

## BANDIT 15

### GENERAL COMMENTS

Only a very few classes have managed to tightly control their class organizational by-laws so as to be able to continue to offer to the owners the concept that was originally well intended---a strict one-design that does not change in any way. Most classes get caught up in gadgetry and sophisticated development resulting in boats that are initially expensive, difficult to manage and continually expensive to keep up competitively. Examples of those that are so loosely controlled and hence very much more expensive than contemplated by the founders are the International 470, Soling and Tornado.

Charger and their designers, J. R. Macalpine-Downie and Dick Gibbs, fully realize while many people do not aspire to international fame as helmsman, they do not wish to be involved in a class that rules them out simply because they do not choose to spend the money to equip and re-equip, or the time to learn, or acquire the athletic effort to manage ultra sophisticated boats.

Charger is not aware of any two man, modern sloop that is or will be commercially promoted by a major company. A company capable of expert and precise building boats in virtually unlimited numbers with this concept irrevocably established with boat number one and continuing forever, in the best interest of the owners.

Charger is a vertically integrated company, manufacturing everything (to include sails) with the exception of the extruded aluminum spars, wire rigging and hardware. With this total control we can pledge that every boat will be exactly alike in every detail. Boat number 5000 will not have a competitive edge on boat number 1.

Of course, a boat must be equipped, if intended for competition, with suitable hardware and rigging such as boom vang, spinnaker launcher, adjustable outhaul etc. to satisfy the most discriminating helmsman. By so equipping each boat the cost to the owner is much lower because of purchasing and production economies. The hardware is simple, yet functional and must remain the same on each and every boat, forever, without additions or changes, to be eligible for class racing.

### CHARACTERISTICS

The Bandit 15 as a design maximizes performance in an easily managed, moderate sail area sloop. Two average size people can sail her in really heavy conditions without being overpowered, yet Bandit 15 can carry four adults without being overloaded. While the straight up and down bow is not traditional in the "yacht sense", it is a fact the longer the waterline the faster the boat. Stretching the waterline length to the full length of the boat makes the hull more narrow at the bow. A narrow bow does not make as large bow wave. The size of a wave is directly proportional to the force or drive needed to make the wave. It does follow that a big bow wave means more resistance that slows a boat down.

The sail area is moderate, set on a short boom and tall mast. This profile, referred to as high aspect ratio, gives maximum performance from any sail area. Since a sail is an airfoil on end, we can make a comparison of high speed airplanes which have narrow long wings while slow speed aircraft have short, broad, thick wings. You then have the best of two worlds---a moderate area so that two people can sail in high winds comfortably and yet have the maximum performance from the available sail area. A spinnaker adds to the downwind performance and completes the sail complement of a full racing boat should you choose to compete in serious sailing circles.

The principal of high aspect ratio is considered in the centerboard and rudder blades. These long narrow blades provide maximum lift giving the extra bit of performance when sailing up wind. Bandit 15 is "finger light" on the helm even at exaggerated angles of heel.

Bandit 15 is available in two deck styles, a sit on boat with wide side deck or a sit in boat having side seats over six feet long. Since it takes the same weight of glass to make either deck the boats can race together, with neither style having a competitive advantage. Both deck styles completely seal off the cockpit from the interior of the hull. No waves can fill other than the cockpit where water is evacuated through hull bailers in the cockpit floor. Both models have molded in spinnaker launchers (and does this make spinnaker handling easy). Both models have watertight lockers forward and aft. The aft locker can be locked for security storage.

The Bandit 15 has more freeboard (depth) than one might describe the racing machine to have. However, coupling the high freeboard, plumb stern and the overhang on the deck we find the boat to be quite dry in big waves. Only a moderate rocker in the profile of the keel line with a flat run aft gives Bandit 15 the capability of planning in moderate winds. Her wide beam provides the power for really fast planning in high winds.

#### CONSTRUCTION

While it may have been possible for Bandit 15 to be lighter, in her present form she is a reliable, robust boat that can be driven hard, trailed about, used hard by kids and new sailors and only show battle scars as opposed to being a casualty. Extra light weight is only vitally important if the initial design intended the boat to be extremely light. If the production boat weight equals its original designed weight, building the boat lighter can only very marginally improve its performance. The floor area where one walks, stands and jumps is doubled in thickness. The cockpit floor is bonded to the hull to further reinforce this critical area. The deck is stiff and can be walked on anywhere.

The Bandit 15 is a "two piece boat" with the only seams at the deck edge and the top of the centerboard trunk slot, and around the bonded edge of the stowage compartments. The centerboard trunk is integrally molded with the hull and becomes, actually, a part of the hull and not a separate piece taped or bonded to the hull.

The spinnaker launcher is molded in the deck (not added). The extension of the launcher comes through the forward cockpit bulkhead. Any water that comes in the mouth of the launcher can only drain into the cockpit where it is evacuated through the bailers.

Both the centerboard and the rudder, to include the rudder head are tough fiberglass. The centerboard pin is unique, in that it does not go through the centerboard trunk. Removable of the centerboard pin is simple, fast and foolproof, yet reliable when inserted in the trunk.

#### SAFETY

You must assume that all small unballasted boats (without a weighted keel) can capsize, even though the Bandit 15 is a stiff boat in the first instance. The Bandit 15 can be easily righted after capsize provided you are aware of the easy simple way. In fact, you should practice capsizing so you will be aware of the procedure and have the confidence to sail in heavy winds. You might even find capsizing fun when you find that, in easy conditions you can do so without even getting into the water.

The Bandit 15, if well handled will survive enormous winds and seas as long as the skipper does those things that keep a boat upright---getting the crew to weather and hiking---letting the sail runout in heavy wind puffs---keeping the boat moving (the most likely moment for a capsize, occurs when the boat has stopped) rolling up the jib and raising the board to correct weather helm---or even sailing on just the jib alone in really high winds.

If capsized both models (sit on or sit in) can be righted and sailed away evacuating the aboard water through the bailers. If the capsize has occurred in heavy seas you may find it faster to bail most of the water out with a bailing bucket and letting the bailers take out that which is left. In either case the Bandit 15 can be righted and sailed away.

After capsize the sit on version comes up virtually dry because she floats on her side with the side decks well out of the water. After righting the sit in version will have a bit more water aboard (about 2" on the cockpit floor) because the side decks are more narrow. The water above the immersed side decks will be in the cockpit after righting. The sit in version will evacuate the water aboard, provided the hull speed is enough to cause the bailers to work. Otherwise you will need to get the water out with a sponge or bailing bucket,

The Bandit 15 can be righted after either a 90 or 180 degree capsize. Before attempting to right the boat, wait until the boat drifts head to wind as will all boats eventually. You can assist bringing the boat head to wind by hanging on at the bow or swimming the bow head to wind. Be certain people do not stay aboard or try to hang on the mast or rigging else the boat can be turned completely over---possibly on top of those that stay aboard or try to hang on the mast or rigging. All centerboard sailboats can turn turtle (180 degree capsize) because the wind blows the hull against the immersed masthead. The masthead blows downwind, spades in and over she goes. The Bandit 15 does have the top of the mast (down to the spinnaker halyard) foam filled. However, a foam filled mast will not prevent any boat from turning turtle. Only a slight bit of weight on the centerboard will prevent a boat going turtle. You should, after capsize, quickly get a person hanging on the board to prevent turtling. In preparation for righting loosen all sheet lines so that the sails do not fill and re-capsize the boat or cause the boat to sail away.

If the boat is lying on her side the weight of one average person is more than enough to right the boat. (In fact, a 60lb. child has righted the Bandit 15 from a 90 degree capsize by placing his weight on the end of a fully extended centerboard. Be careful the boat does not right on top of you and hang on to prevent the boat drifting away. If you are agile you can get back aboard as the boat rights, just going up and over the side. If you and/or your crew are in the water after righting, get back aboard over the stern or each person climbing in over opposite sides of the boat at the same time.

If the boat is turtled, (180 degree capsize) extend the board fully. (There is plenty of entrapped air in the cockpit to permit you to go under and have plenty of time to extend the board.) Then get on the upturned boat, grab the board and lean out bringing the boat to the 90 degree capsize position. If you are unable to apply enough weight, or for some reason you cannot extend the board, tie a line to a chain plate, run the line over the upturned bottom and lean out against the line, standing on the gunwale of the boat. A 180 lb. man is more than enough to right the boat in this manner. The sails and mast will come up slowly through the water, so be patient.

any times boats will capsize in water less deep than the length of the mast and stick the masthead in the bottom of the lake. Should this occur you may need assistance to right the boat. The following is the only way to assure the boat being righted without

possible damage to the mast or rigging. You should get up on the bottom of the boat or preferably stand on the gunwale, at the centerboard, pass a line to a boat, holding the opposite end or tie the opposite end to the upturned chain plate. Have the assisting boat pull slowly away at right angles to the bottom of the capsized boat (opposite the direction of the mast) pulling the mast out of the bottom of the lake. From then on proceed as in a normal 90 degree capsize.

Capsizing is not to be feared. If you were not already wearing a lifejacket put one on. Take the whole incident calmly. Do not hurry. Boats do not right, particularly from 180 degree capsize, quickly so there is no reason to hurry.

The foamed in place, positive foam floatation, is sufficient to float the boat with the maximum recommended capacity of the boat hanging on the boat, even if the boat were holed with water completely flooding the interior of the hull. Unless the hull is holed or a drain left open this condition should not occur.

### TIPS OF SAILING, TUNING AND UNDERSTANDING YOUR BANDIT 15

#### THE SAIL

The best indicator of the proper attitude of the sail in relation to the wind is a ribbon punched through the sail with a darning needle, about three feet aft of the mast to a convenient height to view---half the ribbon on each side of the sail. The power in a sail, as developed by the wind, consists of positive pressure on the windward side and a low of less than atmospheric pressure on the lee side---both caused by flow of wind on the sail. The ribbon as blown by the flow of wind is an indication of the nature of the flow on the sail. Ideally, both the windward and leeward side should be streaming straight aft. If the ribbon on the leeward side is blowing upward or even forward, the sail is at a stall and wind flow is turbulent---the sail must either be paid off with the mainsheet or the boat pointed higher. The weather side ribbon is not as positive in its indication as the leeward side. However, if the weather side is blowing mostly up or even forward the sail needs to be pulled in or the boat sailed at more of an angle to the wind (lay off the wind more). Since the wind is constantly changing direction, there is a constant requirement to alter the direction of the boat to gain smooth flow of the wind as indicated by the ribbon through the sail.

#### SAILING TO WEATHER

Bandit 15 is sailed to weather the same as any other light, high-performance boat---hunting to weather in the lifts, laying off to drive through seas, and as high on the wind as possible while still maintaining boat speed.

For light wind conditions, the boom should be trimmed approximately to the corner of the transom. The jib in light going should not be in tight, as with the main, and the boat should be allowed to drive a few degrees off of going hard to weather. If drifting conditions are prevalent, 10-15 degrees of heel will help the sails maintain a somewhat "full" shape.

In medium to heavy conditions, the boom should be trimmed to the area between the transom corner and centerline. The jib should be continually trimmed tighter (or more flat) as the wind increases. In survival conditions, the jib should be in as tightly as possible with the main let out and boom vang tight to keep the boat under control. In heavy conditions, downhaul pressure on the main should be increased to keep the draft forward in the sail and in turn, the boat in balance. Heeling due to the heavy air causes unequal forces on the boat's underwater surfaces, contributing to the boat rounding up to weather (weather helm). Heeling also displaces the CE to leeward of the CLR which will also produce weather helm. The combination of these two forces tend to produce more weather helm

than desirable.

remedy this, merely raise the centerboard until the excessive weather helm has disappeared. Hiking to keep the boat level will equalize forces on the boat's underwater surfaces and once more the boat will have symmetrical underwater areas. The combination of hiking and moving the centerboard back will once again place forces acting upon the boat in balance.

## REACHING

On reaches, the sail(s) should be trimmed according to the wind direction as discussed in the section on the sail. One will notice however, that as planning conditions develop and then hold, the sail(s) must be hauled in closer and closer. This is due to a shift in the apparent wind. (i.e. If one slowly drives a car down a road perpendicular to the wind, the wind may be observed to be blowing directly through one window and out the other on the opposite side of the car. As one speeds the car up to a much faster rate, the wind is now observed to be blowing straight at the car, with no wind being felt coming through the car. The resolution of the two forces of wind; the wind perpendicular to the car and the wind from straight ahead due to the car's motion, produces a wind direction of a few degrees from coming straight ahead.) The same thing happens to a lesser extent when the Bandit 15 begins to plane. The increase in boat speed causes the apparent wind to shift further ahead. In order to keep the sail(s) properly trimmed, it is then necessary to haul them in until once more in trim (the ribbons flowing back smoothly). Conversely, if the wind lightens or one drops off the plane and the boat speed decreases, expect the apparent wind to move aft; thus requiring the easing of the sails to keep them properly trimmed. When racing on the reaching leg, it is desirable in puffs to fall below the layline to the buoy. This gives one the option, when the wind lightens and moves t, to head-up and thereby maintain boat speed.

When running downwind, vortices of air and wave action flowing off the sail produces a rolling, side-to-side motion. This may be alleviated by crew placement, as earlier discussed, or by holding the jib out on the side opposite the main. By doing this, the rolling force produced by the jib somewhat cancels the force produced by the main. Going "wing and wing" as it is called, reduces rolling and hence provides better boat speed since the boat is now sailing on her designed waterlines.

## MANEUVERS

In all light, high -performance boats, weight placement is critical in the achievement of maximum performance. This is not an exception with the Bandit 15. When tacking, the tiller should be eased over to bring her about, not rammed over which will stall the rudder and slow the boat down. When the boat is head-to-wind, one's weight should be centered in the middle of the boat. As the boat continues its tack, weight should be moved to the new weather side. Failure to move one's weight smoothly to the new weather side may result in an unexpected capsize. If one doesn't make a smooth transition from one side of the boat to the other during a tack, and instead, just decides to jump over at the last moment, a capsize to weather may result. Tacks should be UNRUSHED, SMOOTH AND COORDINATED.

Jibes follow the same concept. In all winds up to heavy, the boom may be guided across the boat by merely grabbing the mainsheet tackle in one hand, allowing the boom to smoothly cross over the boat. In heavy winds, it may be necessary to pull in the mainsheet until the wind wants to fling the sail to the other side. As soon as the wind pressure is felt on the mainsheet, let the sheet run out through your hand. This procedure allows for the boom to come to a controlled stop and cases the total force on the sail through the controlled drag of the mainsheet. If one chose not to pull in the mainsheet and then let it out; but instead just let the sail slam over, a capsize could result with the instant

## SAFETY

When rigging the boat and raising the mast, look around and up high to make certain there are no power lines overhead or anywhere nearby that you might accidentally hit while launching the boat. Some power lines have not been adequately maintained and insulation may be non-existent. If a mast bumps into such a wire, or if a shroud wears through the insulation on a wire, electrocution may result to anyone touching the boat, trailer or car attached to the trailer.

If sailing in a climate where cold winters are prevalent; early spring and late fall sailing deserve special consideration. During these periods of the year, the water temperature is cold. Falling overboard in very cold water can result in death after three to five minutes of exposure. If you are planning to sail in these conditions, wear warm clothing (preferably a wetsuit and lifejacket).

In heavy air, lifejackets should be worn at all times because these winds place the greatest strain on boat and person, at times resulting in capsize, manoverboards, or breakdowns. If one is involved in any of these occurrences, the extra support a lifejacket provides while in the water will make the situation at hand much more manageable. If sailing in times of storm activity, and there seems to be a forthcoming electrical storm (as heard of the thunder from the lightning), head immediately to shore. A sailboat spar on an open body of water is by far the highest object. Lightning is attracted to such high objects. No grounding equipment is installed on the Bandit 15. Injury could result from a lightning strike, if caught in an electrical storm keep your hands off the spar and shroud wires or other metal parts.

## CAPACITY

Calculations for capacity, as described by the Federal Safe Boating Act, would enable the Bandit 15 to legally claim more than 900 lbs crew capacity. This capacity would require six cubic feet of foam to meet the minimum positive floatation standards. This positive foam floatation then provides sufficient reserve to float the maximum capacity provided the people are in the water clinging to the boat, assuming the boat is fully flooded.

Charger considers over 900 lbs of crew aboard a 15' sailboat to be excessive. We have therefore reduced the capacity we could legally claim to 750 lbs. Charger also considers that when a damaged hull floods it must then serve as a life raft. The Bandit 15 has 50% more foam than is legally required providing enough reserve bouyancy for a couple of 200 pounders to sit on the boat even if fully flooded.

However, be assured, were you to sail the Bandit 15 in winds and seas heavy enough to require the 750 lbs. of crew to hike to prevent capsize, you would probably break something. You are certainly safe enough to sail with this load aboard but take it easy on the boat---do not press her hard in these severe conditions. Conversely, with the normal racing crew aboard, say a couple of 200 pounders, drive her as hard as you wish---she will be fine.

## GASKETS

On the bottom of the hull, encompassing the perimeter of the centerboard slot, are the neoprene gaskets. These gaskets close together on and around the centerboard when it is up or down, making a tight seal to keep water from flowing inside the centerboard trunk and cockpit. (When water sloshes up into the centerboard trunk, water strikes the back edge of the trunk then falls forward, forming a movement of water within the trunk. This movement of water causes turbulence along the centerline of the boat, breaking down the flow of water; hence, slowing down the boat.) After a period of use, the

gaskets lose their "liveliness" and cease to seal the centerboard trunk slot completely. As a result of this occurring, water sloshes into the centerboard trunk and then into the cockpit, both slowing down the boat and accumulating if the bailers are not open.

Inspect the gaskets periodically for deterioration and replace if warped or if water comes through them and into the cockpit while sailing.

## RIGGING YOUR BANDIT 15

**GENERAL:** Your Bandit 15 has much of the sophisticated hardware details all serious racing boats should. Much of the hardware has been designed/and/or located expressly for the Bandit 15. Even though you may have extensive sailing experience we suggest you follow this step by step rigging to assure the full use of this design.

### MAKING THE BOAT READY:

#### A. JIB FURLING GEAR (Fig. #2 & 8)

Pass the jib furling line through the exit hole in the cup, up and through the hole in the spool, knotting the line on top of the spool. (The outer cup can be removed by loosening the screw on the bottom side of the cup.) Attach the furling gear to the bow tang, open side of the cup pointing up. Adjust the cup of the furling gear so that the exit hole of the cup points forward. Pin the furling gear to the bow tang with the head of the pin forward and the cotter pin end aft. To prevent the spinnaker snagging on or wedging behind the bow tang, tape across the bow tang, screws, and pin.

#### B. HIKING STRAPS (Fig. #1)

Pass the wide hiking strap through the floor ring near the aft bulkhead, through the retainer straps near the middle of the seats. Fasten the ends of the straps to the buckles at the forward end of the centerboard trunk. The hiking straps should be adjusted rather loose, to lie on the floor. You will, of course, adjust them to suit your own stature and preference.

#### C. RIGGING THE MAST

**General:** In order to reduce windage and clean up the rig the Bandit 15 mast is rigged with all internal halyards and topping lift for the spinnaker pole. The tip of the mast is foam filled with just enough opening to permit the main halyard to pass. Below the jib halyard there are five lines and/or wires passing through the mast. With this many lines in the mast, inevitably, these lines will hang up slightly, particularly when the swages and thimbles pass. Should this occur, a sharp tug will pull them through.

Be careful not to pull any lines out of the mast. Should you do so, it will be necessary to get a line back through. This can be accomplished, as we so in the factory, with a long piece of wire. An alternative method is dropping a light line through the mast with a weight like a fish sinker, in lieu of a wire. Be careful to not permit a line being reeved to pass round another internal line. All lines exiting the foot of the mast should be forward of the hinge pin and go round sheaves in the mast step. All line should be forward of the boom vang gear.

1. Attach the side stays to the tangs on the mast (Fig. #4) using a 3/16 clevis pin and ring.
2. Attach the main halyard tail (3/16 x 25' dacron line) to each end of the already installed wire halyard (Fig. #6).
3. Set the foot of the mast to the mast step so that the athwartship hinge pin is above the slot at the step (Fig. #3).
4. Attach the side stays to the chain plates using the stay adjustors (Fig. #5) with the pin provided in the adjustor. It is suggested you initially place the pin in the middle of the adjustor.



5. Tie the jib halyard tail (3/16 x 18' dacron line) to the end of the wire jib halyard that exits from the foot of the mast (Fig. #6).
6. Pass the free end of the jib halyard tail forward of the boom vang gear, behind and under the sheave nearest the starboard (right) side of the mast step (Fig. #20). Cleat the very end of the jib halyard tail to the clam cleat on the starboard forward bulkhead (Fig. #20).
7. Wrap the jib tightly around its own luff and tie at the middle of the sheet through the grommet at the clew (Fig. #10). Take a couple more wraps around the luff wire and tie so the sail is held tightly wrapped with two coils of the sheet around the sail.
8. Attach the bottom thimble of jib luff wire (tack corner) to the furling spool with the screw pin of the swivel jaw (Fig. #8).
9. Attach the thimble at the head of the jib to the swivel jaw on end of the wire jib halyard coming over the sheave at the upper third of the mast (Fig. #4&7).
10. Tie the ends of the spinnaker halyard (3/16 dacron line together (Fig. #6).

#### D. STEPPING THE MAST

General: One person can step the mast although it is easier with two people. One person, can with light pressure on the foot of the mast, hold the mast hinge pin in the hinge slot. The second person stands in the boat and lifts at the center of the mast. When the mast has been lifted up 15 - 20 degrees the mast will stay in the hinge. The other person can then keep the side stays and other lines free while the mast is raised into position. Be certain all lines within the mast are cleated or tied together so as not to pull them out of the mast.

1. Lift the mast to the upright position. Pull on the rope jib halyard tail until the jib luff wire comes tight.
2. Hold the mast upright by tension on the halyard, remove the pin from the halyard channel on the top of the centerboard trunk (Fig. #20).
3. Pull the wire loop in the end of the halyard into the channel and replace the pin making certain the pin passes through the wire loop and both sides of the channel.

Note: The jib halyard rope tail may be removed and stowed, if you choose. Considerable tension should be placed on the jib halyard to tighten the jib and the side stays. If you have induced only a slight forward bend in the mast you are as tight as you should be. After your initial sail in a fresh breeze the rig will loosen because the wires have stretched and taken a final set. You may find it necessary to take up a lower hole in the stay adjuster or the jib halyard channel to compensate for the stretch of the wire. In any case the mast should be approximately straight up and down. (Refer to "Sailing The Bandit 1" for fine tuning the rake of the mast.)

4. Untie the main halyard rope tail from the wire halyard thimble. Install 3/16 main halyard strip shackle through the thimble and shackle to the spinnaker pole mast eye. Pass the main halyard rope tail in front of the mast hinge pin, behind the boom vang gear, behind and around the 2nd sheave from the port (left) side at the base of the mast step (Fig. #13). The rope tail must also pass behind the boom vang gear after coming under the halyard sheave (Fig. #13) and going up to the main halyard stop bolt.

Note: A good place to stow the main halyard is shackled to the spinnaker pole eye on the mast and cleated tightly to the clam cleat on the port side bulkhead under the lockers.

3. Pass the boom vang wire through the shackle eye to the key hole slot on the bottom of the boom (Fig. #21 & 25).
4. Take several wraps on the boom vang spool with the vang line. Reeve the free end of the line through the cleat on the starboard side of the trunk (Fig. #25)

#### H. CENTERBOARD SYSTEM

General: The centerboard is already installed. You will note the centerboard is pulled down by a shock cord system. The centerboard is adjusted for position with a line that runs around a sheave at the mast step and stopped off at a cleat on the starboard top of the centerboard trunk. The centerboard trunk slot is closed on the bottom of the boat by a slit rubber gasket. The purpose of the gasket is to reduce resistance of the hull by closing off the flow of water through the trunk. This gasket does impair the movement of the centerboard, particularly when dry. When immersed in water the board goes up and down more easily.

Should you need to remove the centerboard, pull the gasket open at the front of the centerboard. You will notice two slots that will permit a pair of screwdrivers to push the spring loaded centerboard pin free (Fig. #30).

#### I. RUDDERS

General: Your rudder is a pivoting type permitting beaching the boat by hoisting the rudder blade with one of two lines under the tiller (Fig. #24). The other line is to hold the rudder blade down. You can sail in shallow water requiring the rudder blade to be partially lifted. However be careful to not use excessive quick movements of the rudder. The possible leverage of the blade in this position can break the rudder head or pull fittings through the stern. The rudder blade is actually only intended to be used in the full down position.

1. Slide the rudderhead over the pintles and secure (Fig. #24).

#### J. DRAIN PLUGS AND BAILERS:

General: The Bandit 15 is equipped with two bailers. These bailers will evacuate water from the cockpit only if the boat is moving four or five miles per hour. Below that speed they will let water into the cockpit. If the boat is left stored on a trailer or raft, you may leave the bailers open to drain off water. Be certain to close the bailers before launching for sliding an open bailer off a trailer will tear it from the hull.

1. Drain Plugs. There are three drain plugs in your Bandit 15. Two are located on each side of the centerboard trunk adjacent to the bailers. These two plugs will drain off any water that accumulates while sailing, for evacuation of this water into the cockpit and then out the bailers. Open these frequently to check for water in the interior of the hull. The third drain plug is in the stern of the Bandit 15 for draining off water, only when the Bandit 15 is out of the water.

Caution: It is virtually impossible to make or maintain any boat absolutely watertight. Should you accumulate unreasonable or unsafe amounts of water, check for its source and reseal, or notify your Sail MFG dealer.

2. Check and close off the three drain plugs---shove off---HAPPY SAILING.

5. Pass the spinnaker halyard around the first sheave on the port side of the mast step, through fairlead and to the cleat on the port side of the centerboard trunk (Fig. #29).

Note: If you are using a spinnaker continue rigging as described in spinnaker instructions. If you are sailing without a spinnaker tie the hoist end of the spinnaker halyard to the spinnaker pole mast eye (Fig. #29) tension and fix to the cleat on the port side of the centerboard trunk (Fig. #29).

Note: If you wish to take the jib off rather than stow it furled, the spinnaker halyard can be used as a forestay by tying it through the two holes in the gunwale at the stem. Be certain to tie off the opposite end of the halyard securely rather than depending on a clam cleat. The clam cleat would certainly hold but casually curious people could uncleat the halyard and drop the mast. You must have the jib on even when sailing cat rigged to have the strength of the jib luff wire.

#### E. ATTACHING THE JIB SHEETS AND JIB FURLING LINE

1. Take off any wraps of jib furling line from the furling spool.
2. Tie the free end of the jib furling line to a weighted object such as a key ring and pitch it down through the spinnaker launching tube. Untie the weighted object and feed the line through the small hole in the port side of the forward bulkhead into the stowage locker. Tie a knot in the furling line so that it will not pull through the hole (Fig. #2).
3. Lead the port and starboard jib sheets inside the side stays and through the fairleads of the adjustable jib jam cleats (Fig. #11).

Note: Now as you untie the jib sheets and pull them the jib furling line will be wound on the jib furling gear spool.

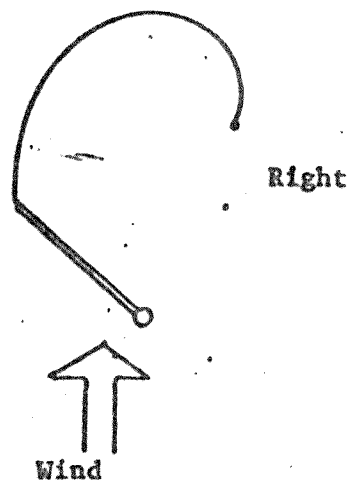
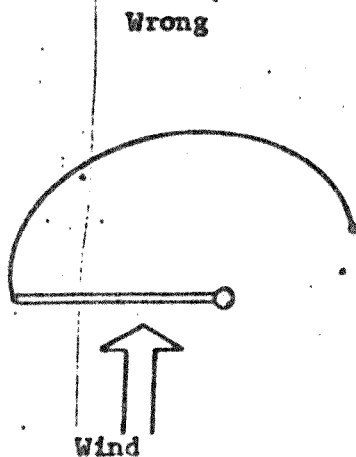
#### F. HOISTING THE MAIN SAIL

1. Place the battens into the batten pockets of the main sail (Fig. #17). The larger of the four battens is the top most batten. Push this batten firmly into the luff socket to smooth any wrinkles along the pocket and hold into place by wrapping the velcro tape around the end of the batten. (The top batten should protrude about 1" from the batten pocket.) The other three battens are of the same length. Insert into the batten pocket so that the inboard end rests in the contained elastic strap and therefore will push the batten to the leech of the sail.
2. Pull the shackle end of the wire main halyard down and shackle to the head of the mainsail, (Fig. #12) with a 3/16 screw pin shackle.
3. Pull the halyard tail, feeding the bolt rope of the sail into the sail entry slot at the same time (Fig. #12). Hoist until the sail is at the head of the mast. Pull the wire end of the halyard around the sheave in the mast step up to and secure the wire loop to the main halyard stop bolt on the port side of the mast step (Fig. #13). You may leave the rope halyard tail attached to the wire halyard, tossing the rope into the port locker or untie the rope if you choose.
4. Attach the gooseneck of the boom to the gooseneck track on the mast (Fig. #14).
5. Attach the tack of the mainsail to the tack casting with the tack pin (Fig. #15).
6. Attach the clew grommet of the mainsail to the adjustable outhaul shackle (Fig. #16 & 22).

#### G. MAIN SHEET AND BOOM VANG

1. Attach two single blocks to the boom bails with 3/16 shackles (Fig. #18).
2. Reeve the mainsheet through the blocks (Fig. #22 & 23).

A general rule of thumb is to keep the spinnaker pole perpendicular to the wind direction and feed the sheet until the luff (weather leech) just breaks (luffs). However, what is really being described is the location of the spinnaker in relation to the wind. You should feed both the pole and sheet close together maintaining the body of the spinnaker without the leech caving in and letting the foot go forward. The sail will develop more power, thusly:



The foot flows forward, wind flows down and out the foot and the spinnaker flies high.

It is said the pole should be horizontal. Again this is a neat "rule of the thumb" which ain't necessarily so. When sailing straight downwind the pole can be permitted to rise well above the horizontal freeing the leeches to widen the spinnaker. As one sails more and more close to the wind the pole should be carried lower to tighten the luff (weather leech) and the spinnaker hoisted to the sheave cage since with more wind the spinnaker begins to act like a jib.

In lighter winds it will pay in boat speed if you use both the jib and the spinnaker. However, this tactic should only be used when you have mastered the use of the spinnaker alone.

## SETTING AND FLYING THE SPINNAKER

The Bandit 15 has most of the spinnaker gear installed at the factory, to include all cleats, blocks, topping lift, molded in launcher tube, halyard and spinnaker pole mast eye.

The spinnaker kit contains:

- Sail
- Pole
- 2 Sheet lines
- 2 Pole Clips

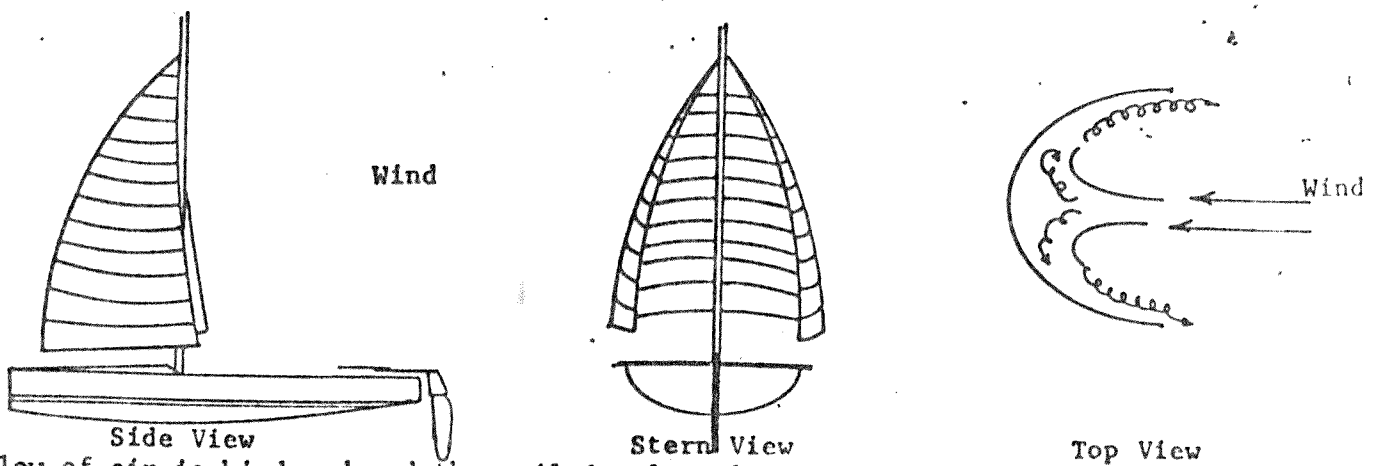
2. The sheet lines are tied to each corner of the sail with a bowline knot leaving about a 2" loop through the clew. Lead aft outside of the side stays to the turning blocks that are bolted through the gunwale flange near the stern of the boat, run forward to the small clam cleats on the gunwale just forward of the chain plates (Fig. #26 & 28).
3. The spinnaker halyard is installed in the mast at the factory. Tie the head of the sail to the end of the halyard, coming from the mast sheave cage. Take the end of the halyard coming from the foot of the mast, feed it behind the 1st sheave on the port side directly under the foot of the mast, aft through the fairlead on the port side of the trunk, then to the cleat directly behind that. The remainder of the halyard is then feed through the launcher tube emerging at the front of the boat and is then tied to the loop on the patch at the center of the sail and is used as a dousing line (Fig. #29).
4. To stow your spinnaker in the launching tube ready for use, or taking the spinnaker down after use, raise the sail by pulling on the halyard until the sail is all the way up. Check to see that the douse line is on the front of the sail, then pull both sheet lines taut, thus pulling the foot of the sail snugly against the jib luff wire. Now pull the end of the halyard (dousing line) that is tied to the head of the sail, ease off the sheet lines after the center of the sail has started into the launcher tube, and continue pulling until the sail is completely in the launcher tube. As the sail is longer than the tube you will now have a couple of feet sticking out into the cockpit. Simple stuff this back into the tube out of the way.
5. To complete the stowing operation, push the sheet lines through the U-bolt shaped chain plates, over the cheek blocks mounted just inboard, pull up snug and cleat just forward of the chain plate. The halyard is now slacked off and run aft from the head of the sail to either chain plate, pushed through in the same manner as the sheet line and cleated to the small clam cleat mounted on the forward end of the seat back. Now pull the halyard taut where it exits from the sheave under the mast, and cleat it aft of the fairlead on the port side of the trunk (Fig. #19 & 27).
6. Before hoisting the spinnaker, furl the jib, and set the spinnaker pole on the weather side (opposite the mainsail) thusly:
  - (1) Feed slack into the sheet lines and free the halyard.
  - (2) Snap one end of the pole into the loop of the weather side sheet line (actually now called the spinnaker guy).
  - (3) Hook a knot of the topping lift/downhaul line to the cleat in the center of the spinnaker pole so that when in place the pole will be approximately horizontal.
  - (4) Push the pole forward, pulling some of the spinnaker from the launching tube, and hook the spinnaker pole to the spinnaker pole mast eye on the front of the mast.

(5) While the crew is putting the pole in position the skipper should be hoisting the spinnaker (Fig. #19)

7. To raise the sail, uncleat the halyard from the seat back, uncleat the halyard from the cleat on the side of the trunk, raise the sail to its highest position and cleat the halyard on the side of the trunk (Fig. #29).
8. The windward sheet line (guy) is left through the chain plate and around the cheek block behind it to act as a downhaul on the spinnaker pole. The leeward sheet line is lifted off the block behind the chain plate and allowed to fly directly from the sail to the turning block at the stern of the boat (Fig. #29).

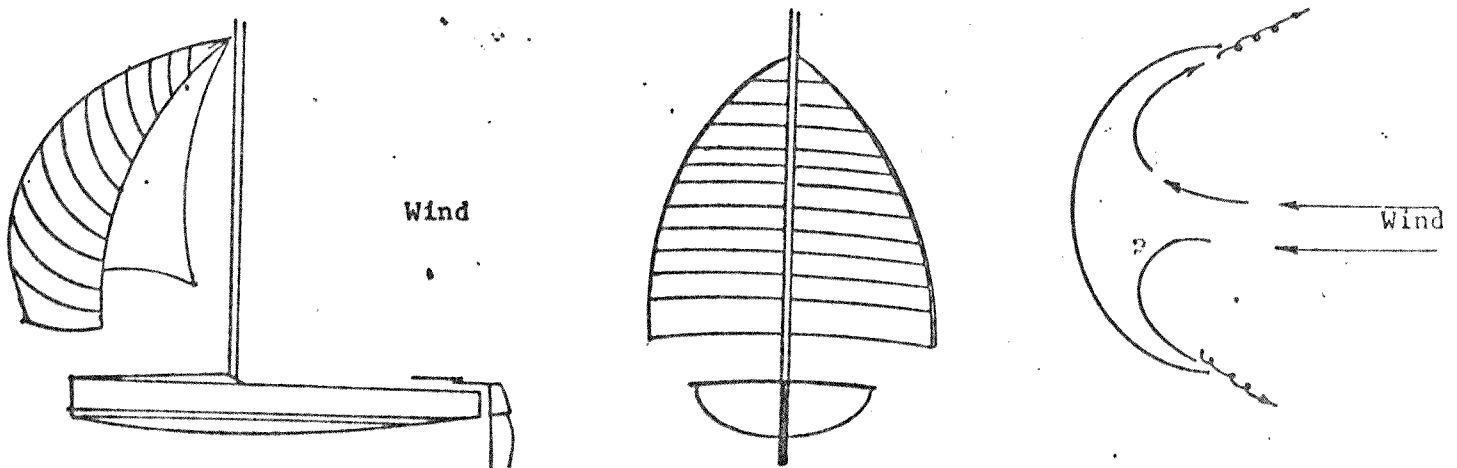
In principle, a sail develops power to drive a boat by the flow of air past the sail. If a sail is so trimmed it traps air and hinders the flow of air it develops only part of its power.

Therefore if a spinnaker is trimmed in tight with the leeches pulled tight thusly:



The flow of air is hindered and the sail develops less power.

However if the spinnaker is permitted to fly and the leeches to rise and the sail to widen, thusly:



The wind can now flow into and out of the spinnaker and develop more power. In fact, it has been said the ideal location for a spinnaker is three boat lengths ahead of the boat. Obviously one cannot get a spinnaker that far ahead but for downwind sailing, paying off halyard up to 3 or 4 feet can enhance the power of a spinnaker.