

# **Ames Sailing Club**

## ***Sailing Fundamentals for New Sailors***

"Something about sailing a boat brings so many senses and sensations into play that it's very difficult to pinpoint what it is, specifically, that makes me like it so much: the sight of sails and sheets overhanging the water; the foam and spray flying as the bow cuts the water; the motion of the boat; the physical and mental ballet necessary to handle the boat correctly. A sailboat might just be the most beautiful, sensuous, and intelligent blend of man/machine/elements that exists in the world today. The relationship between the three is the most harmonious I have experienced so far.

Besides, you can have a beer while you do it."

### **Introduction**

The stated purpose of the Ames Sailing Club is to provide a forum for those interested in the art and sport of Sailing. We are also here to facilitate access to Bay Area sailing schools and charter companies and as a benefit to enhance the welfare and quality of life of Moffett resident staff and families.

When you participate in an ASC sailing event, one of the most important goals is for you to have fun. That being said, there are also things you need to know about the boats you'll be sailing on and sailing in general. The following is intended just to give you an overview on what to expect and some basic knowledge so you can get the most out of your time on the water.

Before stepping into a sailboat and going for a sail there are some important things to know. A typical day of sailing involves: preparing and rigging the boat at the dock, leaving the dock, sailing on different points of sail, trimming the sails, tacking, jibing and finally landing back at the dock (hopefully with the same number of persons aboard you left with).

### **Safety First**

In addition to having fun, safety is of primary importance. All ASC skippers have years of practical experience, many are certified and some are USCG licensed professionals. It is extremely important that you follow their instructions. If, at any time, the skipper feels that there are problems, she/he may terminate the sail. Also, if you, as part of the crew, for any reason, feel uncomfortable, you may request to be taken back to the dock.

During races, all skippers and crew are required to wear a PFD (personal floatation device). During other events, your skipper may ask you to wear a PFD. If you choose not to, you may be asked to return to the dock.

## **What to Wear and Bring**

Most importantly bring lots of warm clothes (layers are important) and a waterproof jacket. A spare set of dry clothes to change into after the sail isn't a bad idea either as sometimes waves can splash over the bow, particularly on the smaller boats. Bring a waterproof jacket. Some sailors bring waterproof pants also. Wear deck shoes, white-soled tennis shoes, or other non-marking shoes. Lifejackets are always provided. Other things you might want to bring are sunscreen, sunglasses, hat, and water. Food and snacks are permitted on board, as long as you leave no trace of food when you leave the boat.

## **Your First Sail**

Stepping onto a small sailboat can be tricky. Sudden tipping can cause injuries and broken gear. Because of this it is important to do several things first. When getting into a small boat like a Merit 25, make sure that both hands are free. Hand your gear to someone already on the boat or set it down inside the lifelines. When stepping onto the boat, first announce your intentions, step on at the widest part, hold onto the shrouds and then step over the lifelines. The skipper should get in first, and then as the crew steps in, the skipper will balance the boat appropriately. Never jump into the boat.

The position of the helmsman (the individual who steers the boat) and the crew (the individuals who do not steer) are important to sail safely and efficiently. The skipper usually sits on the windward side (the side of the boat the wind hits first) and it is the crew's responsibility to move to the high side as well when they're done with their assignments. This helps to balance the boat as much as possible in the water.

If you need to go forward while the boat is underway, move up the windward side of the boat, keep low (crawl if you have to) and always keep one hand on something solid (not the lifelines). Finish what you went forward to do quickly (and safely) and then return to the cockpit as soon as possible.

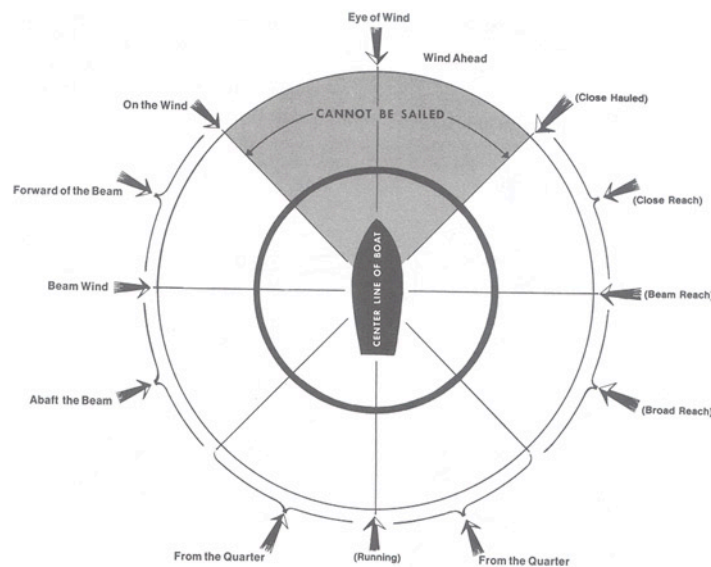
Once under sail, the boat may heel (or lean to one side) because of the force of the wind against the mainsail. It is important to remember that it is extremely rare for keel boats to capsize or 'tip-over'. Larger boats, like those that the ASC sail, have a heavy keel, which keeps them upright. Also keeping a boat from capsizing, can generally be accomplished by reducing the pressure against the sail by either turning the boat into the wind, or letting the sail out until it is aligned with the wind.

## **Rules of the Road**

- A sailboat will always give way to
  - A disabled vessel or a vessel not under command
  - Vessels restricted in their ability to maneuver
  - A vessel restricted by draft
  - A vessel engaged in fishing

- When one sailboat meets another
  - A boat on a port tack shall give way to one on a starboard tack.
  - If on the same tack, the windward boat shall give way to a leeward boat when on the same tack.
  - A boat that is overtaking shall give way to a boat ahead, regardless to the type of vessels or tack.
  - A boat coming about (tacking) or jibing shall give way to a boat on a steady heading. Thus, if your vessel is the stand-on vessel you are required not to turn or alter course. If the stand-on vessel does alter course it must be to avoid a collision. If your vessel is the give-way vessel you must turn away from the stand-on vessel to avoid a collision.

**Changing Directions:** Turning the sailboat away from the wind is to fall off or bear away. Turning into the wind is to head up or harden up. As the sailboat falls off the sails should be eased or let out. As the sailboat heads up the sails need to be trimmed or moved toward midline. When one changes the point-of-sail it is advantageous to change the position of the mainsail before or during the maneuver, not after. For example, if one is going to change from a close reach to a broad reach, you should change the sail position before completing the turn or the wind will hit the sail at 90 degrees and may excessively heel the boat.



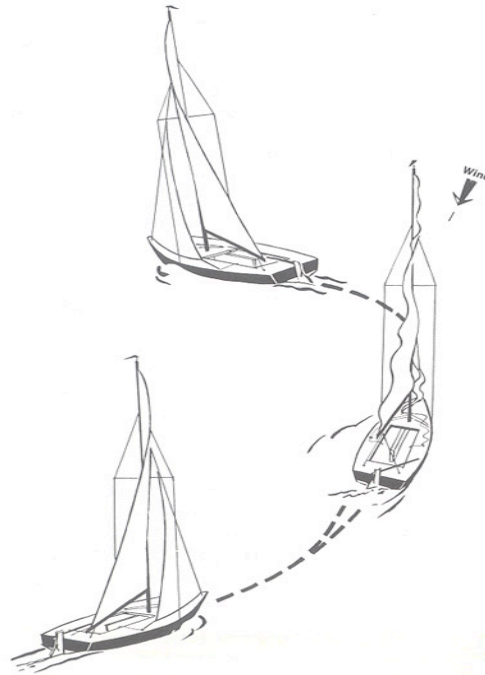
**Changing Directions through the Wind:** There are two basic maneuvers to change directions through the wind -- **Tacking (Coming About)** and **Jibing**. We use one of these two maneuvers anytime the change in our course causes the wind to change from one side of the boat to the other. Both maneuvers will accomplish this objective. Tacking does so by taking the bow through the wind. Jibing does so by taking the stern through the wind. Which one you choose depends upon a number of factors. First is the direction you want to turn. Is it easier to turn to starboard (boat's right) or to port (boat's left) to steer to your new objective? If the closer turn takes the bow through the wind, it is

generally better to tack. If it is closer to turn downwind and take the stern through the wind, then generally jibing is the desired maneuver. Other factors to consider are wind strength and proximity to obstructions such as shoals, docks or other boats. In stronger winds, jibing can be a more challenging maneuver often intimidating less experienced sailors as well as subjecting the boat and its equipment to serious stress due to the rapid shift of the wind force from one side to another. If you have serious doubts in you or your crew to perform a jib or about the integrity of your boat, consider doing what we call a "Chicken Jibe" which is heading up and tacking around the long way.

**Tacking:** In this maneuver, the bow of the boat goes through the wind as one changes from a close-hauled point-of-sail on one tack (direction) to a close hauled point-of-sail on the other direction. Only the jib needs to be adjusted, the working sheet of the jib is changed and the new working sheet is placed on a winch. The mainsail is left alone and will by itself often assume the correct position.

### Commands

- **Skipper** - Ready about!
- **Crew** - Ready!
- **Skipper** - Helm's Alee!
- **Skipper** - Trim to course!



**Jibing:** In this maneuver, the stern of the boat goes through the wind as one changes from a broad reach on one tack (direction) to a broad reach in the other tack (direction). Both the jib and mainsail will need adjusting. The mainsail is first centered, the turn made and the mainsail is then let out. **Be sure the mainsheet is free to run!** The jib's working sheet is changed and the new working sheet is placed on a winch.

### Commands

- **Skipper** - Prepare to jibe!
- **Crew** - Ready!
- **Skipper** - Center the mainsail!
- **Crew** - Centered!
- **Skipper** - Jibe Ho!
- **Skipper** - Trim to course!



One may wish to divide a jibe into a series of steps. First, enter a deep broad reach. This is the point-of-sail just before the jib starts to flap as the mainsail masks the jib's wind. Turn the boat directly downwind in a run and sail Wing-on-Wing. The jib and jib's working sheet can now be switched to the outer side of the boat and adjusted for the new point of sail. Next, center the mainsail and jibe the boat. Unlike coming-about, in a jibe the boat only needs to be turned a few degrees to allow the mainsail to switch to the other side. Once the mainsail swings to the other side, quickly ease it's sheet and trim the main for the new tack.

## Appendix A: Nomenclature

### Basic Sailboat Terms

**Rudder:** A spade-like object at the back of the boat that steers the boat by deflection of the water.

**Tiller:** The lever that controls the rudder.

**Winches:** A mechanical device used to increase pulling power on a line. (purchase)

**Fairleads:** Eyes or blocks that guide lines in a desired direction. Usually they are used for jibsheets.

**Keel:** The weighted fin at the bottom of the boat that keeps the boat from slipping sideways through the water.

**Bow:** Front end of the boat.

**Stanchions:** Vertical posts that hold lifelines in place.

**Pulpit:** Safety rail at the bow of the boat.

**Stern:** Back end of the boat.

**Port:** The left side of the boat when facing forward.

**Starboard:** The right side of the boat when facing forward.

### Basic Standing Rigging

**Mast:** The large vertical spar that supports the sail and boom.

**Boom:** The horizontal spar used to hold and extend the foot of the main sail.

**Forestay:** The wire (cable) that supports the mast from the bow and prevents the top of the mast from moving aft.

**Backstay:** The wire that supports the mast from the stern and prevents the top of it from moving forward.

**Shrouds:** The wires that support the mast from the sides and prevent it from moving athwartships. (sideways)

**Turnbuckle:** Device for adjusting tension on shrouds and stays.

**Chainplate:** Fitting that connects shrouds to hull.

**Tang:** Fitting that connects shrouds to mast.

### Basic Running Rigging

**Halyards:** Lines or wire rope used to hoist the sails.

**Sheets:** Lines used to control the sails. Trimming is tightening the sheet to move the sail towards the centerline of the boat and easing is letting it out.

**Outhaul:** Line used to tighten or tension the foot (bottom edge) of the sail.

**Downhaul:** Line used to tighten or tension the luff (forward edge) of the sail.

**Boom Vang:** Line used to pull the boom down. It prevents the boom from lifting which causes the top part of the sail to twist.

**Topping Lift:** Holds the end of the boom up and prevents it from falling into the cockpit when the main sail is lowered.

### Basic Sail Terms

**Head:** Top corner. (Where halyard connects to sail)

**Tack:** Bottom forward corner.

**Clew:** Bottom back corner.

**Luff:** Forward edge.

**Foot:** Bottom edge.

**Leech:** Backedge.

**Cringle:** Metal reinforcement ring.

### **TERMS THAT USUALLY APPLY TO MAIN SAILS**

**Battens:** Wood or plastic strips that act as stiffeners for the sail. They help keep the leech from fluttering.

**Batten Pockets:** Pockets sewn into the trailing edge of the sail to hold the battens.

**Roach:** The unmeasured Sail area along the back edge of the Sail.

**Cunningham:** The cringle (grommet) on the luff of the sail used to achieve luff tension for draft control. (sail shaping)

**Reef Points:** The row of points where the reef ties (gaskets) are attached to the sail.

### **POINTS OF SAIL**

**Close Hauled:** Sailing as close to the wind as possible. (pointing)

**Close Reach:** Sailing between close hauled and beam reach.

**Beam Reach:** Sailing so that the wind is on the beam. (90°)

**Broad Reach:** Sailing so that the wind is behind the beam.

**Running:** Sailing so that the wind is directly astern. The jib and main sails will be on opposite sides. (wing and wing)

**By the Lee:** Sailing so that the wind is on the same side as where the main is carried. When running, this could happen if there is a wind shift to the side of the boat where the main is. Sailing by the lee is discouraged because it could result in an accidental Gybe.

### **UNDERWAY**

**Tacking:** Turning the bow of the boat through the eye of the wind.

**Gybing:** Turning the stern of the boat through the eye of the wind.

**Luffing:** The fluttering of a Sail when a boat is pointed too close to the wind or the sail is eased out too far.

**In Irons:** The condition when the boat is pointed directly into the wind without steerageway.

**Windward:** The direction from which the wind is coming.

**Starboard Tack:** When the starboard side of the boat is windward.

**Port Tack:** When the port side of the boat is windward.

**Leeward:** The direction to which the wind is going.

**Head Up:** Turning the bow of the boat towards the eye of the wind.

**Bearing Away:** Turning the bow of the boat away from the eye of the wind, also referred to as bearing off or falling off

**Helms-A-Lee:** Notification that the tiller has been put to leeward to cause the boat to come about. (tacking)

## **ADDITIONAL SAILING TERMS**

**Trim:** To pull in... as in trim a sheet. (line)

**Ease:** To let out... as in ease a sheet. (line)

**Overtrim:** A condition where the sail is trimmed in too tightly for the wind direction.

**Undertrim:** A condition where the sail is trimmed too loosely for the wind direction. The sail will luff if undertrimmed more than a slight amount.

**Beat:** Sailing to windward by means of a Series of tacks.

**Reefing:** Reducing the area of a sail due to strong wind.

**True Wind:** The wind speed and direction as seen by a stationary observer.

**Apparent Wind:** The wind speed and direction as seen by an observer who is moving across the water.

**Weather Helm:** The tendency of a sailboat to head into the wind if the helm is released. (letting go of the tiller)

**Lee Helm:** The tendency of a sailboat to head away from the wind if the helm is released.

**Header:** Change in wind direction towards the bow of the boat.

**Lift:** Change in wind direction towards the stern of the boat. A header for a boat on port tack is a lift for a boat on starboard tack.

**Beam:** The widest section of a boat, generally across the middle.

**Abeam:** The direction to either side of the boat. (90° from the bow)