

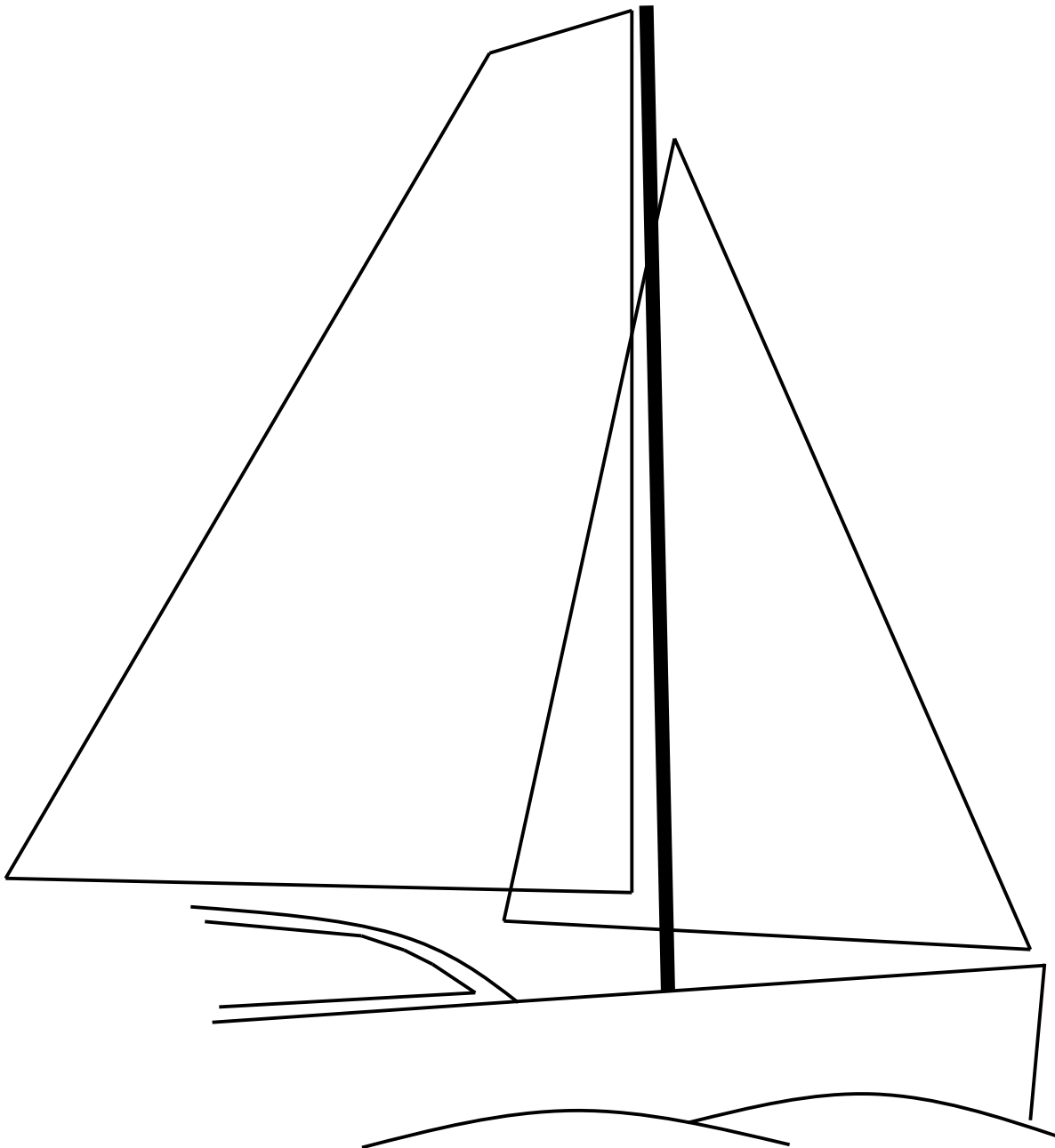
# SEAMANSHIP MANUAL

For 1<sup>st</sup>-Time Charterers

by Hannu Koho

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# VHF USAGE

## Sending a Distress Call

You may only have a very short time to send a distress call. Here is the procedure in this order:

- Tune VHF to channel 16.
- Press the handle and repeat the word "MAYDAY" 3 times.
  - use "Pan Pan" (pronounce PAHNN PAHNN), if not a life-threatening situation
- "This is (name of boat )" – Repeat boat name 3 times.
- Describe your boat
  - 40-foot Moorings Catamaran, white hull, 8 persons aboard
- Indicate the nature of distress (sinking, fire, etc.)
- Give position by latitude and longitude or by bearing and distance to a well-known landmark or navigational aid, or in any terms that will assist a responding station in locating the vessel in distress.
- Indicate the kind of assistance desired.
- End with "over".

As a rough guide, your charter boat VHF has a range of about 10 miles IF not obstructed by high hills.

## How to Use VHF

- Always listen before you start transmitting to ascertain a clear channel. If others are talking, wait until they're finished.
- Before calling another vessel on a hailing frequency, be sure in advance that you have a free working channel available to switch to.
- Press the handle and state 1-3 times in succession the name of the boat or station you are calling,
- Follow by stating the name of your boat, then "Over."
- Wait for a reply. If you do not get a reply within 15/20 seconds, you may try a second and third time. If no response, try again later, but do not stay on Ch 16 calling endlessly.
- Once your party replies, you instruct him/her to switch to a working channel and clear out of channel 16.

Example:

Vessel Moondance:	<i>"Windstar, Windstar, Windstar ... this is Moondance"</i>
Vessel Windstar:	<i>"Moondance, this is Windstar, over"</i>
Vessel Moondance:	<i>"Windstar, switch to channel 68 (six eight), over"</i>
Vessel Windstar:	<i>"Six eight over"</i>
Vessel Windstar (on Ch.68):	<i>"Moondance, this is Windstar"</i>
Vessel Moondance:	<i>"Windstar, bla bla bla... ."</i>

When finished:

Vessel Moondance:	<i>"Moodance out, back to 16"</i>
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If you do not receive any answer, repeat your call every 2 minutes.

- In general, stay on standby on Channel 16 at all times. The US Coast Guard monitors 16 for distress calls, and also to broadcast storm warnings and other crucial marine information or warnings.
  - when the VHF is turned on, it will tune automatically to Ch.16.
  - **Remember:** Ch. 16 is the international calling and distress frequency, and it should be used essentially for that purpose.
- Channels that boaters can use to communicate among themselves are: 9, 16, 68, 69, 71, 72, and 78
- Usually, charter companies have a permanent working channel, which they use to communicate with charterers without having to call on ch. 16.
  - Ask instructions at the skippers briefing before the start of your cruise.
- VHF calls to shore.
  - call VI Radio on ch.16 and ask them to place a phone call for you. When they have the party on the phone, they will connect you via the VHF that you will use as a phone.
  - However remember that the conversations from a VHF to a land phone can be heard by anyone listening to the channel you're on. So no privacy here!

# DOCKING

Key words: **PREPARATION** and **SLOW**.

**NEVER use feet or leg to fend off a dock or another boat.**

## Leaving a Slip

### Preparation

- Make sure that everything is in order on the deck and in the cockpit.
- One or two crew should be standing on the foredeck with a long boat hook and a fender at the ready to fend off a potential collision with another docked boat.
- The dinghy should be tied on one of the front side of the bow, with the painter as short as possible.
- Your engine is on and idles on neutral.
- Before proceeding, you should know 3 things:
  - What's the wind direction so you know where it's going to push your bow;
  - What is your plan of action, step by step – communicate to the crew;
  - What your path is going to be right after you'll be off your slip.

### Leaving

- If the boat is stern to:
  - Instruct your crew to release the stern lines and bring them on board. Just throw them in the cockpit for the time being, as now is no time for coiling.
  - Give a burst forward to the boat and have the foredeck crew release the bow line(s).
  - Keep moving forward very slowly. If you can get out of the slip and the marina by just going straight, then do so.
  - If you have to immediately turn into a channel, keep going until the boat is 2/3 out of the slip. Then start turning your boat slowly but firmly, especially if it is windy, in which case you need a little more power.
  - In all cases, always bear in mind that you need to maintain power in order to keep steerage.
- Remove the fenders and store them.
- Once you get out of the marina, bring the dinghy to the stern and cleat the painter.

## Coming Back Into a Slip

### Preparation

- About 30 minutes before reaching the marina, call the dock master on the VHF. He will tell you which dock/slip you will have to put the boat at.
- Before entering the marina: a)
  - Have the crew tie up the fenders (2 on the side, 1 or 2 fenders at the transom);
  - Have a crew bring the dinghy to the bow and tie it on either side with a short painter;
  - All the docking lines should be out and cleated.
  - One or two crew should be standing on the foredeck with a long boat hook and a fender at the ready to fend off a potential collision with another docked boat.
- At this stage, your crew should know exactly what your game plan is, and what everyone has to do. Basically: You steer, 1 crew is assigned to the stern lines and watch, 1 crew at the bow to lasso the pilings or cleat to the side dock, 1/2 crew(s) with boat hook and fenders in hands.

### Coming In

- Spot your slip and slow down as much as you can without losing steerage.
- Look at the slip, how the wind is blowing and visualize in your mind what you'll do.
  - If necessary go around to see how wind and current push your boat.
- Once your boat is positioned, start backing up slowly but steadily.
- If you feel you're going to miss, stop your maneuver and go around to start over.
- When you have backed up into your slip, the foredeck crew should immediately jump on the side dock to round up the bow line around the dock cleat, or lasso the line around the piling.
  - Do it in a way that allows slacking it off as you keep backing up.
- Once your transom is close enough to the dock, have your stern crew either jump on the dock with one of the stern lines, or throw the lines to some help on the dock.
- Immediately stop the boat. Adjust the length of your lines.

## Coming to a Regular Dock (Fuel Dock, etc.)

Everything above remains the same, except:

- Tell your crew in advance on which side you're going to dock.
- Position 1-2 fenders on the side based on your approach.
- Approach the dock at a very shallow angle and very slow, but keeping steerage.
- When your bow is about 2 to 3 feet from the dock, throw your sea-side engine in reverse, and your stern will start to back toward the dock.
- Your crew(s) should step on the dock, or throw the lines to helpers on the dock.
- If you are just refueling or taking on water, a bow line, stern line and one spring line are enough. If you intend to stay longer, you will need 2 spring lines.

# MOORING

- Make sure you arrive early, especially in the high season, particularly if the anchorage is not too safe to drop an anchor in.
- Before arriving at the anchorage, and after you have dropped your sails, grab your binoculars and spot a couple of balls you'd like to settle on.
- Shorten your dinghy painter a lot so that the dinghy is right behind your stern and the painter is not trailing in the water.
- Prepare a bridle to put through the eye of the mooring line, and fasten it to one of the bow cleats. It is very important to use a bridle since very often the moorings ball line is short.
  - Without a bridle, your boat would pull hard on the ball as she will "sail" on the mooring.
- A crew grabs the hook and stands on the bow. He will guide you with hand signals toward the ball (arm extended in the direction of the ball.)
- Approach upwind and reduce speed early enough that you won't pass the ball. Try to calculate in a way that you will arrive at 0 kts, just letting the boat die on the ball.
- The crewman grabs the mooring line, passes the bridle line through the eye of the mooring line and secures the other end of the bridle to the other bow cleat. Do not cleat the ball line only on one hull.
- Additionally, especially if the weather is rough, consider tying a second line directly between your boat and the mooring ball itself as a safety precaution.
  - Although not too usual, it happens that some mooring lines are not very well maintained. As a result, they may break, leaving your boat drifting.
  - At the very least, **check the mooring line** to make sure it is not too chafed and is still in good condition.
  - Snorkel to check that the mooring tackle looks in good order.

## Hand Signals

- **Steer to starboard:** Right arm completely extended to the right, hand flat.
- **Steer to port:** Left arm completely extended to the left, hand flat.
- **Steer straight:** Arm completely extended forward, hand flat, palm forward.
- **Slow down:** Arm slightly extended along the body, hand palm downward moving in a downward motion.
- **Stop:** Arm extended upward vertically, hand flat, palm forward. No arm or hand motion.
- **Back up/reverse:** Fist with thumb motioning backward
- **Mooring set:** Thumb up and forefinger making a circle (this can be used for anything that means OK.)

## Mooring Line Break (Under the Ball)

- Turn your stern into the wind while you drop the mooring ball.
  - Why? In order not to put the long line from the bottom of the mooring ball into propeller
- Motor to safety and decide whether to anchor or look for another mooring ball.

# ANCHORING

Key words: *preparation* and *slow maneuvering*.

## Setting Anchor

- Arrive at your anchorage relatively *early*, with enough light to locate potential reefs and other hazards.
- Always anchor under power only. At this stage, all sails should be furled tight.
- Shorten the dinghy painter all the way.
- Take a tour of the anchorage at *very slow speed* to:
  - Get a sense of where you would like to be for the night.
  - Spot the sandy areas where your holding will be best. If possible avoid grassy areas
  - Beware of noisy spots.
  - Avoid rolly spots if possible.
  - Check the depths. Recommended lengths: if you only have chain, your scope ratio is *at least 5 to 1* If you have chain and rope, your ratio is 7 to 1.
  - The anchor and the chain should be clear, slightly disengaged from the bow rollers.
- Make sure you will have enough room to swing without hitting any other boat.
- Approach facing the wind at very slow speed and simply drop your anchor where you want it set.
  - Because a cat offers less resistance to the water than a monohull, it takes more time to slow down than a monohull. So make sure the boat has completely stopped
  - Keep the boat straight into the wind, using the engines at idle speed. *Do not let the boat go sideways.*
  - If you're anchoring among other boats, drop your anchor off the beam (or the stern) of another boat. That way, assuming all boats are doing this, the anchoring configuration is of staggered boats,
- Stop the boat completely.
- At this point, the anchor man should let about 2/3 of the desired length out.
  - CATAMARANS: As soon as the anchor is set, back the boat *straight* with both engines
- The bow crew rests one foot lightly on the chain between the windlass and the bow roller. This accomplishes 2 things:
  - You're making sure the chain does not "jump", which would mean the anchor is not set. If this is the case, you will feel the chain literally jumping under your foot. Let more chain out and redo #5, until the chain remains taut under your foot when backing up.
  - If the anchor is set, backing up the boat really "digs" the anchor deeper. Complete the digging process by gradually revving up the engine in reverse for about 30 sec. Visually check that the boat does not drag. When the anchor is set, you can cut off your engine.
- If the anchor is NOT set, restart the anchoring procedure until you are satisfied.
- Take you snorkel mask and fins and go swim over the anchor to *visually* check it is properly dug in the sand. Have a look-out on the foredeck of the yacht for safety.
- Set up a snubber line with a bridle. Keep the boat into the wind as you're doing this.
- Take several precise bearings ashore to visually mark the boat's position.
- For the next hour, and then periodically after that, visually check that the boat is not dragging by checking the bearings and verify you are not moving.
- If it is extremely windy or you are expecting squalls or a storm during the night, wake up every 1 to 2 hours to check on the anchor and the neighbors' position. If the weather is *really* bad, set an anchor watch for the night by rotating your crew.
- I have the habit of taking a heading of a safe exit of the anchorage, if we have to leave in the middle of the night for whatever emergency reason.
- Lastly, in most cases, and unless storm force winds are expected (in which case, you should sail back to the charter base), there is no need to set 2 anchors.

## Hand Signals

- **Steer to starboard:** Right arm completely extended to the right, hand flat.
- **Steer to port:** Left arm completely extended to the left, hand flat.
- **Steer straight:** Arm completely extended forward, hand flat, palm forward.
- **Slow down:** Arm slightly extended along the body, hand palm downward moving in a downward motion.
- **Stop:** Arm extended upward vertically, hand flat, palm forward. No arm or hand motion.
- **Anchor going down:** Thumb down not moving.



- **Back up/reverse:** Fist with thumb motioning backward
- **Anchor set:** Thumb up and forefinger making a circle (this can be used for anything that means OK.)

## Weighing Anchor

- Start you engine.
  - Most charter boats require the engine on to operate the windlass.
- Have someone at the helm looking at you and your hand signals at all times.
- Grab the windlass remote control and stand on the most forward point at the bow. Observe which direction the chain is lying in.
  - If the windlass does not operate with enough torque, ask the helmsman to rev up the engine.
- Using hand signals, instruct the helmsman to move the boat forward *very slowly* in the direction of the chain.
  - Make sure you have the helmsman stop the motion before you overshoot the anchor.
- Start cranking the chain up while it is slack. When you get to the snubber line, stop cranking and simply remove it. Then resume cranking. When the chain is taut again, instruct the helmsman to move the boat forward again.
  - The idea here is to avoid using the windlass to move the boat forward, as this causes unnecessary strain on the windlass shaft and on the chain roller.
- Once you find the boat straight above the anchor, finish cranking the chain up all the way until it settles on the roller.
- Signal the helmsman that the boat is free.

## Hand Signals

- See steering signals in Setting Anchor.
- **Anchor chain going up:** Thumb up not moving.
- **Anchor set on the bow roller, boat free:** Thumb up and forefinger making a circle.

## Anchor Dragging at Night

- To prevent this,
  - Make sure your anchor is properly set and take several bearings after anchoring.
  - Then take more bearings after sunset, so you can use them when it's dark.
  - Take a bearing to the escape path out of the anchorage. This is to include cross bearings or direct "from" bearing from a landmark to guide you out of the anchorage.
  - Note the depth of the area where you are. If you notice a big change in the depth, chances are the anchor is dragging.
- If the anchor drags, the first thing to do is to start the engine.
- Try to pay out more chain. Lots of it, if you are not too closely surrounded by other boats.
- If this does not work, you have to re-anchor.
- Make sure all lights inside the boat are turned off to keep the best night vision possible.
- Get back to your original anchor place and re-anchor.
- If you choose to anchor in another area of the bay, move the boat VERY slowly until your night vision is acceptable.

## Dragging Situations

- If **one of your neighbors** is dragging:
  - **During the day:**
    - Immediately call the attention of the other boat crew. Prepare fenders to avoid damage to you boat. If there is nobody on board the dragging boat, come on board the boat and reset the anchor. You might not be prepared to do that, in which case, you might have to move your own boat.
  - **During the night:**
    - if you are sound asleep, you might become aware of it only when you hear the other boat hit yours. Wake up your crew and get on deck immediately. Start your engine and keep it idling. Try to wake up the crew of the other boat (yell, flash your lights, etc.). Prepare fenders and do as in the day procedure.
- If **your boat** is dragging:
  - **During the day:**
    - Start your engine and keep it idling. Try to pay out more chain or rope. Wait a few minutes to see if the anchor resets itself. If not, you will have to re-anchor.
  - **During the night:**
    - If you are sound asleep, you might become aware of it only when you hear other people screaming and flashing lights at your boat. Wake up your crew and get on deck immediately.
    - Start your engine and keep it idling. Try to pay out more chain or rope. Wait a few minutes to see if the anchor resets itself. If not, you will have to re-anchor. Turn your depth sounder on and try to find another spot to anchor. If you have to do that, *turn off all the lights* on the boat to get the best night vision possible. Move to another place at *extremely* slow speed.

# DINGHY HANDLING

## Boarding the Dinghy

- Bring the dinghy as close as you can to the boat and tie up the dinghy laterally to the boat's transom.
- Jump straight inside the dinghy. Do not try to stand on the gunwales if it is a hard hull. If it is an inflatable, you can step on the side tube to get in.
- Spread the load evenly, and do not overload the dinghy.
- If you are going for a snorkeling trip, take the diver down equipment. This is a bag with a diver-down flag and float safety equipment.
- Check that there is enough gasoline in the tank for the trip you intend to take.
- Start the outboard **before casting off** from the boat or a dinghy dock.
- Using the dinghy at night,
  - always carry a 360-degree white light and a powerful flashlight to show your presence and find things
  - Bring a towel to wipe off humidity

## Docking and Beaching

**Docking** is pretty straightforward. Just approach the dock slowly. When tying up to the dock, leave the painter long enough to handle tide changes if you are in an area that has a tide.

If you are in an area that you know is theft prone, you want to tie up your dinghy with a steel cable and a padlock, preferably including the outboard engine handle in the loop. If you are in such an area, the charter company will certainly supply you with those items and alert you to the situation.

**Beaching** the dinghy is relatively easy if there is no swell or breaking waves near the beach.

- Approach with some speed.
- Have someone at the bow looking out for coral heads.
- When getting close to the beach, tilt your outboard up 1/3 of the way then kill the engine and finish coasting on the sand.
- When on the beach, pull the dinghy way above the water line and tie it up to a tree or a rock.
- If there are big breakers or a deep swell, simply **do not try to beach the dinghy**.

## Towing The Dinghy

- If the dinghy has a floating type of line for the painter, tie the painter to the boat's stern cleat with a cleat hitch and then attach the remaining free end of the painter to aft stern rail with a bowline.
- When towing the dinghy, remove all extra gear from it, like your snorkel gear, sandals etc.
- Always tilt it up to the max position.

## The Dinghy at Night

- To prevent tapping and slapping noises, tie the dinghy with its bow looking the other way from the boat's transom. In most cases, the noise disappears.

# MAN OVER BOARD

This is unquestionably the most difficult thing to deal with, because it tends to create panic. And panic is the worst that can happen in this situation.

- **GOLDEN RULE of moving about a boat: "One hand for you and one hand for the boat".**
- Crews should avoid relieving themselves overboard, standing. Especially at night when everybody is asleep.
- Beware of slippery decks.

## IMMEDIATELY.

- **Yell "Man Overboard, port/starboard side!"**
  - Point at the MOB and never stop **staring and pointing** at the person in the water until the person at the helm says he/she can see the MOB and no longer needs the pointer.
- **Throw a flotation device to MOB.**
  - There is always one on the stern rail, with a long line.
  - Boat cushions also work.
- **Assign a crewmember to keep sight of the MOB at all times.**
- **Stop the boat by heaving to or by heading into the wind.**
  - You can also throw as many cockpit cushions as you can. They serve as additional flotation devices and as a "trail" to get back to the MOB.
- **Furl the genoa, just keeping the main up and start getting back to the MOB.**
  - You can start the engine, but keep it on idle.
  - If you engage the transmission, be EXTREMELY careful when you get close to the MOB.
  - In rough seas, be extra careful because you do not want to run over the MOB.
- **Approach MOB from the downwind side.**
- **Once you are next to MOB, throw him a life ring with line or a long line with a large loop.**
  - TURN THE ENGINE OFF!
  - You now have to get him/her back on board, which is the most difficult part.
  - Use the swim platform with a ladder. In rough seas, this can be dangerous.
  - Pull MOB into the dinghy.
  - Pull the MOB on board from the boat side.
  - Have the MOB put the looped line around the body and under the arms, and winch the person up.

# EMERGENCIES

## Before Leaving

During the pre-charter briefing, you and your mates should pay utmost attention to the safety items pointed by the briefer, for ex. location of life jackets, flares, fire extinguishers (locations and operation), operation of propane stove, anchor windlass reset button, fuel shut-off, emergency tiller, operation of bilge pumps (electric and manual), VHF, seacock, shut-off valves at the bathroom head, etc. Ask questions and/or demonstrations for anything you do not understand clearly. This is not wasted time on your vacation: failures do happen.

## Fire

Although rare, fires can generally be of 3 kinds: inadvertently man-provoked (cigarette, match, etc.), propane related, or fuel related.

- The first thing to do is to shout "Fire!" so the entire crew is alerted.
- Use the fire extinguishers towards the base of the fire, not the flames.
  - Do not throw water on a gasoline or fuel fire, as it only spreads it.
- If you feel that you are not be able to put the fire out, do not wait too long and have a crew member send a distress call with the VHF.

## Collision

- If you feel that a collision is inevitable and imminent, forbid absolutely the crew to try fending off the other boat with their hands or feet. Pushing off a moving 15 or 10 ton boat is simply impossible and a stupid idea.
- Immediately after the collision happens, check if anyone among your crew has been injured and/or thrown overboard.
- Evaluate the boat's damage: Is there a gash in your hull? If so, is there water coming in the boat? If there is, stuff things in the opening, like a big beach towel, pillows, bed sheets etc.
- Get as much information as you can about the other boat: name, hailing port, charter company, name and address of skipper (for insurance purposes).
- Call the charter company on your VHF or cell phone as soon as things are somewhat sorted and report the accident. They will assess the situation and either send you a chase boat, and/or give you instructions on how to proceed.

## Flooding

- If you find out water is coming in your boat, immediately activate the electric pumps.
- If the automatic pump did not trigger, activate it manually.
- Quickly try to locate the cause. Most of the time the culprit is a seacock fitting whose hose came loose:
  - Look for the heads, the galley sink, and the engine water seacock.
  - If you find the pulled off hose, reattach it and it should be over.
  - If the cause is a hole, stuff things in the opening, like a big beach towel, pillows, bed sheets etc.
- If you manage to stem the flow, start making way towards the closest port.
- If you realize you will not be able to do that, place a distress call and give the boat description, exact location and the description of the emergency.

## Engine Failure

What if the engine does not start?

- This is the very reason to keep all sails up for several minutes until you're sure the engine runs normally.
  - If the engine does not start, put the boat safely in heave to position and look for the cause of the engine failure.
- Even if the engine starts normally, keep your main sail up as long as possible before anchoring or mooring:
  - In case a running engine suddenly stops, the main sail is your backup mean of propulsion.

**Here are a couple of quick things you can check before calling the charter company:**

- Is the engine-kill pushed back in the start position?
- Is the gearshift lever in neutral position? Most engines will not crank start if the lever is engaged in forward or backup
- Are all the battery switches on?
- If engine died while running, was it overheating? If so, the cooling water intake is probably clogged.
- If you manage to fix yourself a problem which was due to a real malfunction, report it to the charter company at the end of the charter.

## **Windlass Failure**

All electric windlasses can also be operated manually with a handle stored next to the windlass. Make sure to ask the briefer before departing how to operate it.

- If the windlass stops working abruptly, it is most probably because there was a power overload.
- The windlass needs to be reset with a special switch usually located in the cabin. Ask the briefer where the reset switch is located.

## **Sea Sickness**

The market is flooded by all kinds of pills, patches, wristbands, earrings. However, each person reacts differently to those remedies, and there is no way to tell in advance which one will work on you.

Some medications have side effects, mainly drowsiness. Anyway, whatever you use, it has to be in or on your body well in advance of the potential occurrence. And if there are crews prone to be ill, keep a bucket handy or have them use the leeward side.

In addition, here are a few tips to try to prevent it.

- Avoid excessive alcohol consumption before sailing.
- Stay outside as much as possible.
- Keep your eyes on the horizon.
- Try to keep yourself busy (steering, monitoring sails etc.).
- Avoid reading while boat is in motion. If down below, keep the area well ventilated with fresh air.

# HEAVY WEATHER

- Listen to the weather forecast every morning and night and at least once a day.
- Depending on your skills, if you hear anything like: "wind over 25/30kts," watch out, because chances are there will be gusts *over that*.
- The wind starts to build up before the squall is on you. One more reason to prepare early.
- Look at the squall line: the more slanted the rain curtain, the stronger the wind will be under the squall.
- It is always much easier to shake a reef when it is not needed, than trying to reef when you need it.
- It is imperative that you understand the reefing procedure very well, so make sure this is explained to you clearly at the boat briefing.

## Prepare Early

- Rule of thumb: "If you're thinking about reefing, it's already too late".
- Do not wait that your boat is overpowered to reef your sails. There are 3 indications telling you that your boat is overpowered:
  - Your boat is heeling more than 25 degrees
  - Your rudder position indicator (if the boat has one) shows more than 10°/15° of weather helm
  - If you do not have a rudder position indicator, you can feel it because you are fighting the steering wheel hard to keep the boat from going into the wind

## Prepare for Heavy Weather

- **Reef early** when you feel the wind really hardening and/or when you see -in the tropics- this dark gray squall line coming at you from the horizon.
  - Start by reefing the jib or genoa
- Close all the hatches and ports, and secure everything below, especially the heavy objects (cameras, tea pots, etc.)
- Make sure your anchor is securely tied on the bow.
- Depending on the strength of the weather, it might be a good idea to put in your life jackets, especially if you have waited late for your reefing and need to go on deck to do it. Definitely put the life jackets on the kids.
- Double check the dinghy painter and make sure it is well cleated. If you have left some stuff in it, remove it.



# SNORKELING

- Snorkelers should stay as a group when snorkeling, and should be prohibited to snorkel alone at any time, and, even more prohibited, to go snorkeling alone without advising other guests.
- One member of the group should attach to him/herself the diver down fly and float safety gear that should be supplied onboard every charter yacht.
  - If the gear is not onboard, be sure to request it before leaving the dock.
- Snorkelers should know the prevailing current in the area and its direction.
  - It is always a good idea to start a snorkeling trip *against the current*. That way, snorkelers will be carried back by the current toward the boat at the end of their swim, when they are the most tired.
- Snorkelers must inform the skipper and/or a member of the crew if and when they are going snorkeling and their intended location.
- Get a time frame on how long the snorkel trip is for.
- Snorkelers should stay close to the shore or in designated snorkeling areas and away from designated navigational channels used by any type of vessel.
- Snorkelers should wear a bright colored t-shirt when snorkeling to help protect them from sunburn and also to help them being spotted in the water more easily.
- Snorkelers should be vigilant and aware of the surroundings as well as other boat operators in the area where they are snorkeling. For example, snorkelers should be attentive to the following:
  - Any buzzing sound (probably a dinghy motoring in the area). If there is a dinghy approaching, snorkelers should make sure they have been seen.
  - Their location relative to their boat. If a strong current has taken the group too far, the group should swim back to a reasonable distance.

# ESTIMATING DISTANCES

## Visual Indications

Standing on a boat deck, eyes about 12 feet above water level, with clear weather, here is what one can see.

- 4 nautical mile
  - Looking towards the shore: Possible to recognize the shape of houses and trees. A beach is not distinguishable.
  - Looking only over the water: One can recognize the superstructures of a large ship. Sailboats are white dots.
- 2 nautical mile
  - Looking towards the shore: One recognizes doors and windows but not human beings.
  - Looking only over the water: One barely starts to identify large buoys. At night, boats navigation lights start to be visible.
- 1 nautical mile
  - Looking towards the shore: One can see details of houses and of traffic. Persons are small dots.
  - Looking only over the water: One can make out crewmembers on deck. Sailboats' rigging are visible.

## Bearing Methods

### Right Angle Method

- Point A: When the object to which you want to measure the distance from your boat is on 45° bearing of the boat's heading
- Start measuring the distance covered by the boat with the speedometer.
- Point B: When the same object is on 90° bearing.
- Determine the distance run by the boat from point A to point B = Distance from boat to object at point B

### The Double Bearing Angle Method

- The boat starts at point A.
- Take a bearing of the object at any point over 20° of the boat's heading.
- Start measuring the distance run by the boat with the speedometer.
- When the object is on a bearing angle double of what it was at point A, that's the boat's point B.
- Determine the distance run by the boat from point A to point B.
- That distance is your boat's distance from the object at that moment.

### Measuring Angles with a Hand

- Arm extended, fist tightly closed, thumb extended out of the hand:
  - From one knuckle extremity to the other, about 10°
  - From one knuckle extremity to the outside of the thumb about 15°

# CATAMARAN CONSIDERATIONS

## Under Power

Here is a quick guide to maneuvering at slow speed:

- **Forward in straight line:** both engines forward - wheel centered
- **Back in straight line:** both engines back - wheel centered
- **Steer to starboard:** PORT engine forward, STARBOARD engine back - wheel centered or to starboard.
- **Steer to port:** STARBOARD engine forward, PORT engine back - wheel centered or to port.

## Under Sail

- Cats do not go upwind as well as monohulls, although they have much improved lately in that department. You won't get much closer than 45/50 degrees to the wind, going upwind.
- If the sea is choppy and you are on a smaller cat, like a 38ft. the yawing will be a little difficult - which is why you see so many charter cats simply motoring upwind.
- If you still decide to sail, bearing off a couple of degrees will usually alleviate the motion.
- Do not try to go dead downwind
  - If you do, you probably want to be under jib or genoa only.
  - A more efficient point of sail is between 120 degrees and 150 degrees.
- One of the cats' problems is that there is no heeling to give a feel that the boat is over-canvassed
- Be careful and stick with the information given by the charter company's briefer.
- Start de-powering the main sail using the traveler, because it has a very wide span, and it can be let go very quickly.
- Put the first reef at around 20kts. of wind.
- Put the second reef at 25kts. and the headsail should be completely furled.

## Tacking

- Without sufficient speed, you simply will not tack... unless you start the engine! So get enough of it, just before tacking.
- Start bringing the main sail in close.
- Tack the boat decisively but smoothly through the wind without losing too much speed.
- If needed, let the jib get backwinded before releasing it to the other tack, in order to help the bows to turn better through the wind.
- Once the bows are on the other side of the wind, bear off a little more than necessary until you get your original speed back.
- Get back on course once you have re-established you speed.

# PRE-DEPARTURE CHECKLIST

## FOOD AND PROVISIONING

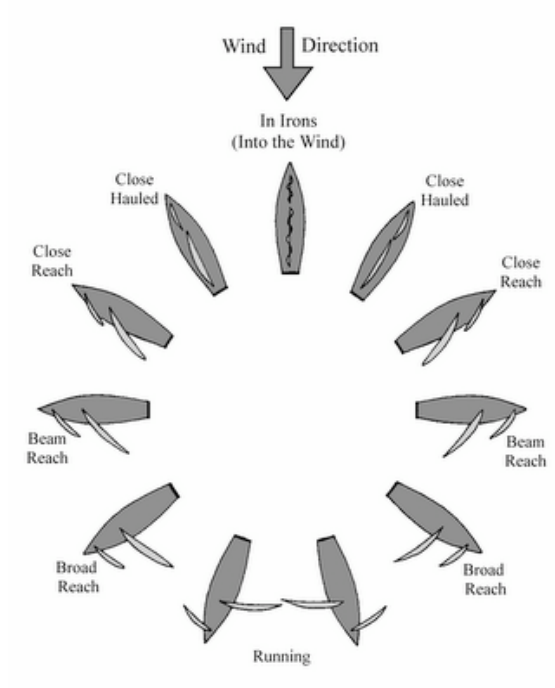
- If you have ordered food either from the charter company or from a supermarket, you have to double check that everything is conforming to your order.
  - Most supermarkets and charter companies allow to exchange some items in order to accommodate your new arrangement.
- Make sure you have enough staples like paper napkins, paper towels, liquid soap, bathroom items, salt, pepper, sugar, cooking oil, ice.
- Stow food in the order that you will use it: most perishable and first to be used near the top, but near the cooling plate.
  - Don't store lettuce or other veggies next to the cold plate.

## WEATHER

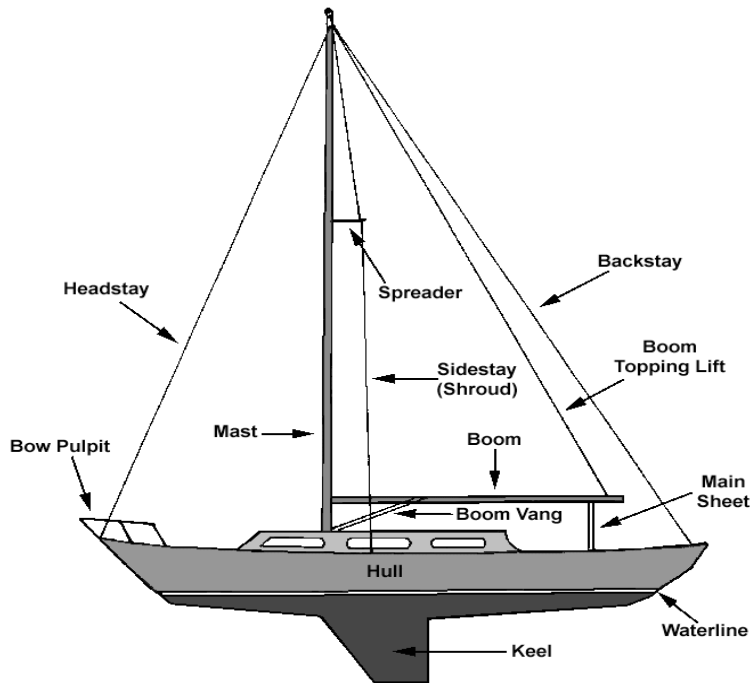
- Get the latest forecast as well as the trend for the coming days.
- Ask the base staff if there is anything in particular you should know for the duration of your cruise — strong winds expected, expected change in the usual patterns, etc.
- If your charter is during the summer months in the Caribbean, ask the base staff what the procedure is in case there is a tropical storm coming and they have to recall the boats back to the base.
- Get all the radio frequencies you need to check the weather daily. If you are chartering in the Caribbean, visit our Caribbean weather info for all the information you need.

<p><b>DECK/RIGGING:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> winch handles (2)</li> <li><input type="checkbox"/> boat hook</li> <li><input type="checkbox"/> cockpit cushions</li> <li><input type="checkbox"/> water/fuel fills, deck plate key</li> <li><input type="checkbox"/> fenders (4)</li> <li><input type="checkbox"/> windlass &amp; breaker (try up / down)</li> <li><input type="checkbox"/> anchor</li> <li><input type="checkbox"/> windlass and handle (manual ops)</li> <li><input type="checkbox"/> manual bilge pump</li> <li><input type="checkbox"/> dock lines</li> <li><input type="checkbox"/> furling lines/drum (test roll)</li> <li><input type="checkbox"/> halyards, sheets (test main for free flow)</li> <li><input type="checkbox"/> reef points / lines (procedure)</li> <li><input type="checkbox"/> sails and ties (unfurl jib)</li> <li><input type="checkbox"/> life ring</li> <li><input type="checkbox"/> emergency tiller</li> <li><input type="checkbox"/> wind scoops</li> <li><input type="checkbox"/> snorkeling gear</li> </ul>	<p><b>WATER SYSTEM/HEADS:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> water valve system (switching)</li> <li><input type="checkbox"/> water pumps</li> <li><input type="checkbox"/> shower sumps</li> <li><input type="checkbox"/> head switches/pumps (test)</li> <li><input type="checkbox"/> breakers for all</li> <li><input type="checkbox"/> water level gauges</li> <li><input type="checkbox"/> deck shower &amp; cutoff</li> <li><input type="checkbox"/> faucets</li> <li><input type="checkbox"/> bilge pumps</li> <li><input type="checkbox"/> water heater</li> <li><input type="checkbox"/> water tanks - full</li> </ul>
<p><b>ENGINE:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oil check</li> <li><input type="checkbox"/> Coolant check</li> <li><input type="checkbox"/> transmission check</li> <li><input type="checkbox"/> spare oil</li> <li><input type="checkbox"/> spare trans fluid</li> <li><input type="checkbox"/> belts</li> <li><input type="checkbox"/> manual cutoff</li> <li><input type="checkbox"/> tools</li> <li><input type="checkbox"/> fuel level gauges</li> <li><input type="checkbox"/> intake strainer</li> <li><input type="checkbox"/> engine start, forward / back</li> </ul>	<p><b>CABIN:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> cabin key</li> <li><input type="checkbox"/> two sets of linens &amp; towels</li> <li><input type="checkbox"/> storage</li> <li><input type="checkbox"/> life jackets</li> <li><input type="checkbox"/> tool kit</li> <li><input type="checkbox"/> seacocks</li> <li><input type="checkbox"/> charts</li> <li><input type="checkbox"/> flashlight / batteries</li> <li><input type="checkbox"/> binoculars</li> <li><input type="checkbox"/> first aid kit</li> </ul>
<p><b>NAVIGATION/INSTRUMENTS:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> GPS + manual</li> <li><input type="checkbox"/> depth log (calibrate; measured from?)</li> <li><input type="checkbox"/> wind indicator</li> <li><input type="checkbox"/> speed log</li> <li><input type="checkbox"/> VHF</li> <li><input type="checkbox"/> cell phone</li> <li><input type="checkbox"/> stereo functions</li> </ul>	<p><b>GALLEY:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Propane locker &amp; spare tank (full)</li> <li><input type="checkbox"/> gas cutoffs</li> <li><input type="checkbox"/> manual freshwater pump</li> <li><input type="checkbox"/> fridge/freezer switches</li> <li><input type="checkbox"/> appliances work</li> <li><input type="checkbox"/> dishes,utensils</li> <li><input type="checkbox"/> fire extinguishers/flares, charged</li> <li><input type="checkbox"/> bucket/brush</li> </ul>
<p><b>ELECTRICAL:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> lights-interior and nav</li> <li><input type="checkbox"/> breaker panel</li> <li><input type="checkbox"/> inverter/breaker</li> <li><input type="checkbox"/> alternators</li> <li><input type="checkbox"/> charge rate meter</li> <li><input type="checkbox"/> 12v dc outlets (test)</li> <li><input type="checkbox"/> 110vac outlets</li> <li><input type="checkbox"/> AC amp load meter</li> <li><input type="checkbox"/> battery charge</li> </ul>	<p><b>DINGHY:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> fuel level</li> <li><input type="checkbox"/> anchor</li> <li><input type="checkbox"/> oil</li> <li><input type="checkbox"/> air pump</li> <li><input type="checkbox"/> cable/lock</li> <li><input type="checkbox"/> oars</li> <li><input type="checkbox"/> long painter</li> <li><input type="checkbox"/> start, water, forward/reverse</li> <li><input type="checkbox"/> bailing bucket</li> <li><input type="checkbox"/> wrist shut-off set</li> <li><input type="checkbox"/> motor safety line</li> <li><input type="checkbox"/> motor tilts / stays up</li> </ul>

# MISC. – Points of Sail



# MISC. – Parts of Boat



## MISC. – Knots

### CLEAT HITCH

Pass the line around the distant horn of the cleat and continue on around the other horn. Then cross the middle and pass the line around alternate horns to form figure-8's. Finally create a half-hitch and pull the end snug beside the last cross-over.



### BOWLINE

Form a loop a short distance from the end, allowing for the size of the loop and the knot itself. Pass the end of the line through the loop as though making a simple half-hitch. Pull the end through, then around the standing end, and then back through the loop.



### CLOVE HITCH

Form a loop in the line. Then form an another identical loop. Place the 2<sup>nd</sup> loop on top of the 1<sup>st</sup>. Place the knot over a post.

To make this around a post, loop the line around a post once. Then cross the line of the initial loop and go around again. Tuck the bitter end under the 2<sup>nd</sup> loop.



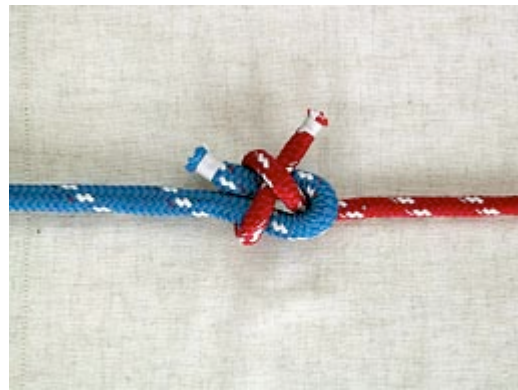
### **TURN & 2 HITCHES**

Pass the end around the post twice. Go around the standing end to make the 1<sup>st</sup> half-hitch and pull tight. Continue around in the same direction to make a 2<sup>nd</sup> half-hitch and pull tight.



### **SHEET BEND**

Form a loop in the 1<sup>st</sup> line and hold it in one hand. Pass the end of the other line through the loop and then around it (around the short end first, then around the long end). Finally, tuck the 2<sup>nd</sup> line under itself and pull tight.



### **FIGURE 8**

In the bitter end, form a loop by twisting a bight of the line. Then pass the bitter end around the standing end, i.e., take the longest journey, and through the loop and pull tight.





## MISC. – Sailing Terminology

### A

**ABEAM** -- 90 deg off the side of the boat.

**ASTERN** -- Behind the boat.

### B

**BACKSTAY** -- The wire that supports the mast from the aft side, running from the masthead to the aft end of the boat.

**BATTENS** -- Thin semi-rigid strips of wood or synthetic material inserted into pockets in the sail in order to maintain the shape of the sail.

**BATTEN POCKETS** -- Pockets sewn in the sail that receive the battens.

**BLOCK** -- A wood, metal, or synthetic casing containing one or more pulleys or sheaves.

**BOLT ROPE** -- A length of rope sewn along the length of the luff, and sometimes the foot of a sail, for fitting it into the groove of the spars.

**BOOM** -- The pivoting horizontal "pole" attached to the aft side of the mast to control the foot of the sail.

**BOOM BAIL** -- A "U"-shaped strap wrapped around the lower portion of the boom to which fittings can be attached.

**BOOM CRUTCH** -- A vertical support to hold up the boom when the sails are furled or when hoisting the mainsail in order to keep the boom in position.

**BOOM VANG** -- A tackle used to pull the boom down in order to control the shape of the sail and movement of the boom.

**BRIDLE** -- A line secured at each end with attachment or control taken at the middle.

### C

**CAM CLEAT** -- A fitting used to belay a line utilizing two pivoting serrated cams that allow for immediate adjustment.

**CHAINPLATE** -- Metal strap connected to the hull to which the shrouds are attached in order to distribute the strains set up in the rigging to the boat.

**CHAINPLATE COVER** -- A plate used to cap the area of the deck where the top of the chainplate protrudes.

**CHEEK BLOCK** -- A block with a base that is fastened to a surface, such as a deck. The sheave of the block is usually parallel with this base.

**CLEAT** -- A fitting to which a line can be belayed.

**CLEW** -- The lower aft corner of the sail, usually fitted with a cringle for the outhaul.

**CLEW OUTHAUL** -- Any device or fitting used to adjust and secure the clew of the mainsail. Sometimes referred to as the "boom outhaul".

**CLEVIS PIN** -- A pin used to close the opening of a shackle or clevis.

**CRINGLE** -- A metal ring or grommet around a hole in the sail for reinforcement.

**CUNNINGHAM** -- A line device or cringle located several inches above the tack of the sail and used with a downhaul to control the tension along the luff and hence the shape of the sail. Primarily used in competition craft.

## D

**DIAMOND SPREADER; STAY** -- An intermediate spreader and stay arrangement to reinforce the mast, with the configuration forming a "diamond" shape. The stays do not attach to the boat, only to the mast.

**DOWNHAUL** -- Any line designed to haul down something, for example the downhaul used to pull down on the gooseneck when on a slide, or a "Cunningham".

**DRAFT** -- The greatest depth the boat.

## E

**EASE** -- To let out the sails.

**EYE STRAP** -- A metal strap fitting shaped to form an "eye" which can be used to secure a fitting or line.

## F

**FAIRLEAD** -- Any fitting used to guide or change direction of a line, giving it a "fair lead" in its travel. Fairleads prevent chafing as well.

**FIDDLE BLOCK** -- A block with two sheaves, one above the other, one usually being smaller than the other. It resembles a "fiddle".

**FOOT** -- The lower portion of the sail.

**FORESTAY** -- The wire that supports the mast from the forward side, running from the top or near the top of the mast to the forward point of the hull. Also used to support the luff of the jib on sloop rigs.

## G

**GENOA ("jenny")** -- A large oversize jib sail that overlaps the mainsail.

**GOOSENECK** -- The fitting used to attach the boom to the mast and which permits the boom to pivot, usually by a universal joint -- type action. The gooseneck can also be used to secure the tack of the sail.

## H

**HALYARDS** -- The lines used to raise and lower the sails. External halyards are located outside the mast; internal halyards pass through the inside of a hollow mast.

**HANKS** -- Clip or snap fittings sewn into the luff of the jib for attaching the sail to the stay.

**HEAD** -- The top corner of the sail; boat's bathroom.

**HEAD DOWN** -- Change the boat's course away from the wind.

**HEAD BOARD** -- The reinforcing member sewn into the sail at the head, usually fitted with a cringle.

**HEAD SAIL** -- Any sail forward of the mast, such as the jib.

**HEAD UP** -- Change the boat's course toward the wind.

**HOUND** -- A wraparound strap-type mast fitting used to secure stays and other fittings to the mast.

## J

**JAM CLEAT** -- Any cleat into which a line can be "jammed" in order to belay it, as opposed to a cleat, which must have the line "turned" or wrapped around it.

**JIB** -- The sail located forward of the mast. Sometimes called the "headsail".

**JIB SHEET** -- The line used to control the jib.

## L

**LEECH** -- The aft portion of the sail.

**LEEWARD** -- Pronounced "loo -- erd". Downwind, or away from the direction which the wind is coming.

**LIFELINE** -- Lines attached to the stanchions to help prevent the crew from going overboard..

**LINE** -- A length of rope or wire rope performing some function in the boat.

**LUFF** -- The forward portion of the sail.

## M

**MAINSAIL** -- The "main sail" on the boat, or one located on the aft side of the mast.

**MAINSHEET** -- The line used to control the mainsail, indirectly through controlling the boom position.

**MAST** -- The vertical spar used to support the sails.

**MASTHEAD** -- The top of the mast.

**MASTHEAD RIG** -- A sloop rig where the forestay reaches to the masthead.

**MAST RAKE** -- The angle the mast makes from vertical when viewed in profile. A mast set exactly vertical has no rake.

**MAST STEP** -- The fitting or receptacle that receives the base of the mast to secure it in position.

## P

**PAD EYE** -- An eye fitting with a substantial base used to secure fittings such as blocks to the deck or cabin top.

## R

**REEVE, TO** -- To reeve is to pass a line through any aperture such as a block or eye. The past tense is ROVE.

**RIG** -- The configuration of the spars and sails of a boat.

**RIG, TO** -- To put the spars and related equipment in position so the boat is ready for sailing.

**RIGGING** -- Equipment used to support the spars and manipulate the sails.

**ROLLER REEFING** -- Equipment that allows the boom to roll thereby furling the sail onto the boom and reducing sail area, especially in heavy weather. Reefing means to decrease sail area by folding or furling the sail.

**ROACH** -- The up and outward curve in the leech of the sail.

**ROPE** -- Generally, any stranded or braided cordage.

**RUDDER** -- Device that steers the boat.

**RUDDER STOP** -- Device that prevents the rudder from floating up and out of secure it in position.

**RUNNING RIGGING** -- The lines that literally "run" or move about the boat for use in hoisting, lowering, and controlling the sails.

## S

- SHACKLE** -- A "U" -- shaped link with openable pin for connecting or attaching various components.
- SHEAVE** -- Pronounced "shiv". A grooved wheel or pulley with axle, used for example in a block, to prevent line wear and to change direction of the line.
- SHEAVE BOX** -- A fitting with a sheave used at the exit point on a spar where internal halyards pass through.
- SHEET** -- A line used to control directly or indirectly the trim of a sail.
- SHEET LOAD** -- The direction the line used for the sheets takes.
- SHROUDS** -- The stays that support the mast at the sides.
- SLOOP** -- A single masted sailboat with at least one sail forward of the mast, and one sail aft of the mast.
- SNUBBING WINCH** -- A small winch with no handle used to control a sheet.
- SPAR** -- A general term for any mast, boom, or other "pole" used to spread out the sails.
- SPINNAKER ("chute")** -- The big parachute -- shaped sail located forward of the mast used mostly on competition boats on courses before the wind.
- SPREADERS** -- Cross members jutting out sideways from the mast to "spread out" the shrouds in order to reinforce the mast.
- STANDING RIGGING** -- The fixed wires and ropes that "stand" or stay in position at all times when the mast is stepped. The standing rigging consists of all the stays.
- STANCHION** -- Spars or poles around the perimeter of the deck to which lifelines are attached.
- STAYS** -- The wires that support the mast and spars.
- STAY ADJUSTER** -- A fitting which both connects the stay to the boat and allows the length of the stay to be adjusted. It is different from a turnbuckle in that the adjustment mechanism consists of a series of holes with a clevis pin.
- STEP, TO** -- To step the mast means to put the mast in position on the boat.
- STEMHEAD** -- Literally the head of the boat at the stem, or the farthest forward point on deck. Generally considered the point where the forestay attaches to the hull.
- SWIVEL DECK BLOCK** -- A block with a base for deck mounting and which allows the block to swivel to any position and stand vertical in use.

## T

- TACK** -- The lower forward corner of the sail usually fitted with a cringle. Also means sailing a zigzag course.
- TACKLE** -- A system of blocks and rope arranged to decrease the effort required to move a load or object.
- THIMBLE** -- A teardrop-shaped grooved ring in a looped or spliced eye to prevent chafe and wear in the eye.
- TOE RAIL** -- An elevated rail which runs around the perimeter of the deck.
- TRACK** -- A formed metal or plastic rail used to carry fittings or to allow them to move.
- TRACK SLIDE** -- A fitting designed to slide along a track and often to which other fittings are attached, or which may be connected to a sail for use in hoisting.
- TRAVELER** -- A line or fitting which allows the mainsheet tackle to travel or move from one side of the boat to the other.
- TRAVELER BLOCK** -- A block with two sheaves and no shackle, one sheave above the other and at right angles to each other, for use with rope travelers.
- TRIM** -- To pull the sails in towards the wind.
- TURNBUCKLES** -- A fitting that connects the stay to the boat and allows adjustment by means of screw threaded barrels.

## **W**

**WHIPPING** -- The binding agent or method used on the end of a piece of rope to prevent fraying and unraveling.

**WINCH** -- A mechanical revolving drum appliance used to gain power in hauling or pulling in a line.

**WINDWARD** -- Toward the direction from which the wind is blowing.

**WIRE ROPE** -- Rope made from twisted strands of iron or steel.

**WORKING SAILS** -- The sails used under normal sailing conditions, usually consisting of the mainsail and the regular or working jib on a sloop rig.

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