

MAGNIFICENT SQUADRON



SAILING MANUAL

## TABLE OF CONTENTS

Terminology .....	3
HEAD UP.....	3
GO DOWN or BEAR OFF .....	3
TRIM THE SAILS (MAIN OR JIB).....	3
EASE THE SAILS (MAIN OR JIB).....	3
SAILS.....	5
Preparing to get underway.....	6
UNDERWAY.....	6
POINTS OF SAILING.....	7
TURNING MANUVERS .....	8
CONTROLLING ANGLE OF HEEL.....	8

Please read this manual before coming to camp and bring it with you.

Before we begin sailing you **MUST** be familiar with the following commands as they are the ones which will be used on the water.

## **Terminology**

**HEAD UP:** The helmsman moves the tiller away from him to push the bow towards the wind.

**GO DOWN or BEAR OFF:** The helmsman pulls the tiller towards himself to force the bow downwind.

**TRIM THE SAILS (MAIN OR JIB):** The sail trimmer hauls in the appropriate sheet moving the sail towards the center of the boat.

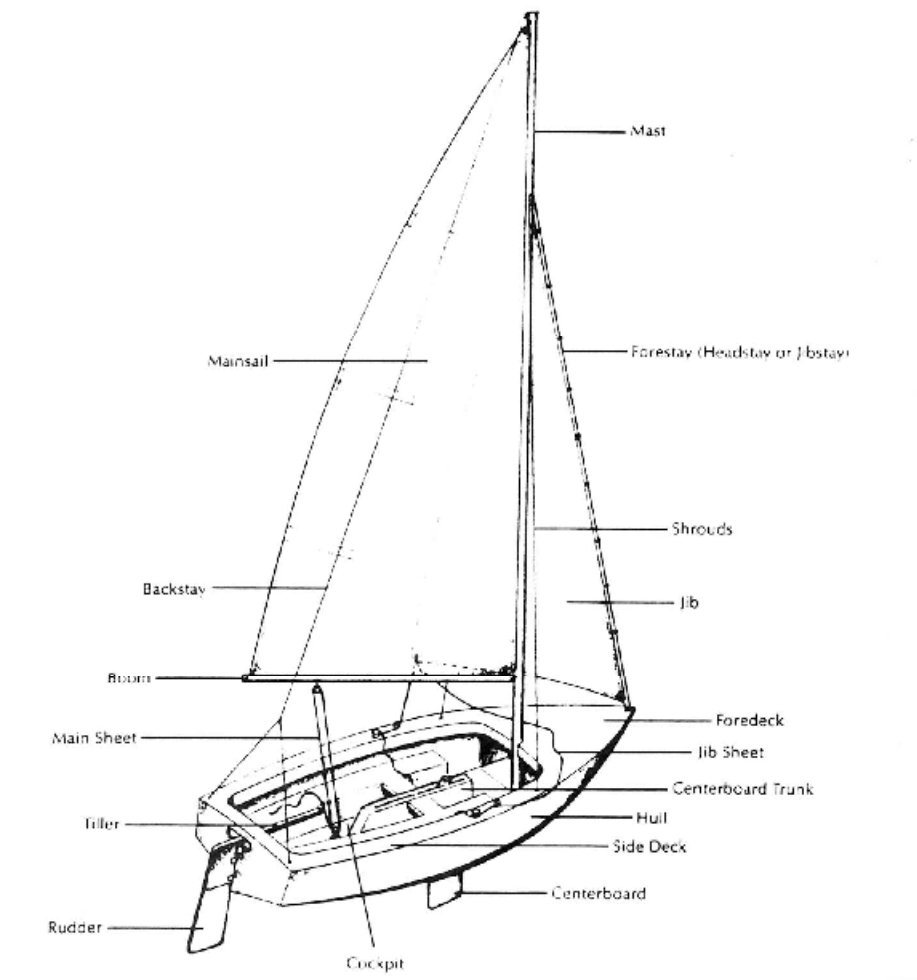
**EASE THE SAILS (MAIN OR JIB):** The sail trimmer lets the appropriate sheet run out slowly moving the sail towards the gunwale of the boat.

The sailboats most people first learn on have an open cockpit, a single mast, two sails, a centerboard, and a rudder controlled by a tiller.

The BOW of the boat is the front end and the STERN is the back end. When you are in the boat, the STARBOARD side is on your right and the PORT is on your left.

The aluminum MAST holds up the sails and is supported by STANDING RIGGING consisting of the SHROUDS, which stop the mast from falling over sideways, and the FORESTAY and BACKSTAY which hold it in position fore and aft. The RUNNING RIGGING is all the lines used to raise and lower the sails and control their angle to the wind. The lines that raise and lower the sails are called HALYARDS, either main or jib; and the lines that control the angle of the sail to the wind are called SHEETS, either main or jib.

The Bottom edge of the mainsail is held by the BOOM and is controlled by the MAINSHEET. The CENTERBOARD under the hull resists the boat from sliding off sideways, making LEEWAY.

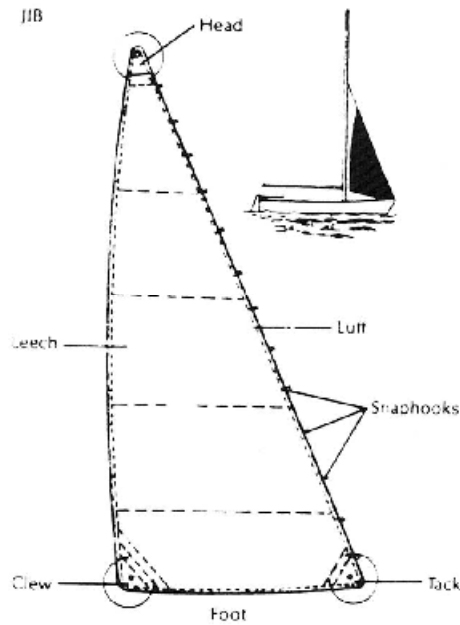
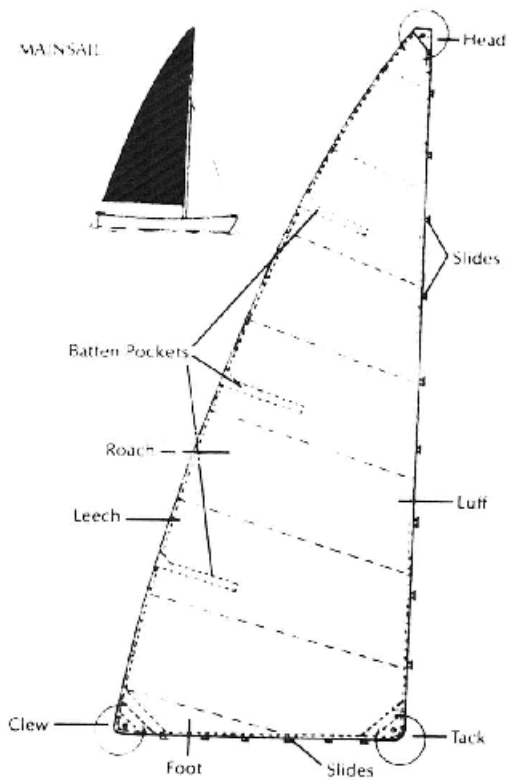


The direction of the boat is controlled by the **RUDDER** which is attached to the **TILLER**. The tiller is always moved in a direction **OPPOSITE** to where you want the bow to go. If the boat is to go to port, the tiller is moved to starboard; if she is to go to starboard, the tiller is moved to port.

## SAILS

The basic sails set on a boat are the **MAINSAIL** set behind the mast and the **JIB** set on the forestay ahead of the mast. Sails are what convert the wind's energy into speed and moved the boat forward. The names of the parts of the sail must be memorized.

- The **FOOT** is the bottom edge of the sail.
- The **LUFF** is the leading or forward edge.
- The **LEECH** is the trailing or back edge.
- The **HEAD** is the top corner of the sail.
- The **TACK** is the forward bottom corner.
- The **CLEW** is the aft bottom corner.



## **Preparing to get underway**

Before raising the sails a few preparations should be made. Remove any covers over the cockpit. Bail out any water in the bottom of the boat. The rudder and tiller, if they are removable, should be put in place. Lower the centerboard carefully. Uncleat the mainsheet and make sure it can run freely. Remove the main halyard from the end of the boom and attach the SHACKLE of the head of the mainsail. To BEND on the sail, take the foot of the sail and remove any kinks or twists in it by running your hand along its length.

Attach the tack to the boom at the GOOSENECK. Attach the clew to the boom and secure with the OUTHHAUL. Tighten the outhaul so that the foot of the sail has no scallops; it should be just tight enough to keep a straight line. Next straighten the luff the same as you did the foot and slide the head into the mast track. Haul up the halyard just enough to remove any scallops. Cleat the halyard.

Move on to the jib. Attach the tack so the STEMHEAD, HANK ON the shackles on the luff to the forestay. Attach the jib sheets to the clew using bowlines. Attach the jib halyard to the head of the jib and raise it tight enough that there are no scallops. Cleat the halyard.

## **UNDERWAY**

You are now ready to sail. Steer the boat into position so that the wind is on the BEAM. The sails will be LUFFING (shaking in the wind). Slowly haul in on the mainsheet until the shaking stops. You will see several things begin to happen: The sail will fill with wind and take on an airfoil shape; the boat will begin to heel to LEEWARD and pick up speed. Now TRIM the jib until all luffing disappears. The boat may now be steered in the direction you wish to go. Remember to make any changes slowly; the sails have to be trimmed every change of course and the helmsman must wait for the trimmers to catch up.

## POINTS OF SAILING

If the wind comes over the right side of the boat first, she is said to be on the starboard tack; if over the left side first she is on the port tack. Sailboats are ALWAYS on one tack or the other whilst sailing.

With the breeze coming over the STERN the boat is simply pushed downwind by the pressure of the wind and is said to be **RUNNING WITH THE WIND, SAILING FREE** or **OFF THE WIND**. The tack is determined by which side of the boat the mainsail is on: mainsail out to starboard the boat is on the port tack.

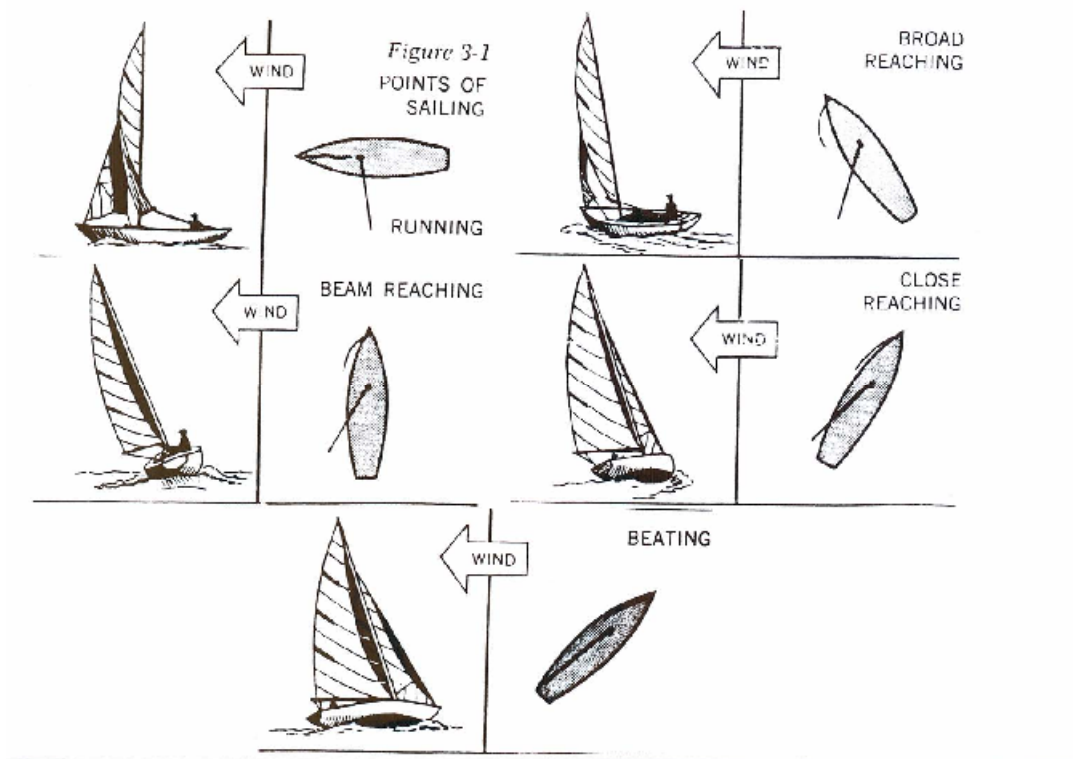
With the wind coming over the QUARTER, the boat is sailing on a **BROAD REACH**; the tack is determined by which side the wind crosses first.

With wind coming over the beam, we are **BEAM REACHING**.

If the breeze moves toward the bow, we are **CLOSE REACHING**.

Going as close as possible to the angle of the wind puts us on a **BEAT** or **BEATING INTO THE WIND**.

The reaches are generally the fastest points of sailing.



## **TURNING MANEUVERS**

There are two ways a boat can turn from one tack to the other.

First, she may LUFF UP into the wind and continue turning through the eye of the wind until her sails fill on the other tack. This is called TACKING or COMING ABOUT. To make a tack, the helmsman pushes the tiller slowly to leeward, bringing the bow up into the wind, at the same time the jib trimmer pulls in the leeward jib sheet to follow the boat's course. As the bow carries through the eye of the wind the jib trimmer releases the sheet and hauls in on the other side. The mainsail will move to the other side of the boat on its own so it does not need to be tended.

Secondly, she may BEAR OFF or head away from the wind until the wind is dead astern; and then continue turning until the wind suddenly slams her sails on the other side. This is called GYBING.

In order to gybe, the helmsman pulls the tiller slowly to windward aiming the bow downwind. The jib trimmer eases the leeward sheet as the wind moves astern. The mainsail trimmer hauls the mainsheet tight so that the main is on the centerline. When the mainsail is positioned on the centerline, the helmsman continues his turn bringing the wind on to the new side of the boat. The mainsail trimmer quickly eases the mainsheet to trim to the new wind angle. The jib trimmer lets go the leeward sheet and hauls in on the other side as the jib floats across the bow. In a gybe the mainsail MUST be under total control so that the boom does not swing violently across the cockpit. The boat may also heel excessively during a gybe.

Simply put, a tack is an upwind turn with the bow swinging across the wind causing the sails to flap. A gybe is a downwind turn with the stern crossing the wind, the sails violently filling on the new side, driving the boom across the cockpit of the boat.

## **CONTROLLING ANGLE OF HEEL**

If you find the angle of the heel uncomfortable at any time, by moving your crew weight OUTBOARD the angle will decrease and the boat will stay on her feet. If this does not bring her back to an even keel, ease the mainsheet until about half the mainsail is luffing. This will return you to the upright and leave you with enough power to continue sailing efficiently. The boats should not be heeled more than 20 degrees.