

## Jib Controls

**Halyard:** Hoists jib, controls luff tension and affects location of draft.

**Jib sheet:** Trims jib and affects every aspect of sail shape (amount of draft, twist, slot and entry angle).

**Sheet lead block position — Fore and aft adjustment:** Controls relative tension of luff and foot. Controls relative luff entry angle aloft and down low. Affects twist.

**Athwartships adjustment:** Controls entry angle of jib relative to boat's centerline. Controls size of slot between jib and main.

**Barber hauler:** A short line, bent to the jib clew, led toward the centerline of the boat and trimmed on winch. Its purpose is to pull the clew inboard and narrow the entry angle.

**Cunningham:** Controls luff tension and affects location of draft. Used to pull down on luff when halyard is two-blocked.

**Leech line:** Controls leech flutter.

**Foot line:** Controls foot flutter.

**Backstay tensioner:** Controls head stay sag and affects amount of draft in jib.



## Underway Jib Shaping

**To flatten jib and reduce draft:** Tighten sheet. Increase head stay tension. Move sheet lead block aft slightly.

**To increase draft:** Ease sheet. Slack head stay. Move sheet lead forward slightly.

**To move draft forward and round entry:** Increase luff tension with halyard or cunningham.

**To move draft aft and flatten entry:** Reduce luff tension by easing halyard or cunningham.

## Mainsail Controls

**Halyard:** Hoists mainsail, controls luff tension and affects location of draft.

**Mainsheet:** When close-hauled, tensions leech, affects twist. When reaching, controls angle of boom relative to centerline of boat.

**Traveler:** Controls angle of boom relative to centerline of boat.

**Vang:** Controls leech tension, especially when reaching. Flattens mainsail, controls twist.

**Outhaul:** Controls tension on foot of sail.

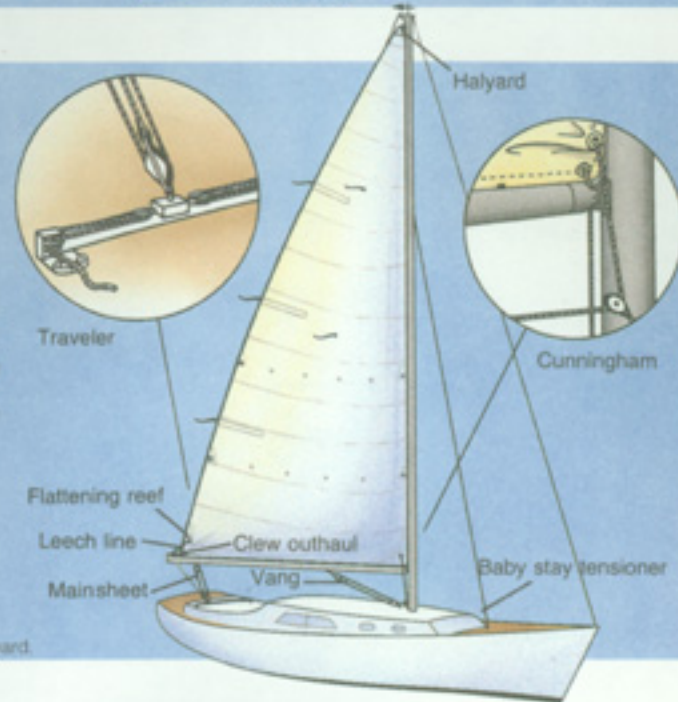
**Flattening reef:** Controls tension on foot of sail, used when outhaul cannot completely flatten the foot.

**Cunningham:** Controls luff tension and affects location of draft. Used to pull down on luff when halyard is two-blocked.

**Leech line:** Controls leech flutter.

**Backstay tensioner:** Controls mast bend by pulling mast head aft.

**Baby stay tensioner:** Controls mast bend by pulling middle of mast forward.



## Underway Mainsail Shaping

**To flatten mainsail and reduce draft:** Increase outhaul tension to flatten bottom 1/3 of sail. Increase backstay tension or increase baby stay tension to flatten upper 1/3 of sail. On non-bendy rigs, ease sheet or vang to twist off leech, thereby flattening upper 1/3 of sail.

**To increase draft:** Ease outhaul and straighten mast. Ease halyard or cunningham to reduce luff tension and tighten vang or sheet to increase leech tension.

**To move draft forward and round entry:** Increase luff tension with halyard or cunningham.

**To move draft aft and flatten entry:** Reduce luff tension by easing halyard or cunningham.

## Spinnaker Controls

**Halyard:** Hoists sail.

**Sheet:** Connects to leeward clew. Controls leech and foot tension.

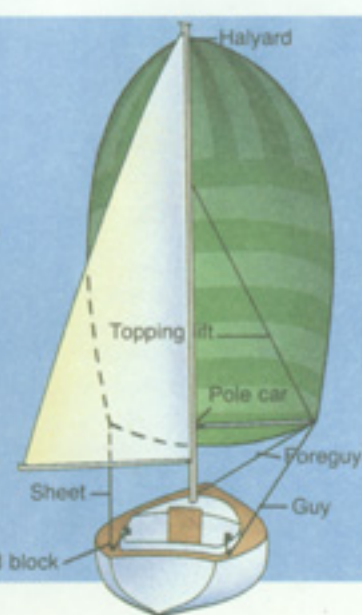
**Sheet lead block position:** Controls relative tension on leech and foot and thus affects clew height.

**Guy:** Connects to windward clew through pole. Controls angle of pole relative to centerline of boat.

**Pole topping lift:** Connects to midpoint or outboard end of pole and takes weight of pole. Used to raise outboard end of pole and thus controls height of windward clew.

**Pole foreguy:** Holds pole down. Works with pole topping lift to control height of outboard end of pole.

**Pole car:** Rides on track at forward end of mast. Controls pole height at mast. Should be adjusted, together with topping lift and foreguy, to keep pole square (90°) to the mast.



## Flying A Spinnaker

The conventional spinnaker can be flown anywhere from a beam reach to a downwind run. The object is to fly it as high as possible and out ahead of the boat so that it gets maximum clear air and remains full. The tack and clew should be level with each other and the spinnaker pole horizontal. When the pole is set at the correct height, the spinnaker leech will curl halfway up when the sheet is eased. If the lower edge of the leech curls first, lower the pole; if the upper edge of the leech curls first, raise the pole.

Generally the helmsman steers a steady course while the crew trims the guy and sheet to adjust to varying wind conditions. The pole should be approximately square to the apparent wind at all times. If the wind shifts aft, move the pole aft; if the wind shifts forward, move the pole forward.

Ease the spinnaker sheet well out until the luff just begins to curl, then trim in slightly.

If the wind shifts forward, first the luff will curl, then the spinnaker may collapse entirely. To refill the sail, the helmsman should bear off sharply while the crew eases the pole forward and trims the sheet. When the sail fills, the helmsman should attempt to return to his original course while the crew eases the pole forward, square to the new wind direction, and trims the sheet to keep the spinnaker full.

If the spinnaker collapses for no apparent reason, the helmsman should check the apparent wind indicators and alter course to put the boat on the same relative course to the wind until the spinnaker fills. The crew should retrim the spinnaker to the new wind direction as the helmsman slowly returns to the original heading.

## Troubleshooting Sail Trim

SAILING TO WINDWARD

Problem	Reason	Cure
Boat won't point	Sail shape too full	Flatten sails.
	Draft too far forward	Adjust draft to 45% back in genoa, 50% back in main.
	Jib sheet lead too far outboard	Move genoa lead to inboard track or barber haul clew.
Lee helm	Helmsman steering too full	Come up until leeward genoa telltales stream.
	Sails unbalanced	Move traveler to windward until top leech tell-tale breaks occasionally.
Boat speed down (and making leeway)	Helmsman pinching	Head off. Keep windward genoa telltales streaming.
	Sails over-trimmed	Ease jib sheet. Move sheet lead outboard. Ease main traveler.
	Sails too flat (not enough power)	Increase draft in main and jib.
	Leeches fluttering	Tighten leech lines.
Excessive weather helm (constant rudder angle of more than 5°)	Leeches severely cupped	Ease leech lines.
	Main over-trimmed (Note: it is faster to set with forward portion of main lifting than with too much weather helm.)	If all main leech telltales are breaking, ease traveler. If top main leech telltales are breaking, ease mainsheet or vang.
	Boat heeled excessively (too much sail)	Reef main. Reduce headsail.

CLOSE REACHING

Excessive weather helm	Main over-trimmed	Ease traveler. Ease mainsheet.
	Genoa over-trimmed	Move genoa sheet lead outboard. Ease genoa until leeward telltales stream.
	Boat heeled excessively (too much sail)	Reef main. Reduce headsail.
Boat speed down	Sails over-trimmed	Ease genoa until leeward telltales stream. Ease main traveler. Ease mainsheet.
	Not enough sail	Unreef main. Increase headsail size.

BROAD REACHING

Boat yaws (drives both to windward and leeward)	Sails over-twisted	Increase tension on boom vang. Move genoa lead forward. Check telltales.
	Genoa over-trimmed, closing slot and killing main	Pole out genoa clew to leeward. Adjust height of whisker pole so that genoa telltales stream.
Boat speed down	Sails not trimmed properly	Check telltales on genoa and main. Pole out genoa clew. Check draft of main and genoa.
	Not enough sail	Shake out reef. Increase headsail size. Set spinnaker.
Boat broaches out of control to windward	Spinnaker sheet over-trimmed	Ease sheet.
	Too much sail	Get spinnaker down. Reef or furl main. Reduce headsail size.

RUNNING DOWNWIND

Boat speed down	Genoa not drawing	Wing out genoa on whisker pole opposite main.
	Not enough sail	Set spinnaker, or set second headsail opposite winged-out genoa. Ease main and tighten vang.
Boat speed still down	Wind gone light	Tack downwind, keeping apparent wind about 20° off the stern.
Boat steers wildly, wants to heel to windward	Spinnaker pole over-trimmed	Ease pole forward to get spinnaker more in front of boat.
Boat rolls heavily and steers wildly	Sails overtwisted for conditions, amplifying oscillations	Increase vang tension and trim mainsheet slightly. Drop outboard end of whisker pole and trim genoa sheet slightly.
	Spinnaker oscillating wildly	Move spinnaker sheet lead block forward to tighten leech. Drop pole end to tighten luff. Trim main as above.
Boat broaches out of control	Too much sail	Douse spinnaker. Reef main. Set small headsail.
	Too much unbalanced sail	Deep reef mainsail and wing out jib, or furl main and set two small headsails wing and wing.
Spinnaker hourglasses	Spinnaker fills, out of control, while improperly set	Ease halyard and pull down on luff and leech until twist rises and disappears and sail fills.