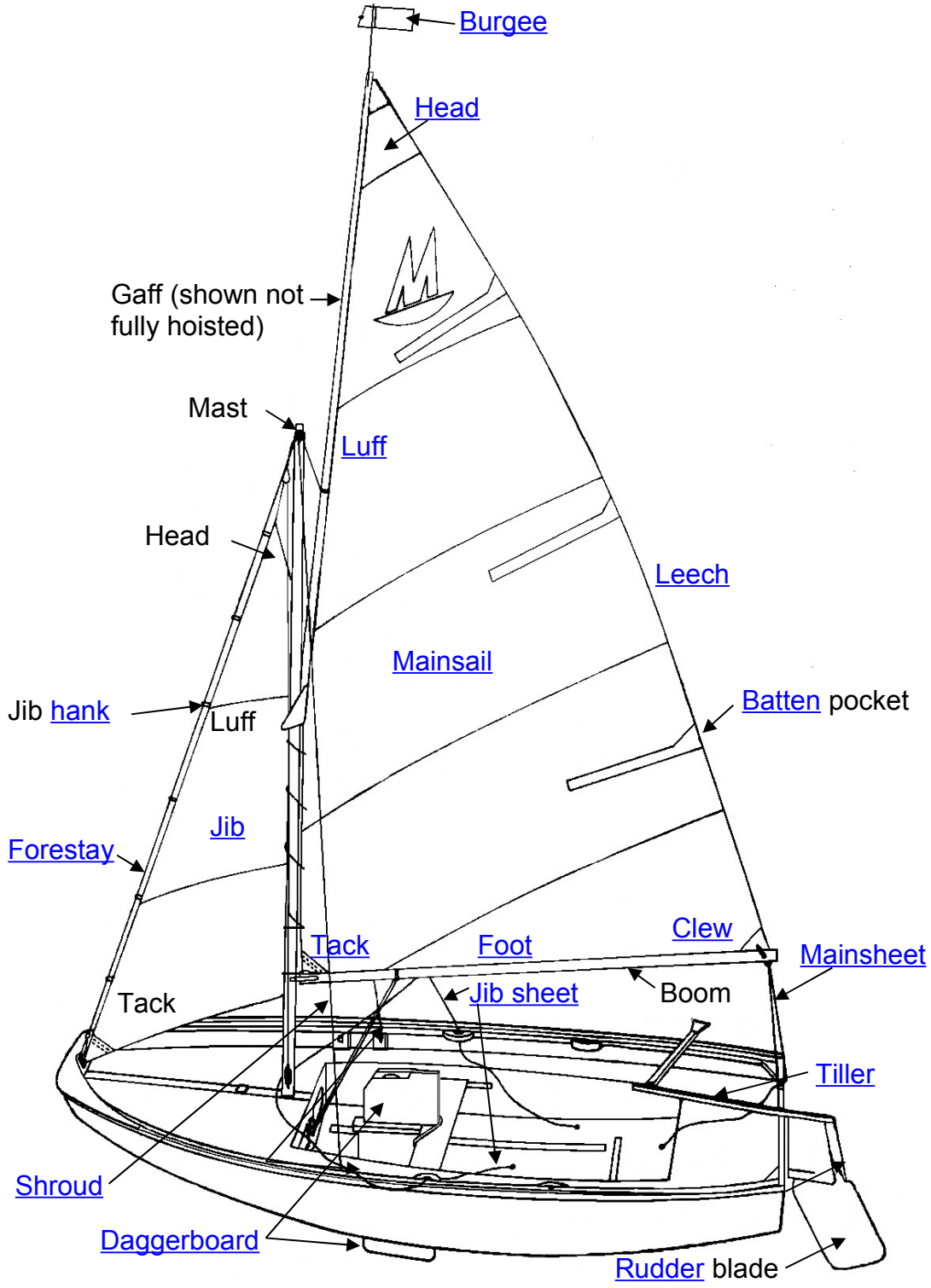
This is a very basic guide to rigging a Mirror dinghy aimed at those new to the class. Mirrors have two different rigs, the Gunter rig which is the traditional rig comprising a short mast (about 3290mm long, almost exactly the same length as the hull), a wooden gaff and a boom. Most Mirrors, particularly older boats, have this rig. More recently the Bermuda rig has been adopted comprising a longer (about 5m long) alloy mast and boom.

Here is a diagram of a Mirror dinghy with basic Gunter rig (i.e. no spinnaker or other optional controls) and the basic parts identified.



A sensible order for putting it together is as follows:

- Turn the boat so it is facing into the wind.
- Check all the buoyancy tanks with drain holes have bungs fitted. Don't forget the forward buoyancy tank drain holes. There are two of these, and they are inside the stowage cuddies (one on each side).
- There should be 3, long (about 3300mm), wire ropes. Two of these should be the same length. The two equal length ones are the shrouds. The other one is the forestay.
- If your boat has a Gunter rig there should be a short wire rope, about 175mm long with a loop in each end. This is the jib halyard strop. The larger loop passes over the top of the mast so it hangs over the forward face of the mast (the gooseneck fitting is on the aft face of the mast). The smaller loop should have a block (pulley) attached to it. The jib halyard should be threaded through the block from bow to stern. With the Bermuda mast the jib halyard should already be running up inside the mast and emerging just below the forestay. At this stage loosely tie the ends of the jib halyard together to stop one end getting out of reach.
- Loop the two shrouds over the top of the mast (Gunter rig), or slot them into the "T" terminal holes on the sides of the mast or attach them to the shroud tags with clevis pins and rings (Bermuda mast).
- Loop the forestay over the top of the mast (Gunter rig), or slot it into the front "T" terminal hole or attach it to the forestay tag with a clevis pin and ring (Bermuda mast).
- If you have a Gunter rig, attach the main halyard onto the metal band which is about half way along the gaff. Thread the other end of the main halyard through the pulley at the top of the mast with the halyard running from stern to bow. If you have a Bermuda mast the main halyard should already be running up inside the mast and emerging right at the top of the mast. Tie the end of the main halyard around the mast below gooseneck level to stop it going astray.
- Attached the shrouds to the aft (back) shroud attachment points on each side of the boat. These may attach with shackles or with clevis pins and rings. Some boats only have the aft shroud attachment points.
- If you have a Bermuda mast, put the burgee (flag) into the burgee holder at the top of the mast.
- Set the mast upright in the aft mast step (near the back edge of the foredeck).
- Fasten the forestay to the forestay attachment fitting in the middle of the bow transom. Typically this is done by tying a piece of line to the end of the forestay, running this down to the attachment fitting, back up to the forestay and back down again, this is repeated twice more, finishing at the end of the forestay. By pulling on the line the forestay and shrouds are tensioned. A knot is tied to maintain the tension.

- Check the mast. Looking from the front of the boat it should be upright. If not you need to check the shrouds as equal in length. Looking from the side of the boat, it should be almost upright, sloping back slightly (this slope is known as mast rake) so the top of the mast is nearly over the front of the daggerboard case. If not you may need to change how the shroud attaches to the hull to lengthen or shorten them. Some boats have a range of positions for attaching the shrouds, so the mast rake can be set more precisely.
- Loop the kicking strap over the boom, or attach it if not attached already.
- Attach the boom to the mast with the gooseneck fitting.
- Thread the mainsheet. Mainsheet systems vary. The most common system on Gunter rigged boats is an aft mainsheet. On this system the mainsheet starts on the port side of the transom (normally threaded through a hole where a figure of eight knot is tied), then up through the block on the end of the boom, then down to the block on the starboard side of the transom, and then to the helmsman's hand. If the boat has centre mainsheet, it is probably easier to start at the block adjacent to the thwart and daggerboard case, then up to the block on the boom, along the boom, passing through the constraining loop or boom sleeve, to the block at the end of the boom and then down to finish on the bridle. On some boats there is a block on the bridle, in which case the mainsheet goes through this block and then come back up to finish on the becket of the block on the end of the boom or on the boom itself.
- Attach the rudder and tiller to the transom.
- If you have a Gunter rig, slide the head of the mainsail into the slot in the gaff by the gaff jaws and then slide it up the slot and fasten the head about 76mm from the top end of the gaff (there should be a painted band at this point) with a short length of line. There should also be a short length of line or elastic tied to one of the gaff jaws. If you have a Bermuda rig, attach the main halyard to the head of the mainsail.
- Insert the sail battens (thin end first) into the batten pockets. The top batten is shorter than the lower two.
- Fasten the clew of the mainsail to the end of the boom. There maybe a track on the boom for this, otherwise use one short piece of line around the boom and another piece from the clew to the end of the boom. When set, the bottom of the sail should not be more than one hand's width vertically from the boom. You may need to make final adjustments to this once the mainsail is hoisted, laced and the downhaul set.
- With a Gunter rig, attach the burgee to the top end of the gaff. Then start to pull up the main halyard in which will raise the gaff with mainsail attached. This has to be done in stages. With the gaff jaws hoisted above the gooseneck and any spinnaker pole ring, tie the line or elastic attached to one of the gaff jaws to the other gaff jaw so the gaff jaws

cannot jump off the mast. Needless to say, an extra pair of hands is needed to do this. Otherwise, you will need to cleat the main halyard at each stage. Start lacing the luff of the mainsail from the eyelet below the gaff jaws around the mast. A plain spiral is commonly used for this. Pull the main halyard up some more and continue lacing until you reach the lacing eye above the tack of the sail. The aim is to have the leading edge of the sail straight, so it needs to follow the line established by the gaff. Having the mainsail about two fingers width away from the mast. The tension of the lacing should be adjusted to achieve this should do this. At this point finish the lacing, passing the line around the mast and tying it off (round turn and two half hitches) at the lacing eye above the tack. Pull the gaff up fully. Make sure nothing (kicking strap, mainsheet,….) is stopping the boom from rising. The tack may end up 200mm or so above the boom, this is quite normal. With the gaff right up and as vertical as possible, cleat the main halyard.

- With a Bermuda rig, thread the head of the mainsail into the groove on the back of the mast and pull up the main halyard until the sail reaches the bottom of the black band at the top of the mast.
- The tack of the mainsail is held down with a line called a downhaul. This should be attached now.
- The tack of the mainsail is held near the mast by another short piece of line (Gunter rig). The exact position of the tack will depend of the cut of the sail. It is best to experiment to find a position that gives the fewest creases and the best mainsail shape. There is less need for this line on a Bermuda rigged boat, but it can be useful in heavy winds with a lot of outhaul tension.
- With the tack of the mainsail set, the exact position of the clew of the mainsail can now be adjusted and finalised.
- The kicking strap can now be set. As a general rule, in light winds, no tension. In medium winds a small amount of tension. In heavy winds, lots of tension. On a basic boat you may not have any means of adjusting the kicking strap, just a knot (round turn and two half hitches) where it attaches to the bulkhead under the mast.
- Attach the tack of the jib to the forestay attachment fitting with a short length of line or a shackle. The tack of the jib should be roughly level with, or below the bow shapes.
- Attach the jib hanks to the forestay, starting with the lowest one.
- Attach the head of the jib to one end of the jib halyard. If one end of the halyard has a loop, use that end with a shackle. If neither end has a loop, use either end and tie a bowline.
- Attach the jib sheets to the clew of the jib. In general, the jib sheets are a single length of rope attached to the jib half way along. In some cases there is a loop half way along which passed through the cringle at the clew and both ends are passed through the loop. You can do something similar even if there is no loop. Another method is to tie a

figure of eight knot in the middle of the jib sheet, thread one end through the cringle, pull the knot up to the sail and tie another figure of eight knot on the other side of the cringle.

- Thread the jib sheets through the jib fairleads. The sheets should go inside the shrouds. Tie figure of eight knots in the ends of the jib sheets.
- Hoist the jib by pulling the jib halyard. In light to medium winds the halyard should be just hand tight. In heavy winds have the halyard much tighter.
- Put the daggerboard in the boat ready for use.

The boat is now ready to launch.