



## Marine Education Centre

Te Whare Wānanga o Ngā Matataua a Tangaroa

Scouts NZ - Region 1

### Reefing a sail

Personal Challenges:

Helmsman Task 7

Sailor Task 7

Reefing is the term used in yachting when the sail area is temporarily reduced in strong winds.

It is essential that a sail can be reefed. Reefing points must be sewn into the main sail to enable it to be effectively reefed.

Reefing a sail achieves two things:

1. It reduces the sail area therefore reducing the wind's effect on that sail.
2. It lowers the sail's centre of effect.

When these two effects are combined, the force acting on the sail is reduced which is also acting lower down. These results both reduce the capsizing force.

Cutter and crown cutter main sails must be capable of being reefed. Reef points of sufficient strength must be sewn into the main sail in a line about 900mm above the foot.

Scout cutters are difficult to handle when under sail in winds stronger than 20 knots.

Always check the weather forecast and pay particular attention when winds stronger than 20 knots are forecast



Picture 1: Attach the reef tack



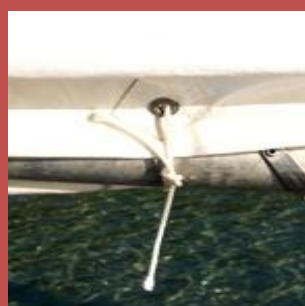
Picture 2: Tie a bowline at the reef clew



Picture 3: Tension the outhaul



Picture 4: Hoist the main sail



Picture 5: Tie the reef points

**Step 1:** Safely anchor or moor the vessel. Ensure all the crew are safe and check for signs of hypothermia.

Consider notifying a contact person regarding your intentions giving your location and ETD, and ETA at your revised destination.

Undertake an overall inspection of the vessel and rigging.

**Step 2:** Lower the main sail. Attach the reef tack to the gooseneck using the shackle provided or a small length of cord. See Picture 1.

**Step 3:** Using a 3m length of cord, tie a bowline into the reef clew.

Pass the cord under the boom and back up through the reef clew finishing by passing it to the outhaul.

If there is sufficient length, take another loop through the reef clew and back to the outhaul.

Take up any slack cord and ensure that the reef clew is bound to the boom. Tension the cord at the outhaul to stretch out the sail's reefed foot. See Picture 3.

**Step 4:** Move the gooseneck to the top of its track. Hoist the main sail as high as possible. Ensure the luff is tight by tensioning the gooseneck track.

**Step 5:** Using small lengths of cord through the reef point eyelets, tie up the reefed sail tab under the boom making sure that no stress is placed on the eyelets.



Figure 1

Figure 1 shows the amount of sail area that is reduced when main sail has been reefed. The centre of sail area has also been lowered.



Figure 2

Figure 2 shows the reduced force acting on the sail when the sail area has been reduced.

The force is also acting lower down resulting in a smaller capsizing lever.

Copyright © 2009  
Scouts NZ Region 1

Marine Education Centre.  
Revised: 10 Oct 09



Picture 6: Bowline tied around the boom



Picture 7



Picture 8: Halyard attached above the peak



Picture 9



Picture 10

## Gunter sails

For loose footed sails or sails laced to the boom, the bowline at the reef clew can be tied under the sail's boom. See Picture 6.

Pass the cord through the reef clew and then through the outhaul or other fitting at the end of the boom.

Attach the main halyard to the gunter above the peak. See Picture 8.

Consider unlacing the gunter completely and lace the head, throat and luff directly to the mast. The sail is hoisted after the halyard has been directly attached to the peak.

When the main sail is hoisted, the upper end of the gunter sits next to the mast sheave. See Picture 10.

## Other Options

Consider the following alternative options to reefing the main sail:

- sailing using the jib only.
- rowing to the nearest boat ramp or jetty and wait.
- anchor and wait for the weather to improve.
- request assistance from other boating.