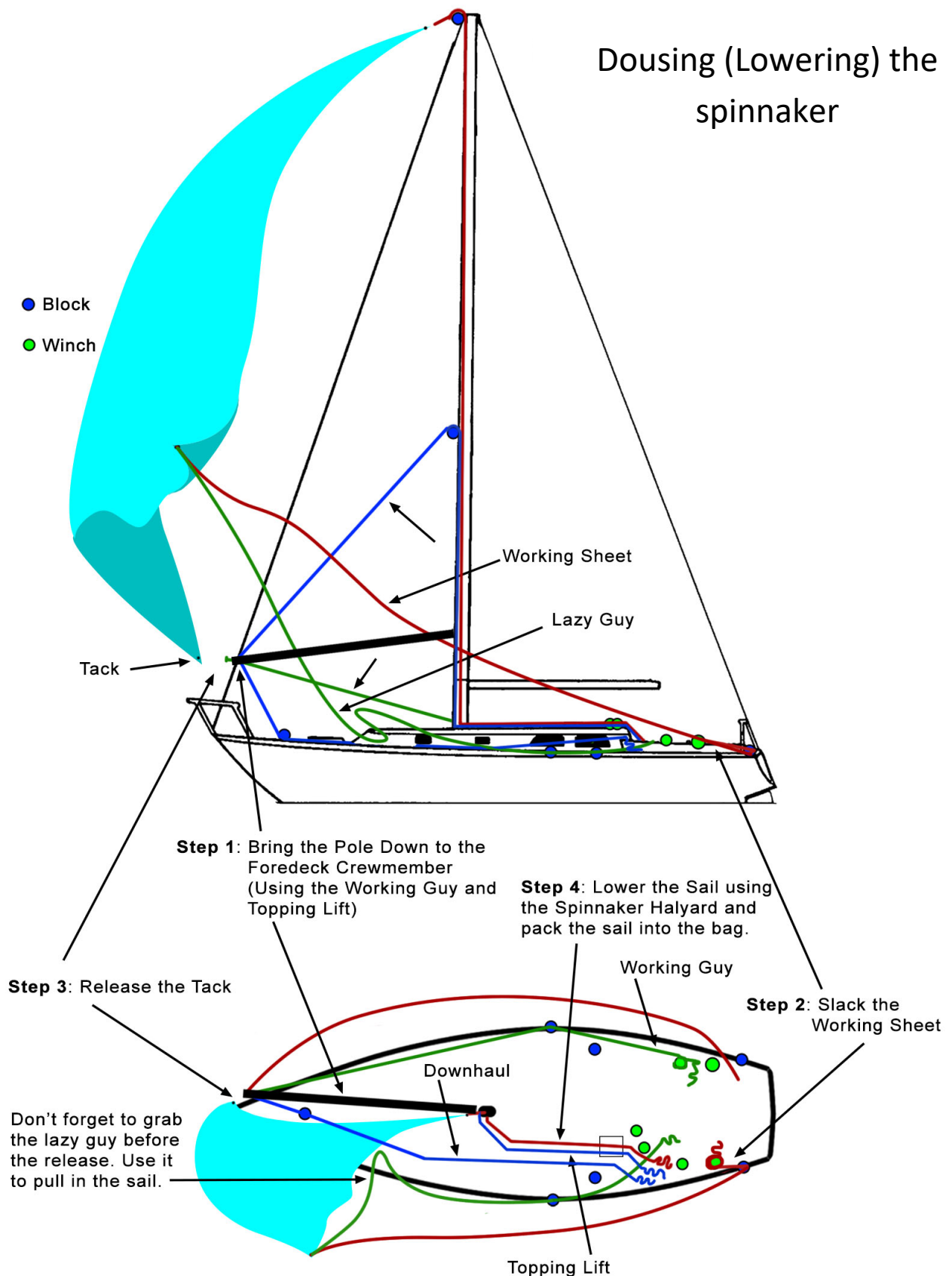
Pole Up - Prefeed the Guy

- Block
- Winch



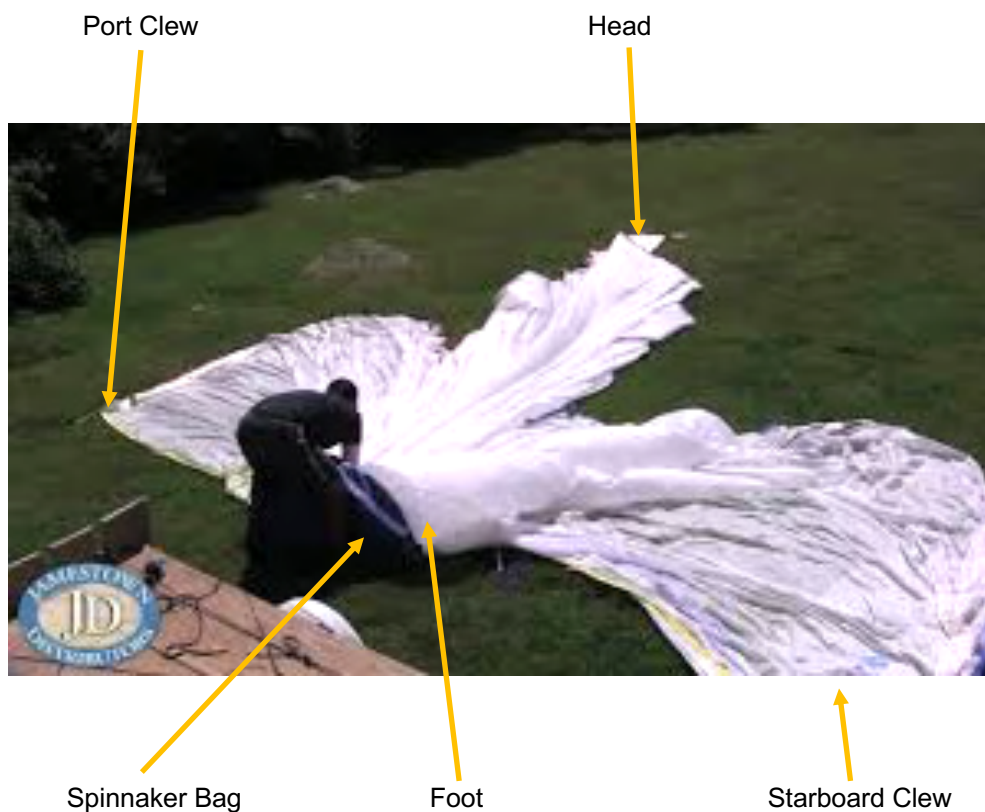


- **Drop spinnaker down companion way only!**
- Pull under boom – lazy jacks and sail bag prevents letter boxing over boom
- Ensure cooker off
- Secure sheets and guys to rails



3. **Re-packing the spinnaker.** The spinnaker is packed differently than the other sails. The aim is to stuff it into the spinnaker bag in exactly **the reverse order it comes out** when raised, **without twists**:

- Locate the head and 2 x clews; tie in cabin, head forward and port and starboard clew to corresponding side, aft.
- Run the edge tapes to remove and twists – pass from one hand to the other to ensure no twists develop
- Stuff the spinnaker into the spinnaker bag centre of the spinnaker foot, first, working out towards the clews.
- Then work towards the head stuffing the spinnaker into the bag
- Finish by tying the head and clew cringles to the respective positions on the spinnaker bag



CHAPTER 8 - ANCHORING

1. Both HR yachts are equipped with a bow mounted anchor and chain and kedge anchor with a short chain lead and a long warp; this is stowed in the starboard cockpit locker. There is no windlass on the yacht; the anchor must be deployed and raised manually. Care must be taken to avoid injury; gloves are provided and stored in the companion way step.

2. Calculations:

- Calculate the maximum depth of water during your stay on anchor:

$$\begin{array}{rcccl} \text{Min depth to} & & \text{Tidal drop to LW} & & \\ \text{anchor safely} & + & \text{during stay} & = & \text{Min indicated depth when} \\ & & & & \text{anchoring} \end{array}$$

$$\begin{array}{rcccl} \text{Rise of tide} & & \text{Min indicated depth} & & \\ \text{during stay} & + & \text{when anchoring} & = & \text{Maximum depth when} \\ & & & & \text{anchored} \end{array}$$

- Select a suitable anchorage and work out the required scope of chain or warp

Warp or Chain?	Minimum Length
Chain:	4 x max depth
Rope & chain:	6 x max depth

3. Method.

- Lay out the required scope of chain on deck. The distance from the bow to midship cleat is 5m. **Avoid dragging the chain over the anchor locker edge and damaging the teak and fibreglass.**
- OXO the chain so the unused length runs off the top of the OXO into the anchor locker – this enables the scope to be adjusted under load.
- Rig a friction line through the starboard forward cleat to control the rate the chain runs at.
- Recce the planned anchorage under power or sail.
- Approach the selected anchoring location, under power or sail, and **stop the yacht**. Lower 1/3 of the calculated scope quickly, so the anchor is on the seabed.
- As the yacht drifts back and the chain tightens, play out the remaining scope. Feel for the anchor setting (slight jerk and bow nod). Set using power if necessary.
- Set snubber. Record transits. Mount anchor watch. Complete ships log.

4. Technique.



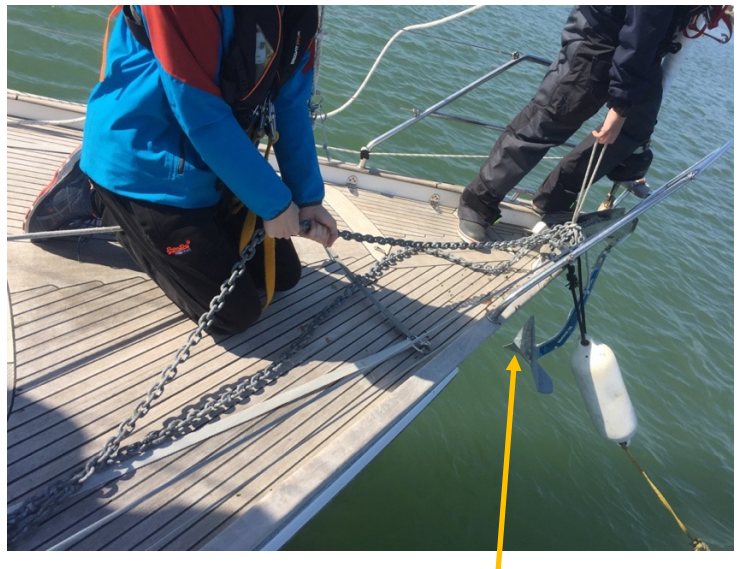
- Protect teak and fibreglass



- In-board end of chain on top of the OXO & led back into locker

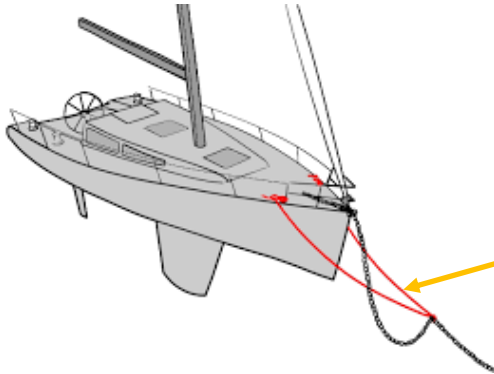


- Rig friction device to control rate chains runs out



- Untie anchor. Remove pin. Hang anchor clear of the water

- When yacht is stationary, drop 1/3 scope. Play out last 2/3 as the yacht drifts down tide/wind



- Feel the chain outboard of bow roller (vibration indicates dragging)
- Set anchor **snubber**, raise anchor ball or light. Record transits
- Set anchor watch and complete ships log

5. **Raising the Anchor.** Direct the helm to point the yacht in line with the chain. Motor or sail very slowly forward to reduce tension. Foredeck crew haul up anchor hand over hand and lay chain on deck. Keep helm informed of progress and continue to direct accordingly. Secure anchor with pin and tie. Return chain to anchor locker avoiding damage to teak deck and fibreglass.