Setting, Dousing and Furling Sails

Organization

When at sea the organization for setting and dousing sails will be determined by the Captain and the First Mate. With a large and well-trained crew, the crew may be able to be broken into two groups, one for the foremast and one for the mainmast. With small crews, it will become necessary for everyone to know and work all of the lines anywhere on the ship. In any event, particularly if watches are being set, it becomes imperative that everyone have a good understanding of all lines and maneuvers the ship may be asked to perform.

Safety

Sailing the brigantines safely is our primary goal and the Los Angeles Maritime Institute has an enviable safety record. We should stress, however, that these ships are NOT rides at Disneyland. These are large and powerful sailing vessels and you can be injured, or even killed, if proper procedures are not followed in a safe, orderly, and controlled fashion.

As a crewmember you have as much responsibility for the safe running of these vessels as any member of the crew, including the ship’s officers.

1. When laying aloft, crewmembers should always climb and descend on the weather side of the shrouds and the bowsprit. Because the ship heels from the pressure of the wind in the sails the angle is less and the wind helps hold you into the rigging instead of trying to blow you off.

2. When climbing aloft all persons leaving the deck will wear climbing harnesses. There are no exceptions.
3. No person may leave the deck to go aloft or out on the bowsprit until they get specific permission from either the Captain or the Mate of the Watch.

4. Once you get into position to work aloft, either on a yard, bowsprit or the cranelines, you should clip the safety harness into either the standing rigging or the safety stays located on the yards.

5. When climbing aloft you should only grasp the shrouds, not the ratlines. The lashings on ratlines can carry away and it’s not pleasant to have someone step on your hand.

6. Before laying out on a yard, you should check to make sure the yard is down solidly in its lifts, and that there is no slack in the braces which would allow the yard to swing.

7. Before laying onto a footrope or craneline you should announce your intentions to the other crewmembers on the yard or craneline by saying, “laying on starboard! (port)”. Before stepping on, you should wait for an acknowledgment from the people already on the footrope. You should also warn your shipmates before laying off.

8. All gear taken aloft must be secured to your body or to the ship with lanyards. This includes all tools, knives and marlinespikes, or any other gear that leaves the deck. If you don’t need it to work aloft, don’t bring it.

9. Always furl all headsails and staysails from the weather side, so that the sails cannot push you off.

10. Never get on the upper topsail yard to put the sail into its gear or to furl the sail if there are still shipmates on the lower topsail yard. Because these yards are so close together, putting the upper topsail into its gear or casting
off gaskets could hit people working on the lower yard.

11. When hauling on a line, keep a healthy distance between your hand and any blocks, cleats, or belaying pins. Getting a hand sucked into a block is a good way to lose your fingers.

12. Never cast a line off a cleat or pin unless you are sure what the line is for and until you check to see if the line is under a load.

13. You should not sit or stand on any yards unless you have permission from the ship’s officers (Captain and/or Mate).

14. When conducting sail maneuvers, or when setting sail, you should remain as quiet as possible so that commands can be heard and understood. Unnecessary talking or shouting is distracting and can cause injury.

15. Any maneuver can be stopped by anyone at any time by yelling “Avast!” If you see an action that is in danger of causing an injury, sing out immediately.

Setting Sail

The traditional order of setting sail is from the largest and lowest on the masts to the smallest and highest. This is generally followed on both masts, with the lower staysails being set before the upper ones. The headsails are usually set from the nearest to the farthest. On the foremast, the first square sail to be set is the lower topsail, followed by the upper topsail, then either the course or topgallant following. As the wind picks up and sail is shortened, the reverse order is followed. The topgallant would be taken in first, along with the upper staysails and the gaff topsail. The upper topsail would follow, then the course and last the lower topsail. When the fore course is taken in, the fore staysail would be set, as this sail will not be set when the course is being used. A good crew,
provided there are enough hands, can usually set all of the headsails at once. It is up to the captain and the mate to balance the sails between the masts so that excessive helm is not required to hold course as the sails are being set or doused.

**Unfurling**

Before sail can be set all gaskets have to be removed from the sails, both aloft and on deck. This is accomplished on the square sails by the crew laying out on the yard and getting the gaskets off the sail. This is done by crew working on both sides of the yard simultaneously. By tradition, the first person out on the yard on the weather side is in charge of that yard. You will take your commands from him. On laying out on the yard all gaskets should be cast off and allowed to hang vertically from the back side of the yard. As the gaskets are being taken off, the sail should be held on top of the yard until all of the gaskets are off. When this has been accomplished the person in command of the yard will enquire if everyone is ready. When they are ready he will say “Let fall”. At that time you will push the sail off the yard so that it is hanging “in its gear”. After the sail is put in its gear, then all gaskets should be coiled and hung over the front of the yard. It’s the responsibility of the yard captain to make sure all gaskets are coiled properly before laying off the yard.

In light winds taking the gaskets off the square sails can be accomplished easily by one person on each side of the yard. In higher winds, more people will be required to prevent the sail from ballooning out before all of the gaskets can be cast off. If this happens, a gasket can get jammed which could damage the sail and which could require that the gasket be cut to unfoul it.

All sails are set and doused from the deck, once unfurling is completed.

*The adults who work with our kids are passionate about life, alert, careful, optimistic and adventurous.*
Setting Square Sails

Square sails are set by pulling the clews of the sail down from the yardarms by use of the sheets. This is called “sheeting home”. Since the clewlines oppose the sheets, they have to be slacked off their pins before the sheets can be pulled. Likewise the buntlines and leechlines are also cast off before the sheets can be hauled. On the fore course, both tacks and sheets have to be pulled on to set the sail.

When the fore yard is braced any where other than square the forward clew, the one on the weather side, is hauled forward by its tack. It will be seen that the weather tack and the leeward sheet will have all of the strain on the sail. When the yard is braced square, both sheets will be handling the strain, while both tacks will have little force on them. Because of the size of the fore course, in any kind of wind a lot of muscle is required to pull down the weather tack and the leeward sheet.

The two lower square sails

The general sequence for setting the two lower square sails is as follows.

1. The Captain or Mate will say, “man the lower topsail gear”. All people setting the sail will report when they are ready. The buntlines and leechlines for that sail can be taken off the pins and left free to run. The other crew will man the clewlines and the sheets and announce they are ready by saying “Port (starboard) sheet manned and ready” and “Port (starboard) clewline manned and ready”.

2. Once the gear is manned, the mate will say “Sheet Home the Topsail”. At this point the clews are slacked and the sheets are hauled down and belayed.

For the fore course, the weather tack and leeward sheet will be manned as well as the clewlines. For this sail the commands will be:
1. “Man the course gear”
2. “Sheet Home the Fore Course.” The clewlines are slacked and the sail is sheeted home by pulling on the weather tack and leeward sheet.
3. If the yard is braced up sharp, the next command will be “board the tack”. At this point the tack will be taken to the winch head on top of the windlass and hauled around to get the leech of the sail tight.

The two upper square sails

On the two upper yards, additional gear will have to be manned as these sails are set by hauling the yard aloft using halyards. The commands, and actions, for these two sails are:

1. “Man the upper topsail (topgallant) gear”
   At this point the buntlines and leechlines can be cast off and left free to run. Because this is a hauling yard, the halyard and braces also have to be manned as well as the sheets and clewlines. As before, the crew should call out:

   “Port (starboard) sheet manned and ready”

   “Port (starboard) clewline manned and ready”

   “Halyard manned and ready”

   “Port (starboard) brace manned and ready”

2. “Sheet home the topsail, belay”. As before, the clewlines are slacked and the sheets are pulled down and belayed.

3. “Haul away the halyard, tend the braces”. Before the halyard on the upper topsail is hauled, the topgallant sheets should be taken off their pins. If you look at the geometry of the yard and its braces, it will become evident that the braces have to be eased as the yard is hauled aloft. It is the responsibility of the persons manning the braces to keep the braces taut and the yard in line with the yard below it as it is hauled up.
The Square Sail

UPPER TOPSAIL "IN ITS GEAR"

- cross tree
- fixed lift
- inner buntline
- outer buntline
- fixed lift
- halyard tye
- upper topsail sheet
- lower topsail yard
- foot bull's eyes, and lizards pulled together

UPPER TOPSAIL SET

- cross tree
- lizard
- clewline
- lifts hanging slack
- bull's eye
- inner buntlines
- outer buntlines
- sheet
- lower topsail yard
4. “That’s well the halyard, belay”. As the yard is being hauled aloft the clewlines, buntlines and leechlines will all go up with the yard. It is a common mistake for new crew to put a loose line that is hanging down around a pin. If this is done before the yard is all the way up, damage to the sail and/or yard can result. Crew at the pin rails should make sure that the clewlines, buntlines and leechlines are all free to run and that they don’t foul in the fairleads as the yard is hoisted.

Setting headsails and staysails

Setting headsails and staysails is relatively simple. The three lines controlling these sails are the sheets, halyard and downhaul. The downhaul opposes the halyard. The commands are:

1. “Man the fore staysail gear.” At this point the downhaul, halyard and lee sheet should be manned. The weather sheet should be off its pin and left free to run. The downhaul coil should be taken off its pin and put on the deck in such a way that it will be free to run without fouling.

2. “Cast off the downhaul, haul away the halyard, tend the sheets”. The downhaul is taken off its pin and left free to run. The halyard is hauled up while other crew stand by to pull in on the sheet once the sail has been fully hoisted.

3. “Well the halyard, belay.”

Main Staysail

Because the main staysail is set on a boom it is handled in a slightly different manner. The clew of this sail has to be pulled aft by a line called the clew outhaul. The sheet is attached to the boom of this sail and not to the sail itself. The commands are:
1. “Man the main staysail gear” This includes manning the clewouthaul as well as the downhaul, sheet and halyard.
2. “Cast off the downhaul, haul away the halyard”.
3. “Haul aft the clewouthaul.”

Setting staysails in any kind of a wind can be dangerous as the sails tend to flog before they can be sheeted in. The bullet blocks on the sheet pendants are called “widow makers” for good reason. Therefore all hands should be clear of the sheet pendants before these sails are set, in order to avoid potentially serious injury. The downhauls should be cast off and that area cleared of personnel before the halyards are hauled on.

**Setting the Mainsail**

This sail is set by hauling it aloft using two different halyards, the throat and the peak. Before this sail can be set, the quarter tackles, which keep the boom in place when the sail is not set, have to be taken off and stowed. Also the gaff topsail sheet should be off the pin and tended, as well as the slab reefing lines and the flag halyard which runs to the end of the gaff.

The commands are:

1. “Man the mainsail gear”. At this point, the two halyard crews should get in position and made ready to haul.

2. “Haul away the halyards together”.

3. “Hold the peak, belay the throat” The object of this exercise is to raise the gaff in a horizontal position until the throat halyard has fully stretched out the luff of the sail. The peak halyard is then held while the throat halyard is made fast.
4. “Haul away the peak halyard.” After the throat halyard is belayed, the peak halyard is hauled until the leech of the mainsail becomes taut.

5. “Well the peak, belay.”

**Setting the Gaff Topsail**

The gaff topsail is set flying. By that, we mean that the sail is set by hauling the sail up from the deck to its position above the gaff. The first step in this process is to attach a nock line to the cringle at the nock of the gaff topsail. Then the halyard, sheet and tack are attached, respectively to the head, clew and tack of the sail. When this is made ready the commands to set will be:

1. “Man the gaff topsail gear.” The halyard, sheet, nock, and tack are manned, with the crew singing out when they are ready.

2. “Haul away the halyard and nock.” At this command the sail is hauled aloft by its halyard and nock. The sheet is rounded in so that it doesn’t droop down, but not so tight that the sail fills with wind.

3. “Set the nock and halyard, belay.” After the nock is hauled taut and belayed, the halyard is hauled taut and belayed.

4. “Sheet home the gaff topsail, belay.” After the halyard and nock are tight, the sheet is hauled as taut as possible and then belayed.

5. “Set the tack, belay.” The tack is then hauled down taut and belayed.

**Dousing Sails**
The procedures for dousing sail are essentially the reverse of the actions used in setting them. Because you have gravity working in your favor, it can be done generally more quickly and with fewer crew manning the gear.

Before sails can be doused their halyards have to be faked so that they will run without fouling.

**Dousing Square Sails**

Square sails are taken in from top to bottom, with the exception of the course, which is generally taken in before the lower topsail is doused.

**Dousing the two upper square sails**

The topgallant is usually taken in first, followed by the upper topsail. The sequence of commands are:

1. “Man the topgallant gear.” At this command, the halyard, sheets, clewlines and braces are manned. The buntlines and leechlines are taken off their pins and left hanging.

2. “Clew down,” At this command the halyard is eased away while the slack is taken out of the clewlines as the yard comes down. Occasionally, the yard may need additional help by actively hauling on the clewlines, but most of the time gravity will do the job for you. The braces are rounded in as the yard comes down to keep them taut and the yard from swinging. The sheets are kept taut by a turn around their pins. Casting off the sheets on the order “clew down” is the single most common error in taking in the squares.

3. “Clew up.” Once the yard has settled in its lifts and the halyard becomes slack, the sheets are taken off their pins and are left free to run.
This command should not be given until the Captain or Mate visually makes sure the lifts are taut. The clewlines are then hauled on which brings the clews of the sail up in its gear just below the yardarms. In practice, with an experienced crew, there will be no appreciable pause between clew down and clew up. Without further command, the buntlines and leechlines are hauled on bringing the sail all the way up in its gear.

4. After clew up, the halyard should have its slack taken out and then belayed to support the center of the yard. If the upper topsail is to be taken in next, then the topgallant sheets should be left off their pins until the upper topsail is in its lifts.

**Upper Topsail**

The sequence of commands and the actions to be taken for taking in the upper topsail are identical with the topgallant except, of course, for the name of the sail. Before taking in this sail, be sure that the topgallant sheets are off their pins.

**Lower Topsail and Fore Course**

These sails are simply *clewed up*, braces do not have to be manned. On the fore course, both sheets and tacks have to be slacked off in order to clew the sail up. If the yards are braced up, the lee clew should be brought up before the weather clew.

**Dousing Headsails and Staysails**

As in setting these sails, they have a tendency to flog and whip around in any kind of wind before they are completely doused. All crew and guests should be kept well clear of the clews and sheets while these sails are coming down.

The sequence of commands are as follows:

1. “*Man the fore staysail gear.*” At this command the sheets, halyard and downhaul are manned. The downhaul should be led well aft so it can be pulled down without exposing crew to the flogging of the clew and sheets.

2. “*Slack away the halyard, haul away the downhaul.*” At this command the halyard should be eased slowly while the downhaul is used to spill wind from the sail. Once the wind
has been spilled, the halyard can be slacked more quickly pulling the sail down its stay. The sheets should be eased in such a manner as to minimize sail flogging, but not kept so tight that it becomes hard to pull down the sail by its downhaul.

The Main Staysail

The main staysail, again because it sets on a boom, is handled in a slightly different manner. The actions are the same as for the other triangular sails, but instead of the sheet being eased, the clew outhaul is eased instead. After the downhaul has brought the sail all the way down, then the clew outhaul can be tightened again.

The Gaff Topsail

The sequence of commands are:

1. “Man the gaff topsail gear.” At this command the halyard, sheet, tack and nock are manned and made ready.

2. “Ease the sheet and nock.” At this command the sheet and nock should be eased.

3. “Ease the halyard, haul on the tack.” With the sheet and nock still being eased, the halyard is slacked while the sail is pulled down to the deck by its tack.

4. When the sail is down to the deck, it is detached from its gear and all lines are secured.

The Mainsail

Before the mainsail can be doused, the ensign should be brought in and stowed, quarter tackles passed, boom lifts brought to their marks and belayed, gaskets draped over the boom, and crew stationed on either side of the boom to fake the sail as it comes down.

The sequence of commands are:
1. “Man the mainsail gear.” The throat and peak halyards are manned, and crew are detailed to stand by to take in on the slab reefing lines, flag halyard and gaff topsail sheet as the gaff is lowered.

2. “Ease away the halyards together.” The halyards are then eased away. The Captain or Mate adjusts the halyards as the sail is lowered by holding or slowing the slacking of the halyards to maintain the peak of the gaff at the same angle relative to the deck as the sail comes down. After the throat halyard is down, the peak halyard is slacked away until the gaff is parallel with the boom.

**Furling Sail**

After all the sails are doused from the deck, then crew are sent aloft to furl. In light air, sails can be left hanging in their gear, but in order to reduce windage aloft and to avoid chafing, sails should be furled in heavier air. There are two types of furls, the *sea furl* when appearance is not a factor, and the *harbor furl* when you are trying to make to ship look its best.

**Sea Furling Square Sails**

Square sails can be quickly sea furled by a couple of crewmembers working on the same side of the yard first, and then moving over to furl the other side. If you do furl one side before the other, the weather side should be furled first. This is done by rolling the sail up underneath the yard and quickly passing the gaskets around the furled sail.

**Harbor Furling Square Sails**

Harbor furling is more involved and requires enough crewmembers to man both sides of the yard at the same time. As in laying aloft to put sails in their gear, the first person out on the footrope on the weather side is in charge of the sail.

Crew members should lay out on the footropes, casting loose the gaskets and hanging them over the back side of the yard as they move out.

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*The adults who work with our kids accept and delegate responsibility easily, are resilient, and see failure as information and not as defeat.*
Without further command, the foot of the sail, which having been brought up by the buntlines is within arm’s reach, is brought up and put under the belly of each crew. When all crew are ready, each crewmember will reach down and bring up another bight and put it on top of the foot of the sail. Eventually enough bights will be brought up so that you reach the yard cloth. The yard cloth is a sacrificial cloth that is sewed into the backside of the head of the sail. When the yard cloth is reached, the folded sail is pushed off the yard and a tight “sausage” is made of the sail with only the yard cloth showing.

When all crew are ready the crewmember in charge of the yard will signal and all crew will roll the sail up on top of the yard. At this point the only part of sail exposed to the weather
should be the yard cloth. Without further command, all gaskets are passed and secured.

**Sea Furling Staysails** All staysails are basically furled the same way. Working from the cranelines, crewmembers furl the sail into itself tightly enough so that gaskets can be passed around the sail. The sail material on the outside should be stretched out to form a protective skin over the rest of the sail. This can be quickly done with only a couple of crew members.

**Harbor Furling Staysails**

To do this properly, you need one crew member on each side of the sail working from the cranelines. First, shake out the sail so that it hangs vertically. Next, locate the miter seam. The miter seam runs from the clew to the center of the luff. Position the miter seam vertically along the aft side of the sail. Then, with each crew member working on opposite sides of the sail, roll the edges inward and keep rolling until you meet at the miter seam. Tuck in the clew of the sail and pass your gaskets. In appearance the sail should look like a smooth, squared off tight cylinder of sail cloth.
Harbor Furling Headsails

In practice, headsails are furled using the same techniques as for staysails. The only difference is that you are working in a horizontal plane instead of vertically. When finished the miter seam should lie along the top side of each sail and the outside covering of sail cloth should be as smooth as possible.

Furling the Main Staysail

This sail is harbor furled just like a headsail. For this sail, it is customary to *swedish furl* with a long gasket once the sail has been rolled up.

![Swedish Furling](image)

Furling the Mainsail

This sail is furled as it is doused by folding the sail back and forth like an accordion between the *lazy jacks*. Once the sail is down, the gaskets are passed. It helps to have crew members stationed on both sides of the boom to fold the sail as it comes down. The reef *nettles* should be tucked into the sail.

Reefing Sail

When the wind gets too strong for the amount of sail being carried, it becomes necessary to reduce sail area. This is done by either taking in individual sails or by *reefing* a sail to reduce its area. On the brigantines, only two sails have reef points, the Mainsail, which has two sets of
reef points, and the Fore Staysail, which has one set.

**Reefing the Mainsail**

The mainsail can either be reefed before or after it is set. To reef before it is set, the reef cringle (at the tack of the sail) has a line passed through it and belayed to a pin on the boom that is there for that purpose. Next the slab reefing line is hauled taut, which in effect establishes a new clew for the sail. Next, the reef nettles are passed around the resulting roll of sail and tied using reef knots. The sail is then set in the usual fashion, except of course that the throat of the sail will be lower when the sail is up.

To reef the mainsail after it has been set, you need crewmembers standing by on the throat and peak halyards, the slab reefing line, and the reef cringle line. The throat and peak halyards are eased and at the same time the slab reefing line and the reef cringle line are pulled taut and set up as the sail comes down. The reef nettles are passed as before and the throat halyard, if need be, can be tightened by its jigger. The peak halyard is then hauled on to re-shape the sail to complete the process.

To *shake out* the reef, the reef nettles are first untied. Then, with hands standing by the peak and throat halyards, the reef cringle and the slab reefing lines are let go. The peak is then lowered down until the gaff is horizontal. At that point the peak and throat halyards are hauled on together and the sail is re-set in the normal fashion.

**Reefing the Fore Staysail**

The fore staysail is reefed before the sail is set. A line is passed through the reef cringle at the luff of the sail, brought down tight, and belayed. The sheets are attached at the reef clew cringle and the foot of the sail is tied up into a roll along the foot of the sail using the reef nettles tied with a reef knot. After the reef is put in, the sail is set normally using the halyard and trimming
the sheets. To take out the reef, the process is reversed.