

# *Crew Handbook*

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***FAST LANE***

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## Fast Lane Crew Handbook

### 1 Overview

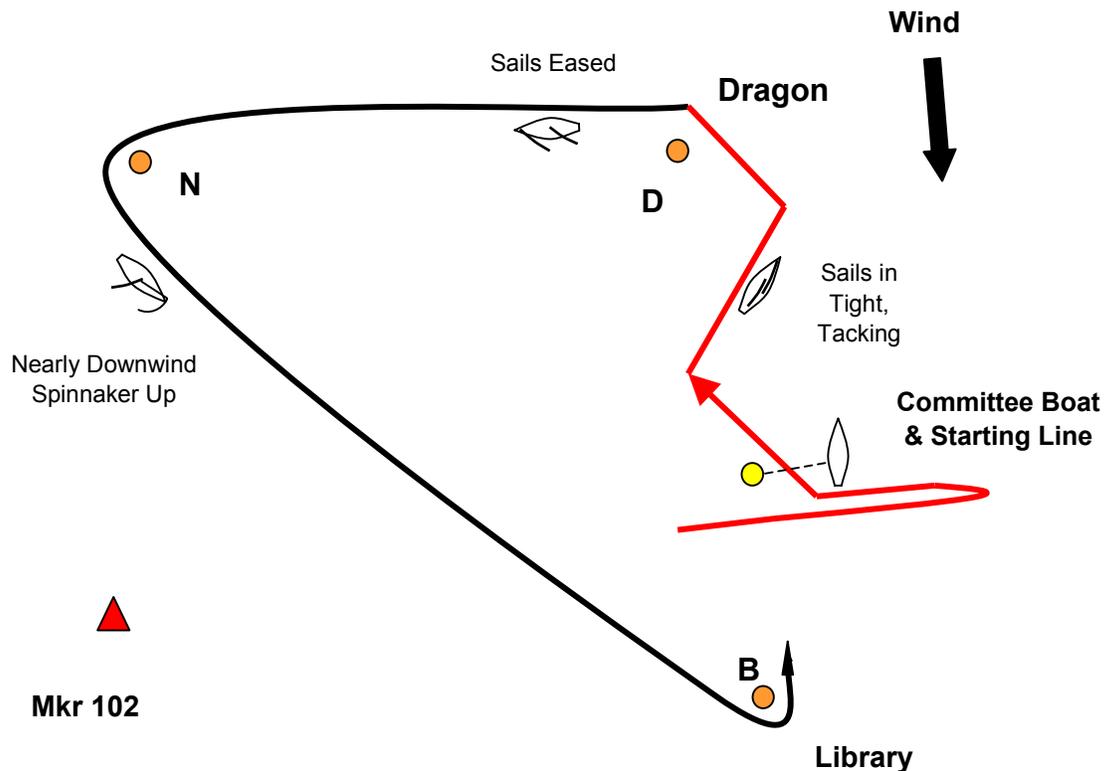
The purpose of this handbook is to consolidate a myriad of information into a concise form for reference for new and old crew members.

### 2 The Race Course

The ECSA race course is set up just north of Eau Gallie Causeway. It uses a couple of channel markers, a couple of 'permanent' markers maintained by ECSA, and a couple of temporary marks that are put out by the Race Committee when needed.

The ideal race course is a triangle that includes at least one leg that is straight up wind, and one leg that is downwind or nearly downwind. So the actual course we sail depends on which way the wind is blowing. On the next page is a chart that shows the course that we will race for every possible wind direction. The Race Committee boat sets up the starting line to be directly downwind of the first mark listed, so the first leg is always a windward leg.

Below is an idea of what the boat is doing on a typical course (this one is the East Wind course)



This shows the start and the first triangle.

The race illustrated above would continue for another triangle (in a Women's Race) (from B, to D, then N and back to B) and then a 'windward/leeward', from B to D, back to B, and then to the Finish Line (same as Starting Line). In this wind, we would definitely put the spinnaker up on the N-B legs and on the D-B leg. Whether we could carry the chute on the D-N leg depends on exactly where the wind is. Usually, everyone sets up to fly the chute on that leg, but watches the first boat around the mark and sees how well they are doing.

## 2.1 Table of Course Configurations (ECSA)

1:30 pm Yellow Flag    1:35 pm Blue Flag    1:40 pm Red Flag

If two fleets, Spinnaker Class starts first

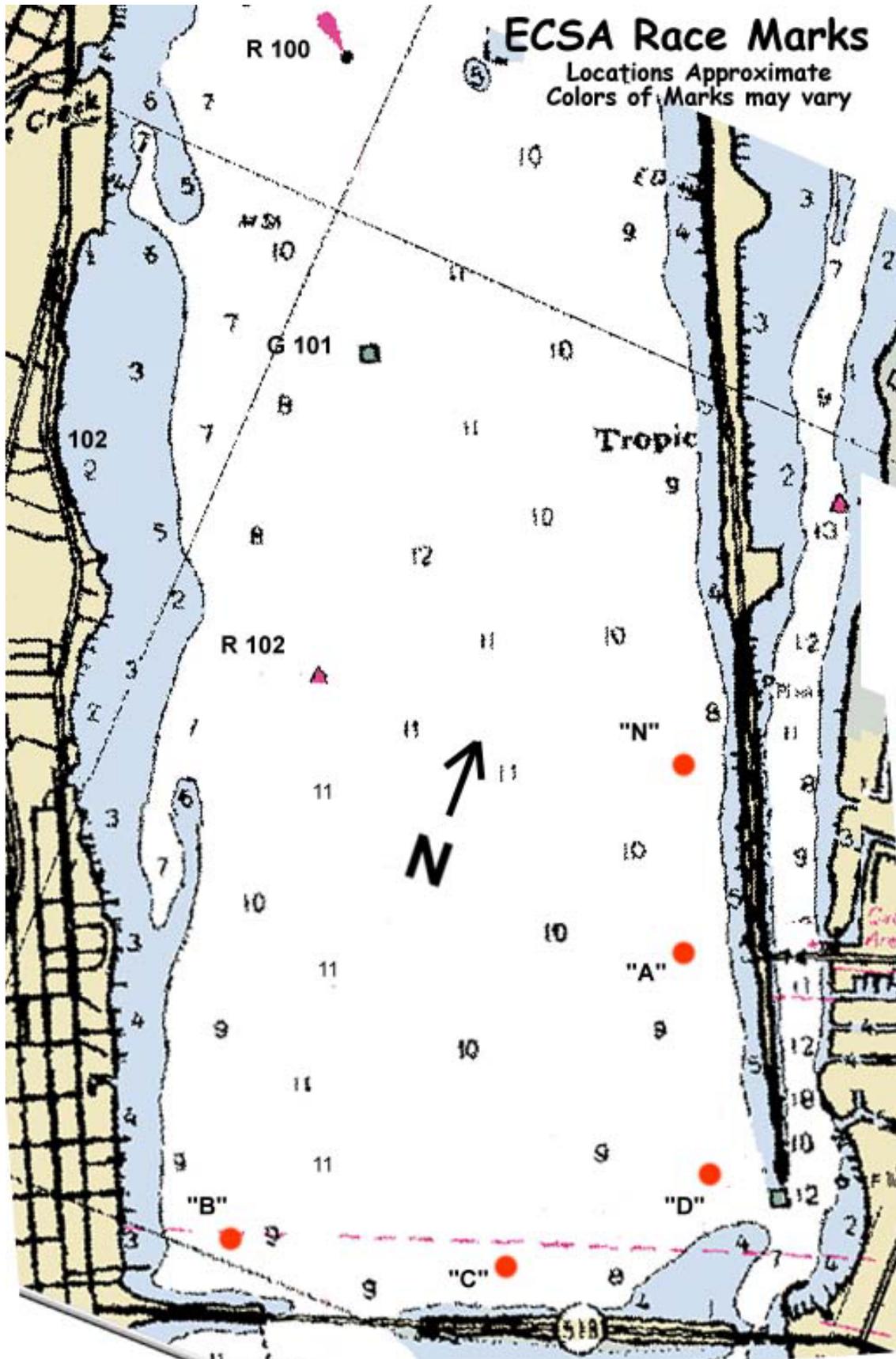
Wind Dir	N	NNE	NE	E	ESE	SE	S	SSW	SW	W	NW	NNW
Course #	A	B	C	D	E	F	G	H	J	K	L	X*
Triangle	N 102 C	N 102 B	A 102 B	D N B	D N 102	C N 102	B A 102	B D N	B D A	102 B A	102 B D	N/A
Windward/ Leeward	N C	N B	A B	D B	D 102	C 102	B 102	B N	B A	102 A	102 D	100 C
NM each Triangle	3.0	3.2	3.0	3.3	3.0	3.0	3.0	3.3	2.5	3.0	3.3	N/A
NM each W/L	2.0	2.6	2.0	2.0	2.6	2.2	2.0	2.0	2.6	2.0	2.0	4.6
Women's Race Length	8.0	9.0	8.0	8.6	8.6	8.2	8.0	9.2	7.0	8.0	9.2	9.2
Total River Race Length	5.0	5.8	5.0	5.3	5.6	5.2	5.0	5.3	5.1	5.0	5.3	4.6

Start/Finish line is in the middle, 1/3 the way up the weather leg

All marks to port

Women's Races: One Race. A-L is 2 Triangles and 1 W/L. Course X is two W/L's.

ECSA River Races: Two Races. Courses A-L is 1 Triangle and 1 W/L for the first race. Course X is just one W/L. 2<sup>nd</sup> Race is 1 W/L.



## 2.2 The Starting Sequence

The start for ECSA races is a 5 minute count-down.

Typically, just before the starting sequence begins, the Race Committee will sound a few blasts on a horn. Then all the boats watch for the Yellow (or white) flag. When this flag goes up, the 10 minute count-down starts.

The yellow flag stays up for 4 minutes. At 5 minutes to start, the Blue flag goes up. This is a chance to check your watch to see how accurate your 10 minute count-down is going.

The blue flag stays up for 4 minutes. When it comes down, it is 1 minute to start. At the start time, the red flag goes up (and maybe a horn goes off).

### 2.2.1 Problems at the Start

If only one boat goes over the line early, the race committee will put up the flag (I forget which), and that boat must circle back around and re-start. If a number of boats go over the line early, the RC will sound 'general recall' (a couple of short blasts on the horn) and put up the 'general recall' flag. Then they'll re-do the start sequence.

### 2.2.2 Starting Multiple Fleets

If there are two or three fleets (spinnaker class, non-spinnaker class, cruiser class), the spinnaker class is typically started first. The start signal for the first class is the '5 minute' signal for the second class. And the start signal for the 2<sup>nd</sup> class is the '5 minute' signal for the 3<sup>rd</sup> class. In this situation, the red (start) flag for the first class stays up for 4 minutes, and then is down for 1 minute, and back up for the next class start.

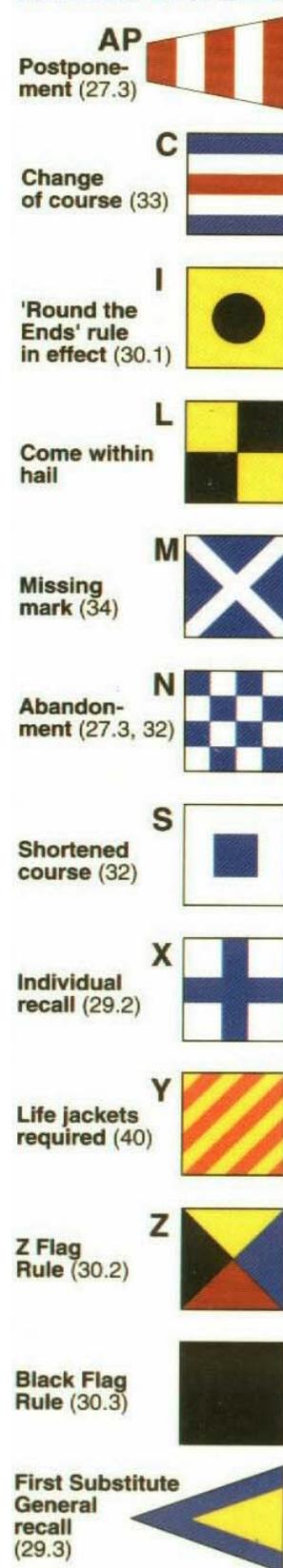
## 2.3 Right of Way & Rules (Simplified)

There are entire books written on the Racing Rules of Sailing. However... here are the basics...

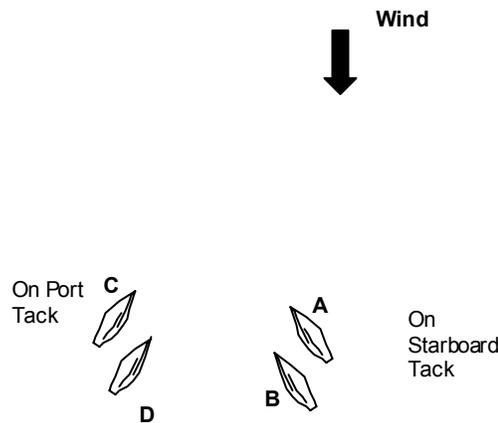
Starboard tack boats have right of way over Port tack boats. A boat is on Starboard tack when the wind is coming over the Starboard side of the boat (ie sails are on the Port side). When going downwind, the 'tack' the boat is on is determined by the side that the main boom is on (if the boom is to port, the boat is on Starboard tack).

For boats on the same tack, the leeward boat has the right of way. "Leeward" means the down-wind boat.

## RACING SIGNALS



In the figure below, 'A' and 'B' have the right of way over 'C' and 'D' because they are on starboard tack. If they decide to continue on course, 'C' and 'D' will have to tack to stay out of their way. 'B' has the right of way over 'A' because he is the leeward boat. If 'B' decided to come up (go more right), 'A' would have to be watching him and stay clear. Likewise, 'D' has the right of way over 'C' for the same reason.



When approaching a mark (except a starting mark), when the boat is within 2 boat lengths of a mark, the right of way shifts to the inside boat.

There is no longer a 'mast abeam' rule. Right of way is established as soon as there is any overlap between two boats (the bow of one boat overlaps the stern of another boat).

If you hit a mark while rounding it, you have to do a 360 degree turn. If you commit any other foul, the penalty is a 720 turn. If you are over early on a start, you must circle back around and re-start, keeping clear of all other boats that are starting.

## 2.4 The Windward Leg

The boat is hard on the wind

Everyone needs to be on the rail except during tacks

Help spot coming gusts, other boats, windward mark

We need to get the spinnaker up on deck and hooked up prior to rounding the windward mark. It is easiest to do this while on a tack where the genoa is on the opposite side of the boat from where the spinnaker will be set (so the deck is clear).

## 2.5 Reaching Leg (No Spinnaker)

The boat is off the wind, sails eased out.

Crew weight should be distributed to keep the boat approximately level or heeling slightly.

If the wind is forward of the beam, Cockpit should be playing the genoa trim according to the telltales.

We may put a 'barber hauler' on the genoa, which moves the clew of the genoa forward and outboard, to give the sail better shape while sailing on a close reach.

## **2.6 Spinnaker Leg**

The spinnaker is usually set when rounding the windward mark. As soon as the spinnaker is up, the genoa comes down. If it is a windy day, all the crew should be on the rail. Otherwise, crew weight should be distributed to keep the boat level.

On approaching the leeward mark, the genoa is raised and the spinnaker taken down.

## **2.7 The Finish**

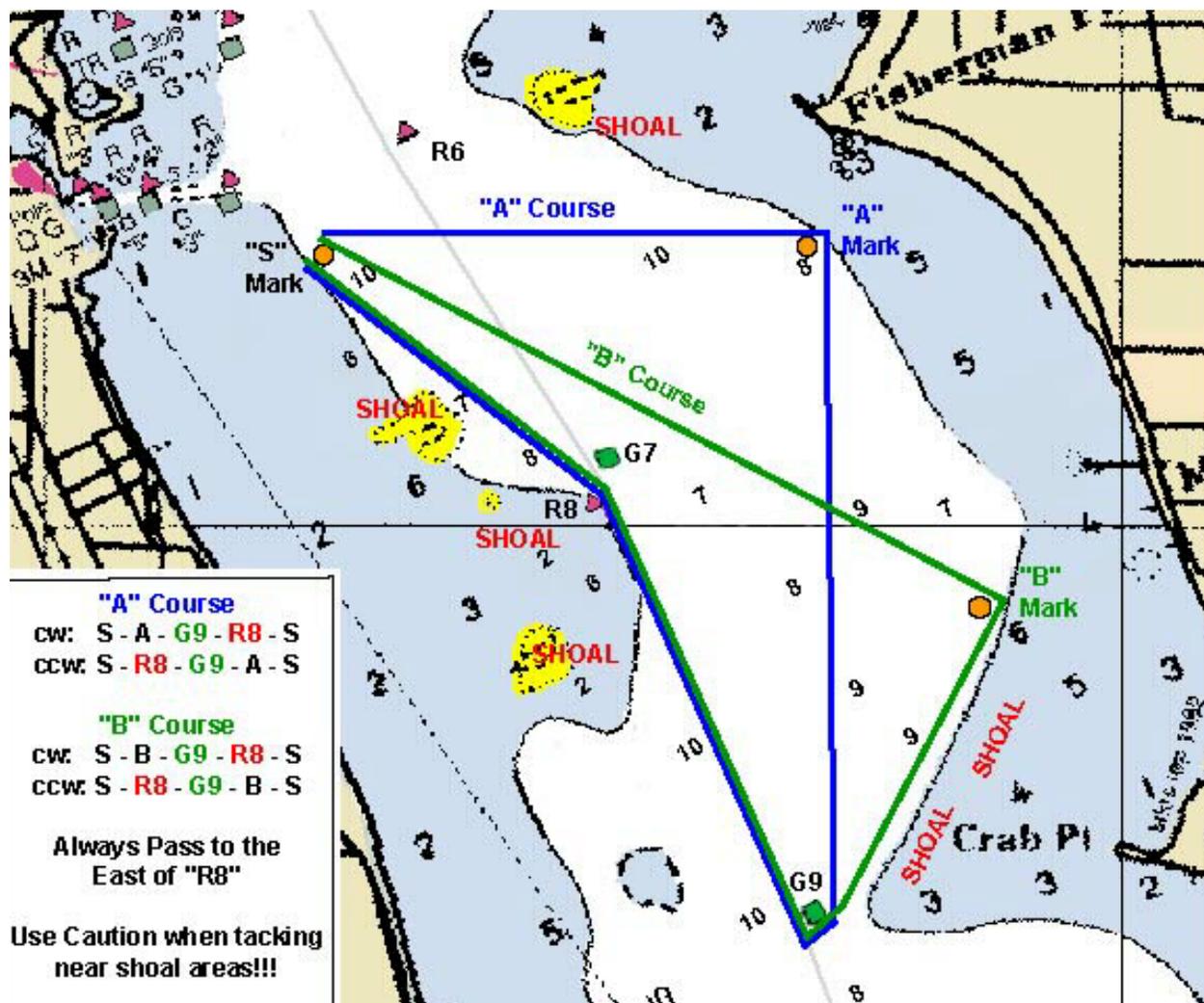
The finish is usually a beat—same conditions as the windward leg.

## 2.8 MYC Rum Race Course

Melbourne Yacht Club Rum Races are held on a 6 mile course in the river just south of Melbourne Causeway. The course uses 3 marks:

- Markers 8 and 9 – Channel Markers
- Race Bouy S - the starting mark, on the west side of the river
- Race Bouys A and B – located on the east side of the river

The Rum Race starts at Marker S, and makes two laps around either the A course or the B course, either clockwise or counterclockwise (as posted by the fleet captain).



### 2.8.1 Reverse Handicap Format

The Rum Races are run with no Race Committee. All boats start themselves, on the honor system, in a reverse handicap format. Reverse Handicap means that the start is staggered,

with the slowest boat starting first, and the fastest boat starting last. Each boat's start time is dependent upon its handicap. MYC maintains a book with start times based on handicap.

Fast Lane's current start time for the MYC Reverse Handicap is +15:57. This means that if the published race time is 6pm, our start time is 6:15:57. This is essentially last in the current MYC fleet.

With the staggered start, the winner is determined by the first boat over 'the line'. The finish line is Marker 6. You must finish to the west of Marker 6, within 2 boat lengths of the marker.

### **3 Crew Positions & Responsibilities**

#### **3.1 General**

All crew members are responsible for helping to get the boat ready to sail, and to put the boat 'to bed' after returning to the dock.

While tacking, it is critical that all weight be 'on the rail' as much as possible, as soon as possible after each tack. This means legs and upper body over the side and leaning out.

It is a natural tendency to want to help out, especially in problem situations, however, it is very important that all crew maintain their proper positions unless told to go assist someone else. We should normally have adequate crew to handle all areas of the boat. Running forward to help the foredeck in a crisis may *seem* like the right thing to do. However, redistribution of the weight may affect the helmsman's ability to control the boat, and *may* make the situation worse.

#### **3.2 Cockpit**

##### **3.2.1 General**

The cockpit people are responsible for the jib sheets when tacking, jib trim when off the wind, and the spinnaker guy and twings when the spinnaker is up.

In general, the cockpit people usually choose to switch off the cranking duties while tacking, so one person does not get too tired. One method is for each person to 'own' a winch. That person would then be responsible for releasing the sheet on that winch and for pulling in the sheet on that winch, with the other person cranking on that side. This way, cranking duties alternate back and forth. Sometimes there is a large strength differential in cockpit people. In this case, a significantly stronger person may choose to crank all the time.

The amount of cranking that needs to be done is directly proportional to how efficiently the sail is brought around. If you can get the sail around and pulled in before the boat comes around and it catches wind, very little cranking is required.

##### **3.2.2 Just Before the Tack**

New sheet on winch - 2 wraps - winch handle in the winch on the new side.

Old sheet clear and ready to run out

In cockpit ready for tack

##### **3.2.3 During the Tack**

###### **Person 1**

Release old sheet when luffing starts (*NOT BEFORE*) & make sure it runs free. Watch for 'butt cleats' and kinks in the line. DO NOT turn to start cranking until you have watched the old sheet run out.

Ready to help crank the winch on the new side as soon as the other person has the sail pulled in as far as it will go.

Crank like hell when the other person has the sheet tight.

Crank until the sail is just inside the stanchion (unless told otherwise). Make sure there are enough wraps on the winch to do the job. Once the sail is mostly in and has pressure on it, you may need to stop cranking and put another wrap on the winch.

Check to see if the sail needs to be 'skirted', and call for a skirt by the foredeck crew.

## **Person 2**

Pull in slack as the boat comes around. If this is done quickly, before the sail catches wind on the new tack, there should be little cranking required.

Tail for the cranker.

### **3.2.4 After the Tack**

Make sure jib is in all the way, or trimmed properly. Notice whether the course is hard on the wind, or off the wind. If off the wind, it is the cockpit's responsibility to keep the jib telltales flying as the wind shifts or the helmsman changes course.

Get the lazy sheet set up for the next tack.

Get up on the rail.

### **3.2.5 Setting up for a Spinnaker Set**

Locate the spinnaker sheet and spinnaker guy. Understand which is which (the guy is the one that the pole is on).

Make sure you know where your winch handles are—get them out of the genoa winches and into their pockets.

When the pole goes up, the 'lazy' jib sheet will need to be released from the cockpit.

### **3.2.6 During Spinnaker Hoists**

Cockpit 1 should pre-feed the spinnaker guy just BEFORE the hoist. (This means pull the line that is through the end of the spinnaker pole until the corner of the spinnaker has reached the end of the pole, at the forestay).

Cockpit 2 should be ready on the spinnaker sheet and be ready to trim to fill the spinnaker as soon as it is up.

As soon as the spinnaker is up, the jib comes down. The foredeck may call for a release of the jib sheet(s) as they organize the jib on deck.

### **3.2.7 While Flying the Spinnaker**

While the spinnaker is up, it is typically the cockpit's responsibility to control the spinnaker guy. This typically requires 2-3 wraps around the big deck winch, and the small winch handle.

The guy controls the position of the spinnaker pole. If the wind is to the side of the boat, the pole will be nearly straight forward, but should not be touching the forestay. If the wind is from behind, the pole will be out to the side.

In general, once set, the pole position will not need to be changed unless the relative wind changes a lot. Minor trimming due to minor wind changes should be done by the person on the spinnaker sheet (not the guy).

However, in gusty winds, where the wind is changing speed fast and the boat is accelerating and decelerating, the guy may need to be adjusted to help account for large changes in the apparent wind. Typically, a gust will speed the boat up, then die off, and the apparent wind (as indicated by the wind arrow at the top of the mast) will come way forward. In this case, the pole must be brought forward rapidly (by easing the guy) to keep the spinnaker full. Then, as the boat slows down (and/or the wind picks back up), the apparent wind will move back, and the guy will need to be cranked back in gradually to bring the pole back to match the wind.

### **3.2.8 While Gybing the Spinnaker**

The cockpit does the following during a spinnaker gybe (see Gybe discussion in Section 4):

1. Takes the spinnaker sheet from the trimmer (usually a foredeck person)
2. Pulls in both twings
3. As the gybe begins, lets out the (old) sheet about 4-6', and brings in the new sheet about 4-6'. (this is called 'squaring off', to bring the spinnaker about directly in front of the boat).
4. On completion of the gybe, when the foredeck says "made", begin trimming the new sheet and new guy (typically out on the guy and in on the sheet).

### **3.2.9 During Spinnaker Take-Down**

Before the spinnaker comes down, the genoa must go back up. The cockpit needs to tend the genoa sheets before the genoa goes up (make sure the sheets are organized and ready to use). Once the genoa is up, the sheet must be trimmed to fill the genoa. As soon as the spinnaker comes down, the cockpit crew must get set to bring the genoa sail in tight when we round the mark.

## **3.3 Middle**

### **3.3.1 General**

The "middle of the boat" people are responsible for tailing the main, jib, and spinnaker halyards, the spinnaker pole control lines, and packing the spinnaker.

### **3.3.2 Hoisting the Mainsail**

Prior to hoisting the mainsail, locate the main halyard (white line, right side).

During the hoist, pull in the slack rapidly as the foredeck person pulls up the main halyard. Keeping the slack taken up is important so the foredeck person can lean against the line to help hoist.

Be prepared to 'give back' halyard by unstopping the stopper if they get a jam during the hoist.

When the main is all the way up, wrap the halyard around the small winch directly behind the stoppers, and winch the main halyard moderately tight. (light winds, downwind-loose, upwind & heavy winds, fairly tight).

### **3.3.3 Hoisting the Jib**

Prior to hoisting the jib, locate the jib halyard (white line, left side).

During the hoist, pull in the slack as the foredeck person pulls up the jib halyard. Be prepared to 'give back' halyard by unstopping the stopper if they get a jam during the hoist (not common on the jib).

When the jib is all the way up, put the halyard around the small winch, and pull hard. The sailmaker says DO NOT winch the jib halyard hard.

### **3.3.4 During Tacks**

Climb over the middle of the boat, and get back out on the rail as soon as possible.

### **3.3.5 Setting up for a Spinnaker Set**

Release pole downhaul

Pull Pole up with pole topping lift

Correct spinnaker halyard located (there is one on each side) and ready to tail.

Give the foredeck halyard slack when they call for it, as they are hooking up the spinnaker.

### **3.3.6 During Spinnaker Hoists**

Tail the spinnaker halyard. IT IS VERY IMPORTANT THAT THE 'TAIL' KEEP UP WITH THE HOISTER!!!

Ready on pole downhaul and topping lift to adjust as needed to keep the pole approximately level.

Release genoa halyard as soon as foredeck is ready for it, and make sure it runs out cleanly.

### **3.3.7 While Flying the Spinnaker**

While the spinnaker is up, it is the "middle's" responsibility to maintain proper pole position.

It is also common for the middle to help with the cranking on the spinnaker sheet and guys, when needed (heavy winds).

### **3.3.8 While Gybing the Spinnaker**

Release the pole topping lift slightly to lower the pole a little. Release pole downhaul. Make sure the cockpit gets the Twings in. After the gybe, get the pole back level, and make sure the Twing on the sheet side gets released.

### **3.3.9 During Spinnaker Take-Down**

Before the spinnaker comes down, the genoa must go back up.

Tail the genoa halyard.

Release spinnaker halyard in a controlled fashion. (If you release too fast, the spinnaker will go in the water).

Help take chute down into cabin.

### **3.3.10 Spinnaker Clean Up**

Disconnect the 'gear' from the chute and hand it out to the foredeck people to position for next set. You should connect both sheets to each other and the halyard to the sheets.

Pack the chute... Locate the top of the chute. Follow the edge of the chute down in each direction until you have located each corner. Bring all 3 together in front of you. Stuff the rest of the chute into the bag. Secure the corners using the strap provided, across the top of the chute.

## **3.4 Foredeck**

### **3.4.1 General**

The foredeck is responsible for doing the hoisting of the main, jib, and spinnaker, for helping get the genoa around during tacks, and for doing the pole work during spinnaker gybes.

### **3.4.2 Hoisting the Main**

Locate the mainsail halyard where it comes out of the mast on the right side.

Make sure the end of the main halyard is fastened to the top of the mainsail, the pin has been turned until it clicks, and the sail is fed into groove. Follow the halyard with your eyes from the top of the sail to the top of the mast, and make sure it is not misrouted.

Make sure your "middle" person is ready to tail the halyard.

Pull the main halyard, slowing as the battens approach the feeder. Help the battens through the feeder.

As the pull gets harder, use your body weight to pull out, and then allow the tailer to take up the slack (this is easier and more successful than trying to pull with just your arms).

### **3.4.3 Hoisting the Jib**

Make sure the jib is laid out on deck on the side it should be on when it is hoisted.

Locate the jib halyard where it comes out of the mast on the left side. The other end is typically clipped to the bow pulpit.

Make sure the end of the jib halyard is fastened to the top of the jib, and the sail is fed through the pre-feeder and up into the groove a few feet. Follow the halyard with your eyes from the top of the sail to the top of the mast, and make sure it is not misrouted.

Make sure your “middle” person is ready to tail the halyard. Make sure the other foredeck person is ready to help feed the jib as it goes up.

Pull the jib halyard up.

As the pull gets harder, use your body weight to pull out, and then allow the tailer to take up the slack (this is easier and more successful than trying to pull with your arms).

### **3.4.4 Tacking**

One foredeck person should be on deck ahead of the mast, facing aft, to make sure the genoa comes around properly—help it around when we have the big genoa up. Watch your feet getting tangled in the genoa sheets.

The other foredeck just needs to get to the other side and get out on the rail as soon as possible.

Skirt the genoa (pull the bottom edge of the sail up over the lifelines as the cockpit cranks it in). This may have to be done more than once, depending upon what the cockpit is doing and which genoa we have up. Timeliness of the ‘skirt’ is important in getting the boat moving again after a tack.

### **3.4.5 Setting up for a Spinnaker Set**

Determine which side the spinnaker will be flying on on the new course, and if possible, wait for a tack that puts the spinnaker setup area on the windward side of the boat. This enables you to get things set up without having to fight the genoa.

Put the bag near the lifeline just ahead of the mast, and clip it on.

Open the bag and locate the top and the two corners.

Ask the middle to release the spinnaker halyard on the side the spinnaker is on, pull about 6’ out, and attach the halyard to the top of the sail. Make sure the halyard is routed outside the jib and jib sheets. Make sure it is NOT routed under the lifelines. Leave the loose part of the halyard flopping behind the spreaders.

Attach the sheet and guy lines to the two corners, making sure the sheet will have a direct line to the block at the stern of the boat (without going under lifelines) when it is flying. Make sure the guy is also routed completely outside the lifelines and around the headstay.

Attach the bow end of the pole to the spinnaker guy line (facing up).

When attaching the pole topping lift and downhaul, make sure they are attached so the genoa sheets are free to tack (ie-in front of the topping lift).

When we are a few boat lengths from rounding the windward mark, the pole should go up. The foredeck attaches the mast end of the pole to the mast, with the jaws facing up. Have the middle put some tension on the pole topping lift to make sure the topping lift and downhaul are routed properly. Make sure the 'lazy' genoa sheet is over top of the pole and in front of the topping lift.

If we are doing a 'bear away set'—where the wind will remain on the same side—the pole can go all the way up at this point. If we are doing a 'gybe set'—where we must gybe around the mark before setting the spinnaker—the bow end of the pole should remain on deck to allow the genoa to gybe around easily.

### **3.4.6 During Spinnaker Hoists**

Get the pole all the way up, if it is not already up (attached at the mast and horizontal).

Make sure the "middle" and cockpit are ready for the hoist (middle ready to tail the halyard, twings in).

Make sure the guy has been pre-fed until the front corner of the sail is to the forestay.

On the hoist, pull hard and fast on the spinnaker halyard until the spinnaker is all the way up.

Drop the genoa as soon as possible after the hoist.

### **3.4.7 While Flying the Spinnaker**

Trim the chute. Stand up by the shrouds where you can see the sail. Depending upon the wind, you may need one or two wraps around the big winch on the deck, and someone from the middle or cockpit cranking on the winch at your command.

The spinnaker sheet needs constant attention as the wind shifts. As the boat accelerates and decelerates, it will have a large effect on the relative wind and hence the spinnaker trim. It is typical to need to make a correction and then undo that correction 30 seconds later as the boat speed catches up.

### **3.4.8 While Gybing the Spinnaker**

Switch the pole from side to side. See section on gybing in Section 4.

### **3.4.9 Before Spinnaker Take-Down**

Before the spinnaker comes down, the genoa must go back up.

Unfold genoa & make sure it's on the correct side for the new course.

Check genoa halyard feed.

Haul on the genoa halyard.

#### **3.4.10 During Spinnaker Take-Down**

Foredeck pulls the spinnaker down.

Position yourself in the walkway abeam the cabin hatch. Grab the spinnaker sheet, making sure you are routed under the main boom and behind the genoa sheet.

When you hear the 'blow the guy' command, start pulling in the spinnaker and passing it back toward the center person, stationed in the cabin hatch. Continue until the spinnaker is fully down.

#### **3.4.11 Spinnaker Clean-Up**

Get pole down on deck as soon as possible—ready for tack if needed. As soon as the pole is down, yell 'clear to tack'.

Move the 'gear' around to the correct side.

### **3.5 Helm**

Steer the goddamned boat, ignoring all the distractions, and don't hit anyone.

## 4 Sailing the Boat

### 4.1 Deck Layout, Sheets & Halyards



**Port Side Halyards**



*Spinnaker Pole Topping Lift, Genoa Halyard,  
Port Spinnaker Halyard*

**Starboard Side Halyards**

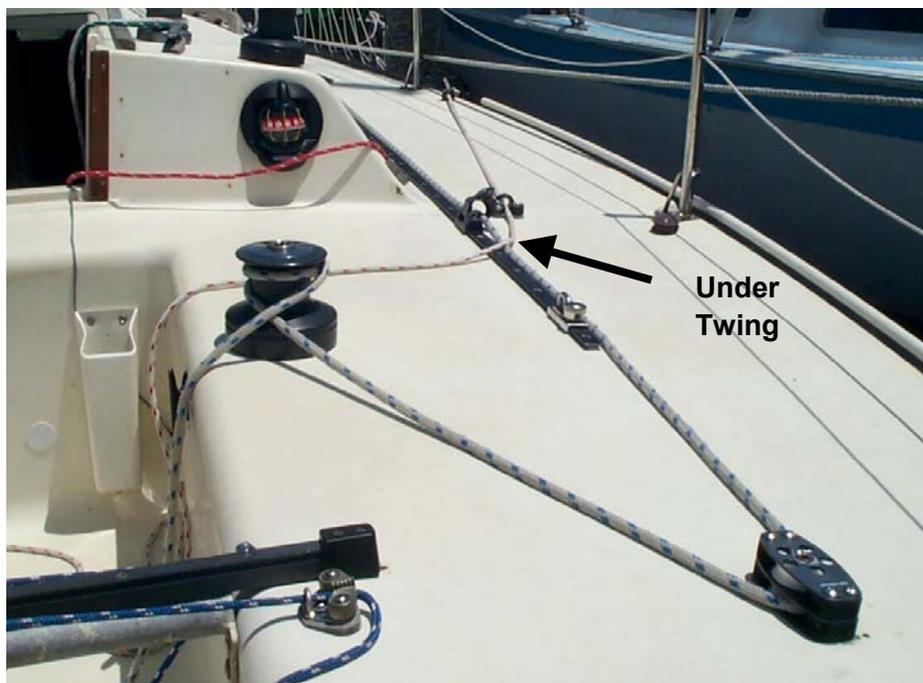


*Main Halyard, Stbd Spinnaker Halyard*

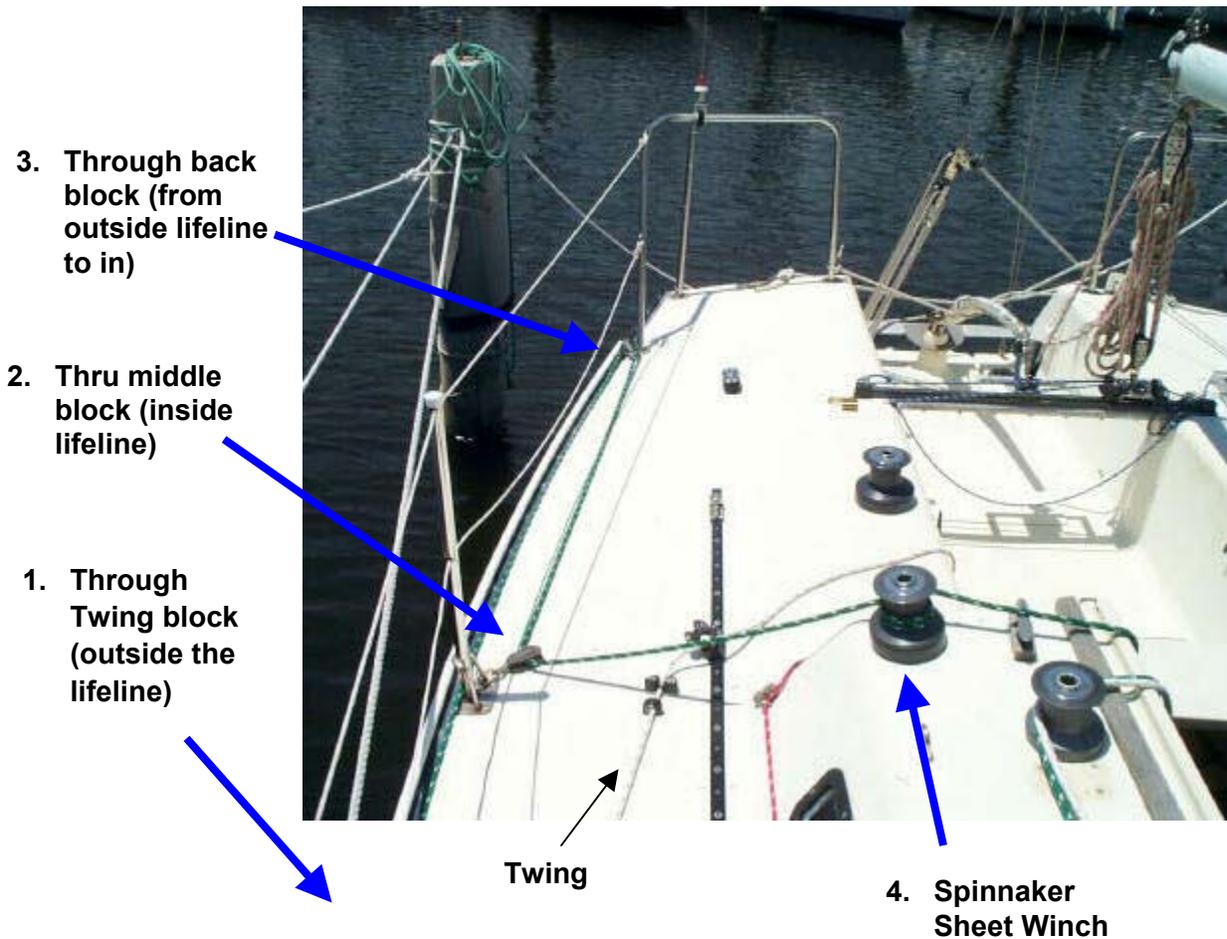
### Genoa Sheet Routing



Make sure the forward (clew) end of the genoa sheet is routed outside the shrouds and up to the bow. Position the block on the track to the appropriate position (marked on the deck) for the sail we will have up. Route the jib sheet UNDER the twing line. Route the end through the bottom of the back block and around the winch. Make sure the winch handles are out and in their pockets.



### Spinnaker Sheet Routing



Route the spinnaker sheet

- OUTSIDE the lifeline
- Through the Twing block,
- Back to the block at on the stern toe-rail, where it goes from outside to inside the lifeline
- Up to the block on the stanchion (inside the lifeline)
- To the big upper deck winch.

## 4.2 Trim Chart For Beating

		Light Wind		Moderate Wind		Strong Wind	
		Smooth	Rippled	Small	Choppy	Small	Rough
Waves:							
<b>Mast</b>	<b>Backstay</b>	Loose	Loose	Tensioned	Mod Tight	Tight	Very Tight
	<b>Mast Bend</b>	Straight	Straight	Slight Bend	Almost Straight	Max Bend	Some Bend
<b>Mainsail</b>	<b>Luff</b>	Loose	Loose	Tensioned	Almost Tight	Very Tight	Tight
	<b>Foot</b>	Loose	Loose	Tensioned	Loosen	Very Tight	Tight
	<b>Leach</b>	Slightly Open	Open	Closed	Slightly Open	Almost Open	Open
	<b>Vang</b>	Loose	Loose	Tensioned	Almost slack	Tensioned	Slightly Slack
	<b>Traveller</b>	To Windward	To Windward	Amidships	Amidships	To Leeward	To Leeward
	<b>Sheet</b>	Eased	Eased	Tight	Tight	Very Tight	Tight
<b>Jib</b>	<b>Luff</b>	Loose	Loose	Tensioned	Fairly Tensioned	Very Tight	Very Tight
	<b>Sheet</b>	Eased	Eased	Tight	Less Tight	Very Tight	Very Tight
	<b>Sheet Lead</b>	Forward	Forward	Normal	Normal	Normal/aft	Normal
	<b>Inside Telltale</b>	Horizontal	Horizontal	Approx 30°	Approx 20°	Approx 70°	Approx 60°
	<b>Outside Telltale</b>	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal

Source: How to Trim Sails by Peter Schweer

### 4.3 Trim Chart for Reaching

		Light Wind		Moderate Wind		Strong Wind	
		Smooth	Rippled	Small	Choppy	Small	Rough
Mast	Waves:						
		<b>Backstay</b>	Slack	Slack	Loose	Loose	Tensioned
	<b>Mast Bend</b>	Neg. Bend	Neg Bend	Straight	Straight	Almost Straight	Almost Straight
Mainsail	<b>Luff</b>	Slack	Slack	Slack	Slack	Loose	Loose
	<b>Foot</b>	Slack	Slack	Slack	Slack	Loose	Loose
	<b>Leach</b>	Closed	Closed	Closed	Almost Closed	Open Little	Open Little
	<b>Vang</b>	Tensioned	Slight Tension	Tight	Tight	Very Tight	Very Tight
	<b>Traveller</b>	NA	NA	To Leeward	To Leeward	Extreme Leeward	Extreme Leeward
	<b>Sheet</b>	Eased	Eased	Eased	Eased	Eased	Eased
Jib	<b>Luff</b>	Slack	Slack	Slack	Slack	Loose	Loose
	<b>Sheet</b>	Eased	Eased	Eased	Eased	Eased	Eased
	<b>Sheet Lead</b>	Outboard Forward					
	<b>Inside Telltale</b>	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
	<b>Outside Telltale</b>	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal

Source: How to Trim Sails by Peter Schweer

#### **4.4 Mainsail Trim Notes**

1. Sailing upwind requires a flatter sail than reaching and running.
2. Rough water requires a fuller setting than smooth water.
3. Light winds require a fuller setting than strong winds

Bending the mast decreases the draft in the sail, it flattens the sail. Removing mast bend adds draft to the sail.

Pulling on the outhaul flattens the sail.

When the wind is forward of the beam, the telltales on the leach of the sail (the trailing edge) should be flying straight back.

#### **4.5 Jib Trim Notes**

##### **4.5.1 Trimming to Tell-Tales**

Telltals are only useful when the sail has wind flow across both sides (when the wind is forward of the beam). When sailing with the wind aft of the beam, the sail is catching wind instead of working like an airfoil, and the telltales don't do you as much good.

Who's responsibility it is to react to changes in telltales depends upon whether we are beating to windward or reaching.

When we are on a beat (ie tacking to windward), the cockpit trims the genoa all the way in—to just inside the stanchion, and the helmsman steers to the tell-tales.

- For max speed, both telltales should be streaming straight back
- For pointing without giving up too much speed, the outside telltale should be streaming back and the inside telltale just barely dancing.
- For max pointing, the outside telltale should be streaming back and the inside telltale standing about straight up.

When on a course that is not a beat, the helmsmans steers the appropriate course, and the cockpit trims the genoa according to the telltales.

- If the inside telltale is flopping around, the sail needs to be brought in a little
- If the outside telltale is flopping around, the sail needs to be let out a little.

##### **4.5.2 Halyard Tension**

To power up the sails in light winds or in choppy seas, tighten the jib halyard to move the draft of the jib forward, which also increases the entry angle. A rounder entry angle will also make it easier for a less-than-attentive helmsman to keep the boat going fast since the sail will not stall as easily.

Ease the halyard slightly for higher pointing.

### **4.5.3 Jib Sheet Lead Position**

Jib leads can be located by observing which portion of the sail begins to luff first.

- Luffing in the upper portion means that the lead should be moved forward.
- Luffing in the lower portion requires the lead point to be moved aft.

Heeling is reduced by moving the lead aft because the top of the genoa is allowed to twist off and luff.

As the wind velocity decreases, moving the lead forward adds draft to the sail, which makes it more powerful.

Jib lead positions should be marked on the deck according to the sail being used (#1, #2, #3). Typically the lead is set as we rig up the genoa, but will need to be changed if we change headsails.

When we are off the wind with the genoa up, we will use a ‘barberhauler’—a short sheet that attaches temporarily to the genoa clew and is used to position the jib lead forward and outboard of its normal position. This comes off before we round the next mark.

### **4.6 Spinnaker**

Pole should be adjusted so both corners of the spinnaker are at the same height. When the edge of the spinnaker luffs, it should luff in the center first.

The ‘guy’ (the spinnaker sheet that is on the pole) should be set to keep the pole approximately perpendicular to the wind arrow at the top of the mast. When the wind is on the beam, the pole should be nearly straight forward (but a few inches off the headstay). When the wind is dead astern, the pole should be nearly straight out to the side (except in very strong winds, where we need to keep the pole forward enough to keep the pull of the spinnaker in the middle of the boat). While the spinnaker is up, it is typically the cockpit’s responsibility to control the spinnaker guy. This typically requires 2-3 wraps around the big deck winch, and use of the small winch handle.

Once the guy is set in its proper position, the spinnaker trimmer should ease the spinnaker sheet until the edge of the spinnaker just starts luffing. Optimal speed from a spinnaker is when there is a little luff on the edge of the spinnaker.

Small changes in boat speed or wind speed can make large changes in the relative wind, so the spinnaker trimmer needs to fairly constantly tend the spinnaker trim, with some occasional help from the person on the guy.

In general, once set, the pole position will not need to be changed unless the relative wind changes a lot. Minor trimming due to minor wind changes should be done by the person on the spinnaker sheet (not the guy).

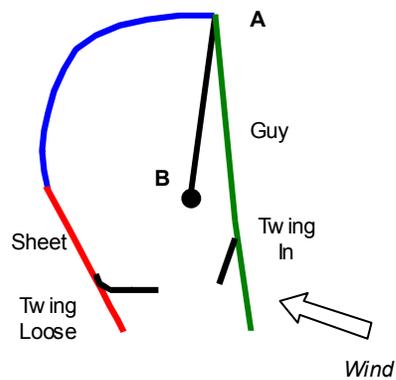
However, in gusty winds, where the wind is changing speed fast and the boat is accelerating and decelerating, the guy may need to be adjusted to help account for large changes in the apparent wind. Typically, a gust will speed the boat up, then die off, and the apparent wind (as indicated by the wind arrow at the top of the mast) will come way forward. In this case, the pole

must be brought forward rapidly (by easing the guy) to keep the spinnaker full. Then, as the boat slows down (and/or the wind picks back up), the apparent wind will move back, and the guy will need to be cranked back in gradually to bring the pole back to match the wind.

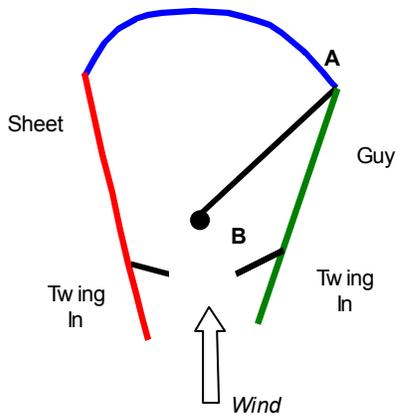
## 4.7 The Spinnaker Gybe

### 4.7.1 Before the Gybe

Below is a picture of the typical setup while flying the spinnaker. In the following pictures, we go through the gybe, step-by-step.

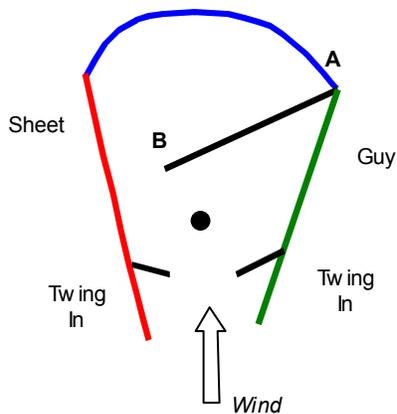


#### 4.7.2 Preparation for the Gybe (Squaring Off)



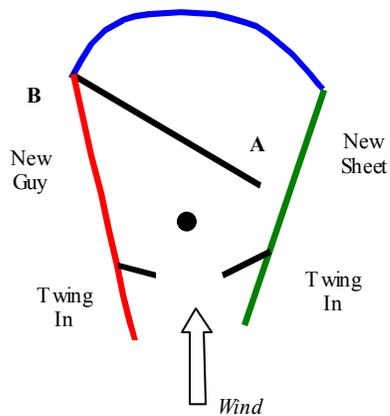
1. Helmsman turns the boat near downwind
2. Pole comes back a little to square off the spinnaker, and sheet goes out a little (4-6')
3. Middle releases pole topping lift about 1-2 feet to lower the pole. Release pole downhaul also.
4. Cockpit or middle pulls twings in on both sides
5. Foredeck prepares to release pole from mast (and keep lazy jib sheet over pole)

#### 4.7.3 Starting the Gybe



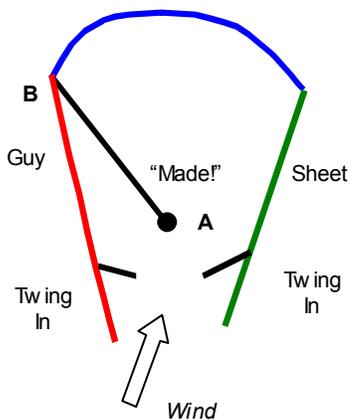
1. Helmsman brings the boat dead downwind
2. Foredeck unclips the mast end of the pole
3. Helmsman pulls the mainsail to the middle of the cockpit and holds it there

#### 4.7.4 Middle of the Gybe



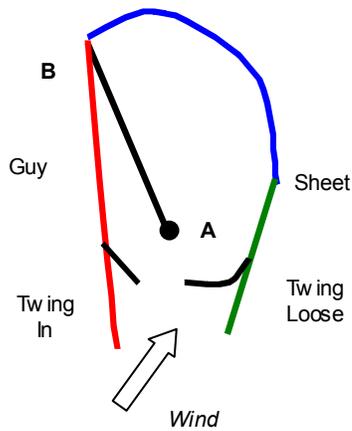
1. Foredeck grabs the new guy and clips the end of the pole on the guy and pushes it forward to the end of the guy.
2. Helmsman lets the main flop over & continues steering toward the center of the spinnaker

#### 4.7.5 Completing the Gybe



1. Foredeck clips end of pole onto mast and yells "made" when complete.

#### 4.7.6 After the gybe



1. Helmsmans steers appropriate course
2. Cockpit trims spinnaker according to wind, and releases sheet side of twing.
3. Middle adjusts the pole height with pole topping lift and downhaul.
4. Cockpit hands off sheet to foredeck (typically) to trim spinnaker during the leg.

**Notes:** The above describes the gybe where the foredeck unclips the pole from the mast first. Alternatively, we unclip the pole from the guy first, leaving it attached at the mast until it is free from the guy. Which way it is done depends upon the wind strength, and the experience level of the foredeck, etc. Leaving it clipped on the mast until it is unclipped from the guy makes sure the pole doesn't get out of control. But it is not quite as fast a gybe.

## **5 Leaving the Dock**

Bail any standing water

Electrical system

- Rotary switch to "BOTH" (it stays in this position all the time!)
- Nav switch on (bottom switch on the panel)
- Radio on Channel 16
- Depth sounder on (after leaving Melbourne Hbr Channel)
- Solar panel unplugged & stowed

Speedo inserted

Motor on & checked for gas

Sheets rigged

### **5.1 Engine Start**

When you put the motor on

1. Check to make sure there's fuel when you put the motor on. 1 full tank is good for 50 minutes
2. Open air vent on gas cap
3. Check to make sure the red shut-off cord is on
4. Set throttle (left side of front) to Start position

Just before backing out

6. Open fuel valve on left side (black plastic lever)
7. Set choke lever (right side of front, when you're facing the motor) up

When ready to start

8. One pull, and set choke lever down

It should start within 2-3 pulls, or it's not going to start. Check your settings above, pull it once or twice more, and then go to plan B (sail). If it won't start, it's usually either flooded (in which case you turn all the gas off, and wait awhile and it should start), or spark.

Occasionally the spark plug wire has fallen off, but not since I put the spark plug cover back where it belongs. The plugs foul pretty easily. Gas mix is 50:1, in case I forget to fill it today.

#### Shutting down

1. Close air vent
2. Close gas (left side lever)
3. Wait for it to shut off

Loosen backstay! to pull engine

Check #1 and #2 before stowing (will leak gas all over)

It goes prop first into the hole.

You can just tilt it up by making sure the steering handle is flipped up, tilt it up, and put the hook around the back of the hand grip on the back/top of the case.

## 6 Returning to the Dock

2 forward spring lines on

2 aft spring lines on

2 bow and stern lines on

Fender(s) out

Mainsail rolled and removed from boom, or (if sailing the next day) flaked on the boom with sail cover on.

Jib rolled or flaked and stowed in bag below

    #1 & #3 (big one & small one)

    #2 - flaked & tied with (red) sail tie

    Light #1 - flaked and stowed in bag

Spinnakers packed and stowed forward (or, if wet, offloaded for someone to take home and rinse, dry, and pack).

Electrical system

- Radio off
- Depth sounder off
- Stereo off
- All switches on panel off
- Rotary knob to 'BOTH' (must be on to allow Solar Panel to charge the battery)
- Solar panel plugged in

Motor stowed

Cockpit access hatch latched from below

Ice chest drained & left open

Lockers open for ventilation

Speedo removed & replaced with plug

Flag(s) down

## 7 Motor Operation

The main engine is a 2.5 hp Nissan gasoline motor.

The proper fuel mixture is 50:1

It will run about 45 minutes on a tank of gas.

## 7.1 Starting

Make sure the motor is firmly affixed to the mount, and the mount is properly mounted on the stern of the boat, and the safety line is clipped to the backstay or stanchion.

Make sure there is fuel in the fuel tank (visually inspect).

Make sure the starter cord (the red cord with the black clip on the end) is clipped to the shutoff button (upper right quadrant of the 'front panel'). The black clip slides behind the button. Without this clip in place, the motor won't start.

Open the air vent on the gas cap.

Open the fuel valve on the left side of the motor (pointing **down** is open).

Set the throttle (the up/down slide on the left side of the front panel) to 'start' position.

Set the choke on for the first pull or two. ('On' is up, in the 'Closed' position).

Make sure you have elbow room to pull.

**IMPORTANT:** There is no 'neutral' or 'reverse'. When the motor starts, it will be in 'forward'. At slow speeds, the boat will not steer very well, so make sure your bow is pointing where you want to go before you start it (and/or have someone on the bow to fend off).

Give one good pull on the cord. If it doesn't start the first time, slide the choke off (down). Try two or three times to start. If it does not start after 2 or 3 pulls, then go back thru the list above and make sure you have fuel, air, and all the switches set properly. You might try one or two more pulls with the choke on. But too many and you will only flood it

## 7.2 Operation

Once Fast Lane is moving, steering is normally done via the rudder with the motor locked facing forward. If you need to maneuver at low speeds, however, it is possible to loosen the motor so it swivels back and forth like a normal motor. There is a large wing-nut near the back on the right side that does this. Once loosened, you can even swivel the motor all the way around and 'reverse', or just steer in forward with the motor. However with the nut loosened, the motor will not remain facing straight forward unless someone holds it.

A tank of gas only lasts about 45 minutes. Set your watch and you can fuel underway (with care). It is 'normal' for the engine to cough a little after it is filled (don't know why).

## 7.3 Stopping

To immediately stop the motor, pull the kill cord (the red cord with the black clip on it).

However, if you plan to put the motor away, it is best to kill the motor by turning the fuel off. This minimizes gas leakage in the boat when the motor is on its side. With the motor running, close the air valve on top of the gas cap, and turn the gas level on the left side of the motor to the closed position (horizontal). It will take a minute or two for the motor to stop.

If you are going to put the motor in the hold, it is best to wait a few minutes to let the motor cool down.

#### **7.4 Mounting & Unmounting the Motor**

The motor has a quick mount bracket.

To mount it:

- Loosen the backstay
- Clip the safety line on the backstay
- Hold the top of the motor fore and aft
- Get your shoulders on the outside of the backstay
- Plant your feet and slide the motor mount into the grooves in the bracket on the stern. Make sure both grooves go in before you let go!

To unmount it

- Make sure the motor has cooled off enough to handle, and the gas valve and air vent are closed.
- Loosen the backstay and make sure the safety line can slide up on the backstay while still clipped
- Get your shoulders outside the backstay, plant your feet firmly, and get a firm grasp on front and back of the motor
- Lift straight up the grooves in the bracket. It is MUCH easier to do when the boat is not moving very fast (less pressure on the motor).
- Hand the motor back thru the backstay
- NOW unclip the safety clip.
- Slide propeller first into the hold

## 8 Boat Information

### 8.1 Measurements

Length Overall:	28'
Length at Waterline:	24.17'
Displacement:	4000 lbs
Beam:	9.5'
Draft:	5.4'
Rig Type:	Sloop / Masthead
Keel:	Fin
Rudder:	Spade

These are the dimensions on my rating certificate:

I: 37' (actual meas: 36'8")

J: 11'

P: 32.5'

E: 10.83

LP: 17.05'

Largest Genoa: 155%

Spinnaker Pole: 12'  
(actual meas: 11'7.5")

Large Spinnaker:

Width: 22', Leech: 37'

Small Spinnaker (Sleighride's old star cut):

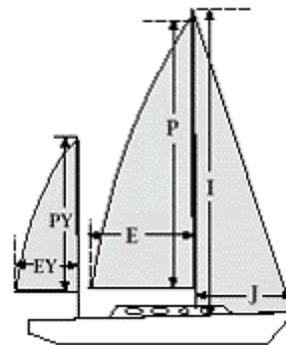
Width: 17.5', Leech: 20'

Gary's Chicken Chute:

Width: 20', Leech: 35'

Jib Sheets: 3/8" x 45'

Topping Lift 3/8" x 75'



## **8.2 Rating Information**

The ECSA PHRF rating for Fast Lane is 114 Spinnaker, 126 Non-spinnaker. This is based on a base rating of 117, with a -3 adjustment for oversized spinnaker pole.

The MYC Rum Race Start Time rating is 134...This is the 126 Non-spinnaker rating plus 12 seconds for not being 'dry sailed'. This results in a Rum Race start time of +15:57.

## 9 Sailing Terms

Note: These terms are specific to Fast Lane. They may not always match what other people call them!

**Abeam:** Directly to the side.

**Aft:** Behind.

**Backstay:** The part of the rigging that holds the mast up in the back of the boat.

**Bowline:** The knot that is used to attach the genoa sheets. It is a knot that will hold under tension, yet is easy to untie later. (See Section 9 for 'How to Tie a Bowline')

**Clew:** The back corner of a sail. On a mainsail the outhaul is attached to the clew; on genoas, the sheets are attached to the clew.

**Cunningham:** A control that adjusts the position of the draft in a sail by changing the tension on a sail's luff. The control is named after its inventor, Briggs Cunningham.

**Downhaul:** The line that pulls the outboard end of the spinnaker pole down (also called Foreguy on other boats).

**Draft:** 1. The deepest part of the curve in a sail. 2. The distance from the water line to the bottom of a boat's keel.

**Flattening Reef:** A sail control that flattens the bottom part of the mainsail. It's called a reef because the control line passes through a grommet on the leech of the sail about a foot above the boom. When the line is tightened, the grommet is pulled down to the boom and out as far as the sail can stretch. Also called "flattener".

**Foot:** The bottom edge of a sail.

**Forestay:** The part of the rigging that holds the mast up in the very front of the boat.

**Foretriangle:** The triangle formed by the forestay, forward edge of mast and foredeck.

**Gooseneck:** The mechanical joint that connects the boom to the mast

**Guy:** The spinnaker sheet that goes through the jaw of the spinnaker pole. (Also called Afterguy, NOT called Foreguy).

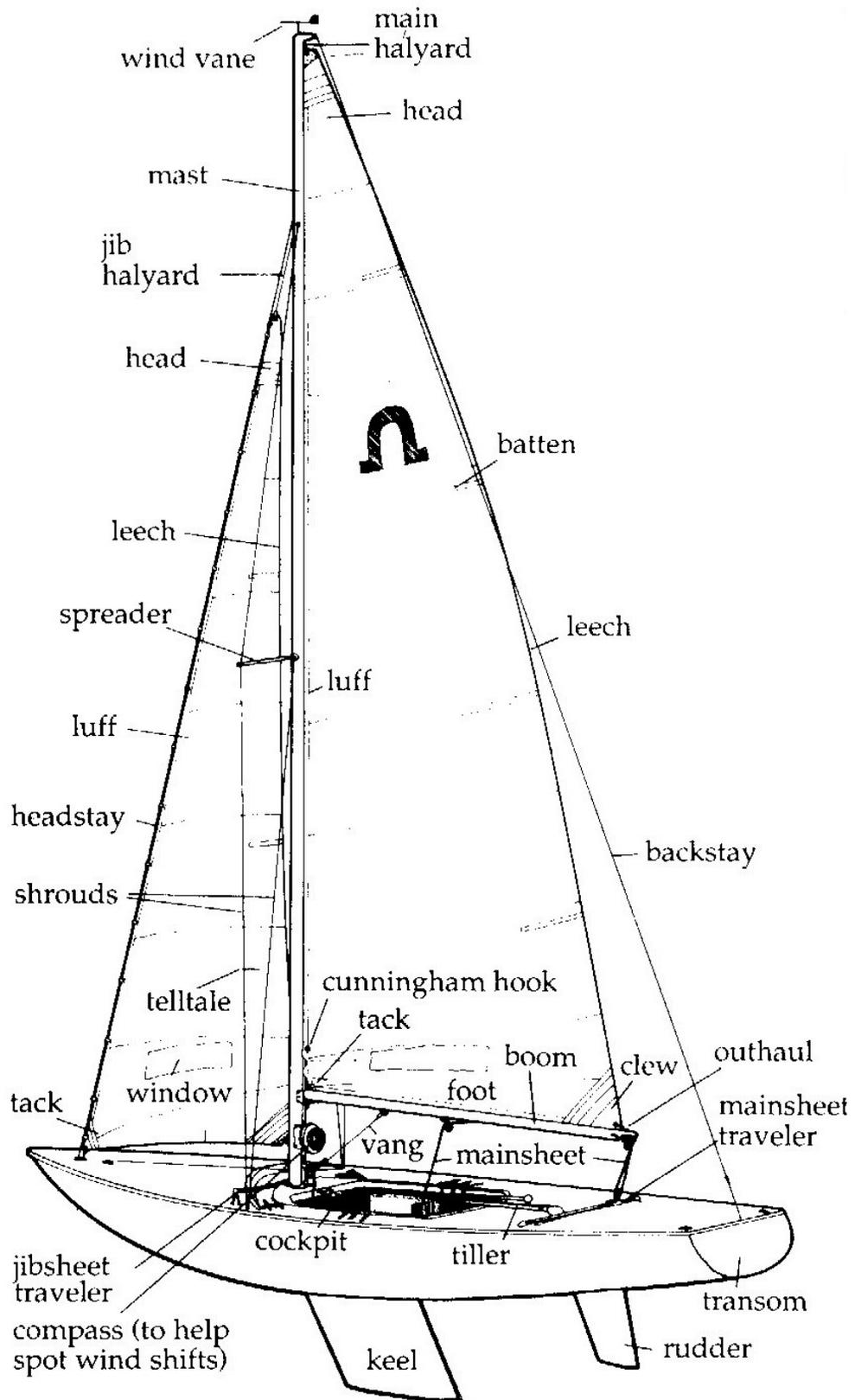
**Halyard:** A line used to hoist or lower a sail.

**Head:** The top corner of a sail

**Jib Lead:** The block or fairlead, through which the jib sheet passes, between the clew of the jib and the winch. The position of the lead has a great effect on the shape of the jib

**Lazy Sheet:** The sheet on the genoa that is not currently in use.





**Leech:** The back edge of a sail.

**Lee Helm or Leeward Helm:** The tendency of a boat to bear off when the helm is released. Lee helm is normally encountered in light air or if your mast is too far forward in the boat. See "Weather Helm."

**Luff:** 1. The forward edge of a sail. 2. The flapping of a sail caused by the boat heading too close to the wind or because the sail is not trimmed tight enough. 3. "Luffing" is altering your course toward the wind. In racing, luffing is a defense permitting a leeward boat to protect its wind from a boat passing to windward

**Outhaul:** The control line that pulls the mainsail clew to the end of the boom, tightening the foot of the sail.

**Overpowered/Underpowered:** A boat is overpowered when it heels too much from having too much sail up. Underpowered is when a boat is slowed because it does not have enough sail up.

**Rake:** The mast's inclination from vertical. The amount of rake is measured from the back of the mast at the partners to a plumb line hanging from the main halyard.

**Roach:** The area of a mainsail that protrudes beyond a straight line from the head to the clew. The roach is supported by battens.

**Shroud:** Wires that support the mast from side to side.

**Skirt:** The act of lifting the bottom edge of the genoa up over the lifelines at the bow as it is brought in tight.

**Spreader:** Strut attached to the side of the mast, which amplifies the shrouds ability to support the mast.

**Squaring the Pole:** Tightening the guy, which pulls the spinnaker pole back.

**Stay:** Wires that support the mast fore-and-aft, e.g., "forestay" and "backstay." Also see "Shroud."

**Tack:** 1. The lower forward corner of a sail. 2. Turning the boat so that the bow passes through the eye of the wind. 3. (Port or Starboard) You are sailing on starboard tack when the boom is on the port side and vice versa.

**Telltails:** Streamers attached to the sail to indicate wind flow. Tri-Radial: A sail construction technique where radial panels emanate from all three corners of the sail. (Also see bi-radial.)

**Twings:** Short lines attached to the spinnaker sheet and guy that are used to control how far away from the boat the sheet/guy is allowed to go.

**Vang:** A block-and-tackle that hangs under the mainsail boom, that controls the angle of the boom. Lowering the boom tightens the leech of the mainsail.

**Weather or Windward Helm:** The tendency of a boat to head up when the helm is released. Weather helm is measured in degrees of angle that the rudder must be turned to sail a straight course. See "Leeward Helm."

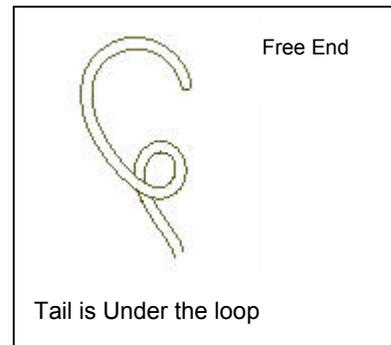
## 10 Other Useful Stuff

### 10.1 How To Tie a Bowline

This discussion assumes you are trying to tie a bowline around the clew of the genoa.

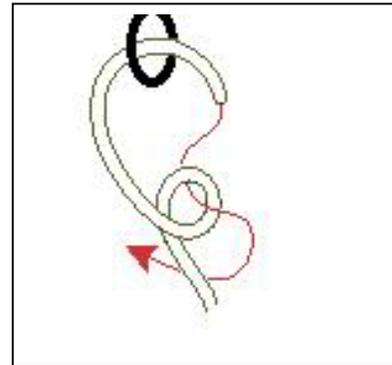
1. Form an eye in the long part of the rope (with your left hand), about a foot from the end.

The tail of the long part of the rope must be UNDER the free end of the rope.

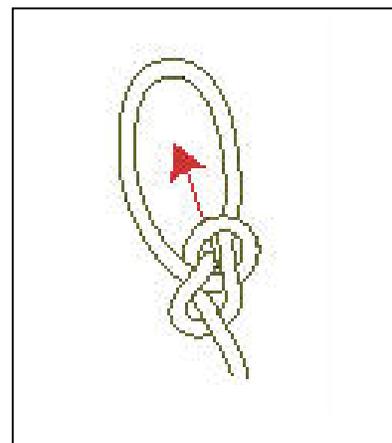


2. Still holding the loop with your left hand, take the free end of the rope with your right hand, and put it through the grommet in the clew of the genoa.

Bring the free end up under the loop, and out, and under the long part of the rope.



3. Take the free end back down the hole in the loop the same way you came out. When teaching kids this knot, they say "the rabbit comes out of the hole, around the tree, and back down the hole"...



**Important Note:** On Fast Lane, when tying sheets on the big (#1) genoa, the resulting loop through the clew of the genoa must be very tight. So once you complete the knot, tighten up the resulting loop by feeding the 'free end' in through the loop in the knot and taking up the slack.