BENJAMIN WALTERS INSHORE OPERATIONS MANUAL

This is a manual prepared for operation of the sailing vessel Benjamin Walters inshore and on protected waters.

This manual is immediately followed by an off shore manual for passage making.

Schematics of the vessel are attached at the end of the two manuals showing through hulls, location of safety gear, etc.

A table of contents for both the inshore and offshore manuals has been created and may be found at the beginning of the respective manual.

Manuals, schematics, and instructions for all equipment are located in file folders in the central locker, starboard side, just aft of the salon seat, immediately below the weatherfax.

Lee Stimmel

12th floor, 155 Montgomery Street
San Francisco, California, 94104
415-392-2018
lstimme@stimmel-law.com

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PURPOSE OF THIS MANUAL

This operations manual is prepared to give a brief description of the basic operating systems of the vessel Benjamin Walters. It is not intended to explain all aspects and details of the vessel, but to present in outline form those basic systems that exist so as to allow the safe and efficient operation of the vessel in San Francisco Bay and tributaries. The second portion, the offshore manual, describes those systems necessary for ocean voyages.

Predeparture Checklist

1. Using glow plug on panel, warm up engine; check gauges on starboard side of companionway (a maximum temperature of 190 water; a minimum of 40 lbs oil at 1500 rpms are requirements for operation).
2. Close all portholes, checking especially the forward berth port side and head; tighten forward berth portholes very tightly since they are often underwater.
3. Blue Water life jackets normally stowed in dinghy hanging on davits. Inflatable Life jackets for all crew and passengers stowed in blue net bag starboard rear berth. Float coats hanging in same berth. Offshore inflatables in red bag, starboard rear berth can be used as backup.
4. Safety equipment checkout (see following list).
5. All canvas off vessel;
6. Attach main halyard; uncoil all halyards, jib sheets, staysail sheets, cunningham, downhaul; boom vang; mainsheet; all line stoppers up. Boom brakes both released.
7. Check-out man overboard pole and package for clearance of all lines.
8. Check that first aid kit in place on cabin top just to left of companionway. (recall offshore larger first aid kit under starboard salon seat.) Check spotlight in holder inside starboard dodger. (Spare flashlights aft of companionway steps.
9. Check VHF, including both handhelds and main one at navigation station. Locate vessel assist card at under engine panel ready rack and on key to engine.
10. Turn on: GPS; radar; navigation instruments; make sure circuit breaker on for bilge pumps; autohelm.
11. Check hailer. Put on manual. Locate manual handheld horns behind push pit seat.
12. Check running lights; spreader lights.
13. Close drain in head sink.
14. With engine started, unplug shore power. (2 Power plugs).
15. Prepare casting lines.
16. Locate chart you will need above navigation table.
17. Place binoculars in ready rack in cockpit, behind companionway doors, so labeled.
18. Give life sling instruction to crew and passengers. Assure each person in life jacket.
19. Brief crew on location of lifejackets, first aid kit, VHF, flares and smoke.
20. Brief passengers on procedures for man overboard, head, and holding on at all times.

21. Check for flares and smoke under helm seat. In same locale, locate spare shackles and cotter pins.
22. After engine on for five minutes, check gauges for correct temperature and oil pressure.
23. After checking transmission linkage engages while still tied to berth, put in neutral then cast off.

Arrival checklist

1. Turn on engine **before** drop sails.
2. Once warmed up, with engine in neutral drop sails. Check for lines in water, then into gear.
3. Put out fenders port side.
4. Prepare shorelines and assign who is to jump.
5. Make sure hailer still on to warn off other vessels.
6. Have passengers and crew in appropriate position.
7. In high south wind, assign more persons to jump to hold vessel in and give them longer shorelines.

Before you leave the boat

1. Shore power hooked up. All yellow LEDs AC "outlets" circuit breakers outboard navigation table on except water heater off; under stairs AC panel, leave all on.
2. On DC panels (one outboard of navigation table, one above navigation seat, all red LEDs), all off except bilge pump and refrigerator.
3. Replace canvas.
4. Hose down entire vessel, especially woodwork.
5. Replace lifejackets in bags. Stow bags.
6. Reopen port in forward berth and head.
7. Empty garbage if needed. Basket is behind companionway steps. Steps lift off. Additional plastic bags under bag. Dump garbage in dumpster at gate to dock.
8. Set alarm. You have three minutes to get off boat before it arms.

   If the vessel is dirty, please clean it up before you leave...It is a home. If something is broken, call Lee at 415-392- 2018 and advise him or leave a message so he can repair. 24 Hour a day number. If emergency (water running in, etc.) see below emergency numbers.

Emergency contact numbers/equipment

In the event of an operational problem that is not resolved by reference to this manual, the following resources exist:

1. By cellular phone Telephone the owner Lee Stimmel at 415-392-2018. If no answer, try 415-531-5935. If Lee is not in the office, ask to speak to Belinda at the office. Text message if no answer.

If you cannot reach Lee Stimmel, use the cellular telephone to try to reach the following persons who are also familiar with the various systems on the boat:

Paul Featherston	510-553-2228--Pager

Aleko Frankman or Susan Stimmel	925-256-6608 or 925-212-1789
Jim Rumer	510-652-7080
David Mischel	415-563-1606 or 415-706 1606
Leonard Lee	415-240-1344
Ben Wegrovski	510-414-3181
Ken Janke	415-867-8450

Note there is a **satellite phone** at the navigation table in a compartment on wall near radar. That phone works only from outside (clear view to satellites) and is world wide. Be sure to use 001-area code-number to call.

2. **VESSEL ASSIST:** The boat is a member of the marine equivalent to AAA called " Vessel Assist" and free towing and emergency repair is available both within San Francisco bay and outside the gate for twenty-five miles. The card to allow calling them is located outboard of the navigation station on the handrail inside the cabin top. There is also another card below the engine control panel at the companionway, starboard side. It is a plastic card with telephone number (for cellular) and vhf channel as well.

   The membership number is G3050248; the telephone number is 415-399-1100.

   The VHF channel is 16 the tow and repair service is available 24 hours a day and they will travel to you and tow you back to your port of selection.

3. The **Coast Guard** will assist a boat in immediate peril of sinking or loss of life. Channel 16 on the vhf is the coast guard monitored channel. MAYDA.Y, MAYDAY, MAYDAY is the call on Channel 16
4. **VHF Call**. Any other vessel should assist you. Wave any article of clothing, use flares (at night) or smoke (during day) and call on vhf channel 16 which is the emergency channel. There is a VHF at the navigation station, next to the seat; two handheld VHFs are located forward of the navigation table and next to the coffee pot.
5. **Flare kits and Smoke Cans** are under the helm seat. Instructions for use of flares is inside the kit. The kit is an orange plastic cylinder. Flares are only to be utilized in true emergencies, to wit danger to vessel or life. Do not use them if all you need is a tow...Use vessel assist instead. **Strobe light** at top of mast is turned on at DC circuit breaker board outboard of navigation table. Additional strobe lights are attached to man overboard pole and to right of companionway on cabin top.
6. **Hailer** is starboard side of companionway and **air horns** are located starboard cabin top companionway and in box behind pushpit seat.
7. **EPIRB (406)** is located on davits in a automatically deployed container. The container can be opened to turn it on with instructions on the unit. Another 406 EPIRB is on a bracket on wall behind navigation seat.
8. A **radio homing beacon** (SAR beacon) is located on wall port side, just before galley. Instructions on the unit.

ADDITIONAL SAFETY EQUIPMENT

1. **Liferaft** (six person) is forward of the mast with two quick release shackles. Be sure to tie the lanyard on the vessel before launching it. Instructions are on the container. A survival kit for inshore use is inside the raft. An **abandon ship ditch bag** is located on the floor of the starboard cabin with survival gear and food and water inside. A **second ditch bag** is behind companion way steps with water maker in it. *Take the two **handheld VHFs, the SAR beacon and the EPIRB** with you when boarding raft.* See above for their locations. A **large medical kit** is under starboard salon seat and a smaller medical kit on the cabin top port side, next to companionway.

Remember, do not launch the raft prematurely. Even a sinking vessel is safer than the average liferaft. A good rule to remember...Get into the liferaft when the boat is so low in the water that you have to step up to get in the raft.

2. **Lifejackets** are in the bags in the dinghy, the children's lifejackets in their own separate bag. Inflatable lifejackets and float coats are hanging in the starboard rear cabin and in net bags on the berth of the starboard rear cabin. **Harnesses** and **jackline** are stored in red net bag in the starboard rear cabin.
3. The **manoverboard pole** is launched from the rear stay and is connected to a horseshoe buoy, dye, and strobe light. Throw the entire package over if needed. **Throwing line** is in two bags hanging on lifeline rear cockpit port and starboard sides, each labeled.
4. The **lifesling** is deployed off the port rear pulpit. Instructions are on the case of the sling. Block and tackle for life sling in box marked overboard forward of dodger. **Ladder** to assist recovery is on the starboard quarter of the cockpit and swings down with the gate opening in the lifelines. A **longer ladder** is stowed just fwd. of the dodger and can hang from the side of the boat.
5. **Boat hooks** stowed on cabin top, starboard forward, port aft just forward of dodger.
6. **Tow line** is kept on the belaying pins on the mast. If vessel is being towed, attach the line directly to the large cleat on the windlass running line through anchor rollers. Do not tow other vessels without training as to how to attach the line since with the rear pulpit and dinghy, towing is extremely difficult. If need to do so, create a two ended harness so that the towing line is attached to both cleats on each side of the rear cockpit, running the harness under the dinghy, attaching the tow line to the harness.
7. **First aid kit** is stowed just to port of companionway on cabin top next to line stoppers in a small blue bag, "first aid." The **main medical kit** is kept in large blue case under starboard salon seat. **First aid manuals** are located in the kits and a book sized manual is located in the drawer, port

salon, just aft of head bulkhead marked “ship’s papers.” **Defibulater Unit for heart attack** located in forward berth, starboard side in a red case. Directions in unit.

8. **Bilge pumps:** Two are electric, two manual and one engine driven bilge pumps. There is also a bucket in the dinghy on the davits and a folding bucket under the floorboards just forward of companionway steps.

   A) The **electric bilge pumps** are both under the floorboards just forward of the bottom of the companionway steps. The two switches for them are on the angled bulkhead to port of the companionway steps (near electric coffeepot.) The lower switch is the main electric bilge pump at the lowest point of bilge. The upper switch is for a pump located just aft of engine compartment. Circuit breakers for the bilge pumps are on the DC board outboard of navigation table.

   B) **First manual pump** is located just aft of engine compartment under floorboard with pump handle tied to it. The **second manual pump** is accessed in cockpit just to starboard of helmseat under bronze plate. Handle for that one is located racked with ditch bag in starboard rear cabin. The plate key is in rack on cabin top, just starboard of companionway.

   C) The **engine bilge pump** accesses water from the bilge rather than the sea to “cool” the engine. A “y” valve is located just forward of engine under removable aft salon seat. Do not use this pump unless dire emergency. Be sure to switch back to sea access once water in bilge removed or engine will overheat. Better to use bucket.

9. There are **four high water alarm systems** installed on the vessel.

   A) **Bilge pump pilot lights**: if the main electric bilge pump goes on, warning lights go on in six locations: first, on the switch to the bilge pump a red light will come on; second, in the cockpit, to port of helm seat, a bright LED light will go on. Third, in the forward cabin, to starboard, an amber pilot light will go on, and, fourth, just forward of sink in galley a fourth red pilot light will go on along with (fifth) a red LED in main salon (rear near buddah) and finally on outboard shelf of port rear berth. Note that the bilge pump goes on occasionally without emergency...But if it stays on for two minutes or more, or comes on every five minutes, immediately check bilge. The backup electric bilge pump has one pilot light on its switch on angled bulkhead aft of galley.

   B) **Forward high water alarm**: a second light in cockpit, smaller and fwd of the bilge pilot light will light as well as a strobe and siren alarm in fwd cain if the water level under the forward cabin floor boards reaches a critical level. The warning light in forward cabin is marked “fwd.”

   C) **Aft high water alarm**: Should the water in the main bilge (forward of steps) reach critical level, three separate alarms will come on. In the cockpit, a red light to port of the helm seat will light. Additionally, two strobe and sirens will sound below, one at base of steps, one in forward cabin, both marked “aft.”

   D) **Engine high water alarm**: Should water reach a level where it will soon enter the engine compartment, another audio alarm will sound inside the cabin on angled bulkhead near galley, along with small red led on the black face of the alarm switch unit itself.

10. **Strobe light** at mast head is turned on at main DC circuit panel outboard of navigation table. Turn on “strobe” circuit breaker. Handheld strobes are on bracket on davits; top of companionway steps on cabin top starboard side; in holders immediately below SAR at base of companionway steps.

11. **Propane gas alarm** is located on angled bulkhead below coffeepot, the round device with normally

green colored led. Should propane or hydrocarbon gas reach high levels in bilge, a high pitched alarm will sound from the unit and a red led will light. Immediately extinguish engine and all open flame, open floorboard forward of companionway steps (where air sniffer actually is) and air out. Check propane system to assure no leak. This alarm is highly sensitive and after airing out bilge if it still rings you can turn it off with plunger switch near floor in rear of galley.

12. **Carbon monoxide alarms** are located in port rear berth near floor, in galley near the floor and in the forward cabin behind the door . Each has a normally green LED and will move from yellow to red LED if co level becomes dangerous and will let off high pitched sound from unit at dangerous levels. This unit has a computerized memory for long term buildup. *Air out boat immediately. You do not smell CO and it is deadly.*
13. **Smoke alarm** is a standard household unit located on cabin ceiling in main cabin just aft of door to forward cabin. Another smoke alarm is next to it, connected to security system but only on when the system is armed.
14. **Security System** is a unit in port rear cabin, wireless, using motion detectors in main cabin and forward cabin, contact switches on main hatch and both high water and smoke detections systems. To turn off alarm get the methodology directly from Lee Stimmel or certified first captains. A manual **emergency siren** sounds when the plunger switch on the cabin top port of companionway marked "emergency" is pulled. This is to call crew in any emergency.
15. **Fire extinguishers** are located in the following areas: in hanging locker in main cabin across from head; in galley to port side of wine glass cabinet; main unit is behind companionway steps.
16. **Halon automatic fire extinguisher** is in the engine compartment inboard and automatically deploys if there is a fire in the compartment.
17. **Binoculars:** there are three units one located in compartment so labeled behind computer screen; two stabilized units in salon starboard locker behind leaded glass.
18. **Bosun's chair** is located under navigation table seat; lift off cushion and wooden cover.
19. **Cable cutters** are two units, one hydraulic is located forward of engine compartment under seat in locker under cushion. A second is located under helm seat (near emergency tiller). Use to cut rigging if dismasted or anchor chain if anchor jammed.
20. **Hack saws and blades; duck tape and rigging repair equipment including shackles and pins:** located on deck forward of dodger in deck box marked "rigging repair." More are located in helm seat and in mast boxes. Note **sail repair kit** located in basket inside engine compartment on engine angled bulkhead.
21. **Spotlight** is located on bracket inside dodger, starboard side.
22. **Flashlights** located in brackets behind companion way steps, on cabin top starboard side of companionway, and in various holders scattered about boat. Spare batteries in drawer aft part of galley.
23. **Personal EPRIBS** when not attached to harnesses are stored at feet near navigation station.
24. **Hand bearing compass** (3), one located in holder, starboard side, outboard of navigation station; one in holder next to navigation instruments above companionway; one in holder in galley, facing forward.
25. **Night and Thermal vision scopes** (2) in navigation table (lift top). Third generaton and fourth

generation mono. **Thermal vision scope** in locker forward starboard salon.

26. **Wooden plugs** to stop leaks are located in basket in engine compartment, pull out angled bulkhead door; additional plugs are also taped or tied to the various through hulls in the vessel.
27. **Tools** except for engine are located behind cushions starboard main salon; under seats starboard main salon.
28. **Spare shackles, pins, etc.** Are located in plastic box under top part of helm seat and larger ones under helm seat. (lift top of helm seat, tilting it towards the aft for smaller box; Lift entire helm seat tilting it forward for larger box.)
29. **Key to access plates** (not fuel) are stowed in box port side cabin top next to companionway. Fuel access key in box at foot at helm seat.
30. **Additional lines** are located on various belaying pins at mast and on midstay belaying pins.
31. **Spare jacklines** are located hanging on hooks port side dodger.
32. **Spare foghorns** (handheld) are located in box behind rear pulpit (white wooden box on rail.) and at companionway top starboard side.
33. **Windlass switch** is located in forward cabin, starboard side (The very large circuit breaker midway up starboard bulkhead just forward of hanging locker.) The Windlass deck switch is a foot pedal just to starboard of windlass. The windlass handle is attached by lanyard to bracket near windlass. A spare handle is jammed under windlass wooden grid starboard side. on deck near port midboat shrouds.
34. **Spare anchor** is stowed on port side of bowsprit ready to drop. It has its own anchor line already attached, but be sure to flake the line since it has a tendency to get caught under regular anchor chain.
35. **Running lights** are turned on at main circuit breaker panel to starboard of navigation station and are labeled. There are two independent series of running lights, the normally used ones with the switch directly above the steaming light circuit breaker and an emergency set which is located on the deck box on the forward deck (so take off its canvas if on) and which is turned on by a plunger switch over the sink in the head. At the navigation table there are also circuit breakers for steaming lights, spreader lights, anchor light, strobe, and VHF. All are located at the navigation station circuit board immediately outboard of navigation table, all with red LEDs when lit. See the full description in the relevant sections below.
36. **Wood for hull repairs** is located under main salon cushions, port side. **Collision mat** is behind cushions port salon. **Plugs** in basket on angled bulkhead of engine.
37. **Engine Spares: Spare hoses** are located under floor boards in main salon. **Spare belts** for engine are under the seat in the salon forward of engine. **Spare oil and transmission fluid** is in the basket immediately above engine compartment and under floor boards next to engine. **Water fill for engine** is via a tank under the port pilot berth behind the salon seat. Water container nearby.
38. **Turn off valves for fuel and water** located under floor boards mid ships next to engine. Labeled.
39. **Hull Breach Tools** for ripping off paneling to get access to hull are located on bracket behind companionway steps and under floor board in galley. **Plugs** for inserting into breach are in basket on angled bulkhead to engine.

ENGINE OPERATION

Starting the engine

1. The engine is an Isuzu 52 diesel. It is located in the galley under the sink. To start the engine, use the key on the control panel in the companionway, starboard side. Turn the key all the way to the left and hold it there for sixty seconds to use the glow plug to preheat. Then turn the key all the way to the right and the engine should start. The engine should be in neutral, the throttle forward about twenty percent of the way.
   A) preheat is not necessary after the engine has run for five minutes if the engine has been run within the last two hours.
   B) make sure the engine is in neutral and throttled twenty percent forward before starting the engine.
   C) let the engine warm up for five minutes before engaging the gear. Test that forward and reverse is working by engaging them with minimum throttle with the boat still tied to dock before leaving the dock.

Stopping the engine

1. Reduce throttle to minimum, but keep in forward gear to engage maxiprop.
2. Pull the stop cable located forward of sink and labeled “engine stop.”
3. Turn key in panel to neutral (upright) position.

   If you turn the key before the stop toggle switch is pulled, the engine will not stop. The above order of operations is critical.

4. If you wish to engage the maxiprop (feathering prop) stop the engine in forward gear as described in more detail below. If you are not planning to sail after stopping the engine, stop engine in neutral.

In an emergency situation, if the engine will not stop

Open the engine compartment; on the starboard side of the engine is the throttle mechanism. Push the lever down the way, hold it there, and the fuel will be cut off from the engine. Only do this in an emergency...Otherwise, keep the boat in neutral and call the emergency numbers for help. The lever is painted yellow.

Operating the engine

1. The throttle and gearshift are located on the binnacle. There are three gears: forward, reverse and neutral. Forward is forward, aft is reverse, in the center is neutral. The throttle is on the starboard side. The gear shift on the port side.
2. The control panel is on the starboard side of the companionway. It has on it the ignition switch-key; glow plug button (and access-viewing hole); tachometer; oil gauge; water temperature gauge. These gauges should be checked at least every half hour while the engine is on. If the oil or water reaches a critical stage, an alarm will sound and a red light on the panel will glow. This same alarm sounds if key is not turned back to neutral position after engine is turned off. Turn off engine the moment such alarm sounds or engine damage may occur.

Maxiprop and engine

The boat is equipped with a feathering prop (“maxiprop”) which stops drag when under sail. To ensure feathering of prop when about to sail , turn off engine with boat in forward gear, minimum throttle. Be sure to then immediately place gear in neutral so that when you start engine again it is not in gear.

Overheating of the engine water

A) The water should remain at about 160-180 degrees and should warm to that level in about ten minutes. Do not operate the engine if the warning light or alarm sounds as to excess heat or if the temperature goes over 200 degrees. Immediately turn off the engine.

   1) Fresh water can be added to cool the engine. In the main salon, under the port pilot berth, aft side, is the engine fill. (It is just forward in the compartment of the stainless steel hot water heater...Do not confuse the two.) Slowly add fresh cool water from the water containers stowed near the fill. You can replenish the containers if necessary from fresh water in the sink.

   2) Another source of overheating is failure of the heat exchange system. Salt water is pumped into the vessel to run in pipes parallel to the fresh water cooling. To determine if the water pump is working, go to cockpit and look over port rear side. Saltwater should be pumping from a pipe near the stern while the engine is on. If it is not, turn off the engine immediately and call vessel assist.

Oil pressure problems

1. Oil pressure should remain above 40-50 lbs during normal operation at 2000 rpms. If it drops below 40 lbs immediately stop the engine and add oil. Also, an alarm will sound and the red light on panel will light. (Note that this is the same alarm as overheating of water...Check the gauges to determine if it is oil or water that has set off the alarm.)
2. Add oil in the oil fill hole at top of engine. (Make sure it is not the water fill hole which is nearby...And remember that we normally fill water in a remote location under pilot berth). Spare oil in rack above engine and more is under floor boards near engine, stowed with transmission fluid as well. Check oil level with each quart added. The dip stick is located inboard of the engine, mid engine. You will have to tilt settee seat forward of engine forward to gain access to the dip stick.
3. Engine oil dipstick is located on port side of engine, mid engine. Yes, it is very difficult to find and pull out and use a towel to shield your arm from the engine if it has been running. The dipstick has a metal ring at the top. One pulls forward the salon seat forward of the engine and finds a elastic band to hold the seat forward so as to gain access to the dipstick...And the engine belts, for that matter. Transmission fluid is in the same rack as the engine oil and the dip stick for transmission fluid is on the transmission immediately aft of the engine, port side. The dip stick hole is also the fill hole for the transmission.

Dead battery

1. The batteries and battery monitoring systems are discussed elsewhere in the offshore section of this manual, but this section will describe how to maximize battery power should the ignition key not start the engine due to low electrical power and advise as the emergency starter battery locatio.

   A. First, make sure engine is in neutral. Second, make sure that “stop toggle cable” on engine panel is not stuck in the stop position. Only then try the following:

B. The starter battery switch is controlled by a large black switch (one of two) located on bulkhead under berth in port rear berth. Note that there are two such switches, one marked “engine.” There is a red piece of tape on the switch which should be aligned to the “both” position of the switch which is also marked by red tape. Make sure such alignment is set up. If not, align it and try again.

C. It that does not start the engine, then turn the other black switch, outboard of the first one, marked “house batteries” so that it is on “both.” Thus, to maximize starting power, both battery switches are turned to “both.” (What you have done is use both the starter battery bank and the household battery bank, together, to attempt to start the engine.) Try again.

D. If this still does not start the engine, under the stb. rear berth, outboard, is an emergency starter battery which can be connected to the starter batter terminals in the same compartment using cables already connected to the unit. Attach the cables to the starter batteries.

Transmission problems

Failure to engage in gear may be caused by one of two problems:

A) Lack of transmission fluid. Transmission fluid is stored under floor boards near engine and also under port settee forward of table (do not confuse with oil which is stored in the same location.) The fill location is just forward of the transmission which is just aft of the engine and under the floorboards. The fill hole is on the port side of the transmission and the dipstick are the same. Dipstick is located on port side of transmission housing. Twist to remove the dipstick, pulling up.

B) Failure of linkage. You can locate the transmission linkage on starboard side of transmission housing, forward end. One can manually pull transmission linkage. This is dangerous when entering berth since even with full throttle back the transmission, if in forward, still moves the prop and propels the vessel slowly. If you are manually moving the transmission linkage in this this manner, be sure to station someone below to move the linkage as well.

FUEL

1. There is no fuel gauge on the vessel but there is an hours meter on the angled bulkhead under coffeepot. The vessel uses about one gallon per hour. The fuel supply derives from two large tanks (comprising 130 gallons) and these tanks are located under each of the rear berths. There are two fuel turnoff valves located under floorboards immediately to right of engine compartment. (Note that the water turnoff valves are also near same location. The water turnoff valves are of thicker piping and there are three of them marked with the location of the water tanks.)
2. **Spare fuel is located in plastic containers under pilot berth.** Fuel fill holes (2) are located directly behind helm seat in gunnels. The tool to open the fuel fill is in the small box under your feet at the helm.
3. If the vessel is entirely out of fuel before you fill it again, you will have to prime the fuel and remove air bubbles in the fuel line to the engine. Open the engine compartment. On the starboard side you will find a small pump under a plastic cover directly on the right side of the engine. The two set screws for the injectors are easily accessible and must be carefully opened slightly, one at a time, to clear the air. Pump the small pump a few times until the air stops coming out and fuel, instead, pours

from the set screw. Do both separately. Then start the engine and test it for five minutes before assuming all the air is out. You may have to repeat the process. Be sure to tighten the pump handle when done.

Spare engine parts, tools

Spare fuel filters, oil filters, are on the shelf directly above the engine in the engine compartment and on brackets on the doors to the engine compartment. Additional filters are stowed under settee port side forward, near oil. Spare impellers are located under salon seat just forward of engine compartment as is spare alternator, belts and fuel pump. Engine tools are in forward cabin under seat.

OPERATION UNDER SAIL

Winch handles are kept in holders throughout the vessel; there are two holders aft of the jib sheet winches in the gunnels; one holder on each side of the mast; two holders on cabin top near line stoppers, port and starboard.

A.) Mainsail: the mainsail is raised from the starboard mast winch, halyard shackle normally stowed on the starboard outboard belaying pin rail.

Be sure to release the following main running rigging before raising the main: many of the lines that have to be released run to the cockpit. Several must be released or damage to the sail or rigging will result, so make sure each of the following lines are released and running free:

1. Boom vang (line stopper on starboard side of companionway, green striped white line.)
2. Mainsheet (line stopper on port side of companionway, thick white line.)
3. Cunningham (line stopper on starboard side of companionway, red line.)
4. Dutchman is controlled by topping lift and needs only be tightened after main is up and loosened again once main down so boom can drop into boom cradle. Topping lift is through line stopper on stb. Cabin top, red striped white.
5. All three reefing lines must be running free as well as the reefing ring off the reefing hook at the mast. Remember there are three reefing lines (two on stb. Side of boom, one on port) and all must flow freely...Unless you have reefed the vessel as described below. And, of course, make sure all reefing ties from past reefs are untied so sail may raise freely. Third reef is red line. Second reef is white line. First reef is green line. Be sure to untie reefing lines as well.
6. Boom brakes must be released. They are the lines on each side of the cockpit, aft of the primary winches.

Be sure to slowly raise the sail watching to make sure that all the above lines run free....Have someone at the mast watching to make sure no tangles exist.

As soon as mainsail is fully raised, tighten all the above lines and close the line stoppers and also tighten the topping lift (line stopper to starboard of companionway, outboard, red and white line.) Failure to tighten the topping lift can result in it tangling with the rear stay...If such a tangle results, you can either loosen it even more and “swing it back” around the rear stay or disconnect it from end of boom and untangle it.

When to reef the sails

Benjamin Walters is a heavily canvassed boat designed for the light winds most often encountered while cruising. As such, Bay Area winds often create conditions in which maximum performance is achieved when reefed.

Remember: heeling over does not necessarily increase performance. An angle of twenty to thirty degrees is best when windward or on a beam reach. Anything more merely slows the boat down.

Just touching the top of the rails (cap rail) to the water is about 30 degrees and is the maximum for good performance. Burying the rails or filling the gunnels means you are about 35 to 40 degrees and merely plowing through the water.

A good rule of thumb is one reef and full jib if winds are above fifteen knots: two reefs and reefed jib if winds are above twenty knots. Drop the main entirely and use a reefed jib if winds are above twenty five knots. Furl the jib and use the staysail if the winds are above thirty five knots. Reef the staysail if the winds are above 40 knots. Use the trysail alone if the winds are above 45 knots.

How to reef the Main:

Recall that there are three points on the main which require adjustment to reef: the tack (forward lower corner) the clew (rear lower corner) and the head (upper forward corner.) Put simply, you lower the sail (head) by the halyard, clip on the tack ring, pull tight on the reefing line attached to the clew, which is the green colored (first reef) or white line (second reef) on the starboard side of the boom; port side of boom for third reef (red line)), cleat it, then raise the head again until the reefing ring is tight. Green line is first reef. White line is second reef. Red line on port side of boom is third reef. Tighten unused reefing lines and topping lift after putting in reef. If you are to stay reefed for more than a few hours, use the reefing ties to bunch the unused main.

To accomplish the above requires release of the mainsheet, boomvang and boom brake and letting the entire sail luff...Any pressure on the sail will fill it and not allow you to lower or raise the head.

So....The following steps apply:

1. Station someone at mast to adjust the various reefing lines.
2. Loosen mainsheet and let sail luff. Let loose boom brakes if attached and boom vang if in use.
3. Drop halyard from halyard winch so that sail drops to the required reef (the ring is dropped to the Point where it can reach the hook at the tack). Put ring on hook.
4. Pull tight on reefing line, using reef winch on boom if necessary, cleat it.
5. Raise halyard again until sail taut.
6. Adjust mainsheet, boom brakes, boom vang as required.
8. Adjust all reefing lines, and topping lift as required. (All will need to be tightened.)
9. Tie reefing lines on sail to hold unused portion of sail using the same knot you use to tie shoes...But only do so if you will stay reefed for several hours...Otherwise, it is much work for little gain and there is the danger one will forget to untie them when unreefing, tearing the sail.
10. Coil all lines.

There are three reefs available, but the same procedure is used for all...For second or third reef you simply utilize the higher reefing ring and the white or red reefing line rather than the green one.

Remember the main rule on reefing: if you are thinking that maybe you should reef, you actually should have reefed an hour ago....Reef before you need to...

In rough seas, you may wish to tie the aft end of the boom to the boom crutch to hold it while you work the reefing lines.

How to unreef Main

Since the wind has lessened the only dangerous aspect of unreefing is doing it out of order thus tearing the sail. As such, carefully perform the following steps in order:

1. Release any reefing ties that were attached.
2. Release mainsheet until sail luffs, and, if attached, boomvang, cunningham, boom brake, loosen topping lift.
3. Lower halyard enough to pull reefing ring off hook.
4. Uncleat clew reefing line and make sure it runs free. Then, since you may have tightened all reefs up, make sure all reefing lines run free.
5. Slowly and watching that all lines run free, raise Halyard to lesser reef or unreefed condition. If going to lesser reef, attach the next reefing ring to hook, tighten clew reefing line, and raise halyard to tighten sail. If unreefing, simply raise sail all the way and adjust boomvang, cunningham, topping lift and mainsheet as you normally do.

Dropping the Main

The boom is equipped with dutchman lines that hold the main onto the boom when dropped, so the procedure is easily accomplished even with a one person crew. Assuming the main is to be dropped, perform the following steps.

1. Station crew at the mast to drop halyard.
2. Turn and motor vessel into the wind so that sail entirely luffs. You may wish to pull in on main sheet all the way to keep the mainsail luffing. If not under power, simply go tighter on the wind using the jib until main luffs.
3. Loosen main halyard and allow sail to drop. If necessary, climb mast steps a little to pull down on the head.
4. Once sail down, secure main halyard and keeping vessel into the wind, tighten mainsheet as much as possible while loosening dutchman via topping lift at the same time, slowly lower the main boom into the center boom crutch.
5. Tighten mainsheet and topping lift. Tighten and coilbBoom vang, cunningham and boom brake.

Using the roller furling jib

The roller furling jib is both released and furled from the furling line on the starboard gunnels. Do not confuse the jib furling line (thicker with the staysail furling line (a smaller white and green line) which is stowed just forward of the jib furling line. The furling line is slowly allowed to run free when it is time to unfurl, using the jib sheet to haul the sail out, running about 50 degrees off the wind. On a starboard tack, pull the port jib sheet, and on a port tack, use the starboard jib sheet to unfurl.

Do not unfurl closer than 40 degrees to the wind. In heavy winds wrap the jib sheet around the jib winch once or twice for once the sail fills it will pull out the furl too quickly. Have someone handle the furling line to make sure it does not tangle in the blocks while unfurling and that it slowly unfurls.

To furl the jib, let the sail luff gently but completely and haul in on the furling line. In any but the lightest wind you may wish to use a winch to pull in on the furl. There is a small winch available aft of the starboard jib sheet. Alternatively, the blocks on the jib furl are rigged to actually use the starboard jib winch if it is not already holding the jib sheet. You should not need massive power to bring in the jib…if you do, check the lines to make sure they are running free.

Another useful trick to furl the jib is to station crew along the starboard gunnels to help pull it in...It is the

resistance of the blocks that causes most of the problem in furling and one or two crew helping haul on the line will bring it in quickly.

Do not let the jib sheet be entirely free when furling. The sail should be luffing but the sail must be kept under control or the luffing may damage the sail and the furl will not be tight. It must be luffing, however, or you will not be able to furl it and the person letting out on the jib sheet must let out as the furl pulls in. Once the sail if furled, let the jib sheet wrap once or twice around the furled sail, then cleat the furling line on one of the cleats on the cockpit cap rail.

Reefing the furling jib

The jib is a very large sail, quite capable of propelling the vessel at seven knots in fifteen knots of wind with no other sail. It is a light air sail and if used with the main should be reefed in fifteen knots or more and reefed a great deal in twenty five knots or more.

There are two tapes on the luff of the jib indicating reefing positions But a simple rule is that the less furl line one lets out, the smaller the sail. There is a special foam reinforcement in the luff allowing the sail to set well even if reefed. It is always easier to let a little more sail out than pull it in so a good method is to over reef at first, then let additional sail out as the wind is better understood. To remove a reef, wrap the furling line around one of the starboard winches (the jib winch if no jib sheet is on it, the furling winch if the jib sheet is on it) and slowly let out the furling line using two hands. To put in more reef, luff the jib and then roll in on the furling line slowly and carefully, (using small winch on starboard side) then cleat and tighten the jib sheet as required.

Dropping the jib

The jib halyard is normally left fully up and cleated. In an emergency, such as a tearing jib, one can drop the jib just as a nonroller furling jib by releasing the jib halyard at the port mast (lower winch on the port side of the mast) and dropping the sail while having crew haul it onto the netting on the foredeck. Remember, it is a very large sail and should be tied down as soon as possible. Remember: furling the jib is how it is stowed...Do not drop the jib unless emergency or damage to the jib.

If the jib halyard breaks, the jib will slump a little but probably remain mostly jammed up the forestay slide. It is possible to furl the jib in this position which should be done as soon as possible, carefully watching the jib to make sure it wraps around the forestay. It will be lumpy but safe and can later be dropped once back at port.

Staysail

The staysail is the innermost forward sail and is roller furling precisely like the jib. The basic rules of furling and unfurling the jib pertain equally to the staysail...Slowly let it out by pulling on the staysail sheet to leeward, vessel off the wind by at least forty percent. Furl by hand (much easier than the jib since sail is so much smaller) and by winch if necessary, using the same furling winch as the jib uses.

The staysail is, in effect, a heavy weather sail, seldom used otherwise except on a broad reach in very light winds. As such, one normally uses the staysail in winds over twenty five knots with no jib up at all. If the hammock is hung on the staysail, it must be removed before using the sail.

The staysail uses line stoppers for its sheets located on port and aft cabin top. The line stoppers lead to self tailing winches on each side of the cabin top.

Reefing the staysail

As with the jib, the staysail is reefed by pulling in the furling line so that the total sail is reduced by partially being rolled around the stay. Since there is a foam luff, the performance of the sail is not greatly affected and by this method the sail can be reduced to very small area in truly heavy winds. In such winds, it is a good idea to reinforce the holding of the staysail sheets by cleating the sheets in addition to using the line stoppers.

Unreefing is merely unfurling as one did when first “raising” the sail.

Dropping the staysail

As with the jib, one does not normally drop the sail, merely leave it rolled around the staysail stay (“baby stay”). In an emergency or if the sail is tearing, the staysail halyard is located on the port side of the mast above the jib halyard winch. Again, tie the dropped sail onto the netting.

Storm trysail

In extreme weather, such as winds in excess of 45 knots, or if the staysail is damaged, the storm trysail may be mounted to allow headway. The sail is stowed in a bag in locker behind the companionway steps. It is raised on the mainsail track, but you will have to remove the mainsail from the track (the first four feet or so) to get it into the track slide, using main halyard to raise the sail attaching the clew to one of the two reef rings at aft end of boom. While the sail foot is free, the boom will control it and one can use the boom crutch to hold the boom if necessary...or the mainsheet.

Cruising spinnaker

This light air sail is stowed in a special sail bag on the port forward lifelines. This a spinnaker like sail but does not need to use the pole, is not attached to the forestay but is loose at foot and luff. It is raised via a special “sock” that one raises to the top of the mast with the sail inside, then pulls off, allowing this huge sail to fill. It is dropped by pulling the sock down over the sail as it luffs. It is flown instead of a jib off the wind and should only be used after receiving training from regular captain or crew. It is useful for winds up to twelve knots and can be used even forward of a beam reach.

Combinations of sails

When shorthanded, or for brief sails, use of the jib alone makes good sense and saves twenty minutes of preparation and stowage since the main requires stowage with a cover, etc.

Whisker pole

This pole is used to keep the jib fully extended when downwind in relatively light winds. It requires some skill to set and control and at least three competent crew. It is not recommended to be used absent special training: see offshore section of this manual.

The staysail is seldom utilized except in storm conditions or on a beam reach, so the true combination of sails encountered will be jib and main. Normally, a good combination for bay sailing, twenty to thirty knots, is one or two reefs in main and slightly furled jib.

The jib is a very large sail and one can sail alone in winds from ten knots up with very alteration in performance. Perhaps a knot and ten degrees of pointing. Indeed, once winds reach twenty knots, you

will find it useful to reef a bit, even when it is the only sail up, and excess of twenty five knots will almost require a significantly reefed jib.

SHORE POWER AND INVERTER

The vessel is equipped with shore power via two plugs on the port side of the cockpit outside the gunnels. The "smart plugs" are the ones to utilize.. When inserted, you must squeeze the side tabs of the plug and push the plug in to lock them. Unlock by again squeezing the side tabs.

The shore power ac also runs a battery charger whenever plugged in which keeps the DC batteries fully charged. That same battery-charger unit acts as an inverter (converts DC power into AC power) when the inverter rocker switch is turned on at the black panel aft of the main circuit breaker boards behind and above the navigation seat. You should confirm the inverter panel switch is off or you may drain the batteries as they convert DC power into AC power. The inverter control panel is located immediately aft of the navigation seat, is a small black panel with a single rocker switch, and several red led lights. Turn the switch off if you do not wish to use the inverter....You must use the inverter if you wish to use the computer-navigation program, as described below, and if that is the case instead of turning inverter off, turn it on and turn off the various AC circuit breakers as described below, leaving on only one AC circuit breaker, the "navcom" ac circuit breaker.

There are two AC circuit breaker panels. The one next to the navigation station has yellow LED lights, controls the refrigerator, starboard AC power, one outlet in the galley for the small electric oven, and the AC water heater. The second panel is behind the companionway stairs and controls port AC power, the galley, and the computer (and television.) ONLY THE SECOND PANEL IS CONNECTED TO INVERTER POWER.

If you wish to utilize the computer for the navigation program, you must leave or turn the inverter on as well as the circuit breaker for the ac behind the stairs labeled "navcom." Do not leave any of the other circuit breakers on...Turn them all off or you will entirely drain the house batteries since the AC/inverter will be running the electric cabin heater as well.

Thus, the steps to utilize the navcom computer are:

1. Leave/turn inverter on

2. Turn off all AC circuit breakers except navcom behind the stairs.
3. Unplug all shore power
4. Activate navigation computer program as described elsewhere in this manual.

CIRCUIT BREAKER BOARDS

With the exceptions noted below, circuit breakers for all the various electronic navigation devices and electric appliances are located at the navigation station immediately forward and starboard of the companionway steps as well as behind/above navigation table seat. The various circuit breakers for the navigation devices, lights, hailer, etc. Are all located on the DC circuit board, located immediately outboard of the navigation station and/or behind/above navigation table seat. (The red LED lights are the DC circuit breakers. The yellow LEDs are the AC circuit breakers. (There are no AC yellow LEDs for the AC panel behind companionway steps)

At times various instruments utilize the same circuit breaker. Certain electrical devices, such as high water alarms, have no circuit breakers but have fuses in their lines that go directly to the batteries, as discussed below.

All DC electrical devices are on two circuit boards to starboard as well as behind seat of navigation station with red LEDs when turned on.

The AC circuit breakers are located in two locations, one under the companionway stairs, the other to starboard of navigation station with yellow LEDs when lit. When underway, only the single AC circuit breaker under the companionway step, labeled “navcom” should be on to operate the computer using the inverter. If you are not using the navigation computer, but instead the various GPS charters, then all AC should be off.

The DC circuit breakers are self explanatory with a very few exceptions. When not in use, a breaker should be left off. Exceptions to the simple labeling found on the circuit board are as follows:

1. That the television/DVD only operattes on the inverter utilizing the navcom AC circuit breaker and the inverter when underway.
2. There is no circuit breaker for the weatherfax or SSB. Both use fuses. Both the radar and the radar detector use the same circuit breaker labeled “radar.” When underway during daylight hours, the DC breakers normally on are : Radar (also turns on radar alarm- you may want to turn off audio portion which is one of the buttons on unit itself.) Bilge pump; autohelm; VHF; GPS system; navigation instruments; entertainment system (stereo); water pressure; cabin lights; both port and starboar;d hailer At night, add running lights, steaming lights and spreader lights if appropriate.

NAVIGATION – INSTRUMENTATION

The vessel has five compasses scattered about the boat and three hand bearing compasses, five GPS, one radar, one radar detector, a navigation instrument center, three VHFs, a weatherfax, an SSB radio, a traffic receiver and transmitter, and a sattelite telephone at the navigation station. There are also three barometers. There is also a GPS in the abandon ship ditch bag, with instructions and batteries in the bag.

Navigation tools, such a parallel rulers, etc. are in the navigation table itself. One bearing compass is in the holder, port side of instrument pod, cockpit. Another is on “ready rack” outboard and near the porthole above the navigation station. Inside the navitgation table are also a distance monocular; two night vision scopes; hand held depth meter. Behind the navigation table seat is a hand held wind meter.

Manuals for operation of the various instruments are located in labeled folders in the large lower locker immediately forward of the navigation station, stb. side. Reference is made to the manuals as to actual operation. This manual will briefly describe function and matters not contained in their operational manuals.

1. **Navigation instruments** (data marine link system) provides speed, distance, depth, wind direction and speed, (both true and apparent), course to way point, speed to way point, course error as well as an electronic compass and is turned on with appropriate dc circuit breaker; both at the navigation station and in forward cabin is a multi readout unit showing most of the above information while at the pod over companionway is located the individual read outs for the helmsman. Concerning the electronic compass, said compass is several degrees off and should be checked by the most reliable compass on the vessel, the one at the binnacle.

   The depth displayed is total water depth. The vessel normally draws about 6 and a half feet. If fully loaded, the vessel draws seven feet.

   Occasionally the knot meter/log fly wheel will become jammed with seaweed or other marine life. To clear it, enter the forward cabin, remove the floorboard and remove the transducer (not the throughull for the intake for the water maker...Look for the one that has electric wires running to it. The aft most through hull is the data marine knot meter.) Note that a plug is next to it to fill the throughull while you clean the paddle...Try to keep the water to a minimum since the water maker and its electrics is there and wash them down with fresh water when completed.)

   Carefully remove the lock pin after locating the temporary plug to fill the hole while you clean the flywheel. The temporary plug lies loose in the bilge near the flywheel. *Expect much water pressure, enough to send a three foot fountain*...And do not pull the wheel out if the boat is moving since the increased pressure will make it impossible to insert the temporary plug. Clean the flywheel gently with the toothbrush in the bilge and reinsert, being careful to insert the lock pin once again.

2. **Radar-** the unit is turned on both at the DC circuit board and the push button on the lower left hand of the unit. When not actually viewing, leave the unit on standby which is activated by pushing the TX (transmit) button. To activate the unit, push the TX button again. The unit ranges from .25 To 24 miles and is visible from the cockpit, port side companionway. The radar alarm is of little use in the Bay with so much traffic thus should only be activated out the gate.

   Above the circuit breaker board is the radar detector which is a passive unit that indicates if the vessel is being scanned by other radar and the general direction of the scan. The detector automatically turns on when the radar circuit breaker is turned on. One can turn off the audio alarm

by pushing the button on the unit marked “audio.” On long ocean voyages the detector is useful and avoids use of much power since it is passive.

3. **GPS systems**- the three main units are at the navigation station above the radar, and outboard as well as behind navigation seat with one in forward cabin and one on starboard side of the companionway in the cockpit. All at the navigation table are turned on by the circuit breaker marked loran/sat and main cabin, and by the buttons on the units. The units above radar and outboard of navigation station, each marked one or two are repeated on the map tech computer program and also on the readout in the instrument pod in the cockpit. Turning the switch marked one or two selects which GPS will be so repeated.. It takes about five minutes to lock in, so do not expect the map tech program to display correctly until then.

   The fourth GPS is a Garman handheld in the forward cabin and is portable and waterproof. If you need it outside the cabin, unplug the power cord, insert batteries. A fifth unit is in the cockpit starboard of the companionway. Batteries, if needed, are in the drawer aft of the stove. The unit is waterproof.

.5. **Compasses**- compasses are located in the forward berth (port side forward);salon (hanging over the table and port bulkhead); navigation station (built in under the computer); one of the link navigation displays; one displayed on GPS 1, and in the binnacle (swung most recently and the most accurate one.)

   Hand bearing compasses are located in the ready rack above the navigation station (hockey puck type); in the pod in the cockpit; and in the galley forward bulkhead. The Stein binoculars also has a built in compass (stowed behind computer screen cabinet

6. **VHF -** there are three VHFs on board, one near the outboard seat at the navigation station, with vhf circuit breaker on the board. This vhf has the antenna at the top of the mast and automatically has a remote speaker in the cockpit. Weather stations are one and two. 16 Is the emergency channel.

   Two handheld battery vhfs are at the navigation table, one under the computer, one behind the seat, both permanently being charged in their holders.

7. **Satellite Phone** at the navigation station can phone world wide. Be sure to call any number with the US international code-e.g. 001-then area code and number. Your cell phone should work within the Bay.
8. **Night vision scopes;** it is not expected that sailing will occur at night, but if it does, under the navigation table lid are two night vision scopes (onte third generation, one forth generation, both labeled. Do not use either when light...It will damage the unit. **Thermal scope** is useful in zero light situations and is located in the forward starboard locker just before the bulkhead.
9. **Binoculars** are located in the cabinet behind the computer screen and behind the leaded glass (stabilized.)

ANCHORS

There are two anchors forward and one anchor on the stern. The main anchor is a CQR located on the starboard side of the bowsprit. The lighter cqr, immediately to port of it, is a light anchor to only be used in emergencies.

The windlass circuit breaker is in the forward cabin on the starboard wall, the very large switch above the smaller switches. The windlass should only be utilized, if possible, with the engine running since it uses much electricity. The windlass can be utilized manually, utilizing the various stainless steel handles to grind the windlass lever on the starboard side of the windlass. The handle is at the windlass with spares slid into the space between the shrouds and the gunnels on the port side.

Dropping anchor

One “hooks” an anchor, one does not just drop it. As such, the vessel should be slowly moving backwards as the anchor descends so that it will hook into the bottom. The most usual way is to release the friction brake as someone at the helm puts the vessel into reverse at minimum throttle. There is a lock cog that holds the anchor as well. Raise it with the friction brake tight and when you release the friction brake, the anchor should run free assuming it is hanging below the bowsprit as described below.

Remember: in sheltered waters, with chain, use three to five times the depth for the rode. In troubled waters, use up to ten times the depth. If rope instead of chain is used, double the length of the rode. Do not anchor closer than one hundred feet away from any other vessel or the shore...And three hundred feet is a much better distance. Remember tide dropping will lengthen your rode and tide rising will lessen it. Check your tides. Do not leave anchor watch until fifteen minutes of checking to assure the vessel is truly anchored...And if in doubt, assign a person to anchor watch .

To prepare the anchor, turn on the windlass circuit breaker, loosen the chain from the windlass, lift the anchor by hand and let it dangle below the bowsprit, making sure its thick shackle is below the rollers and under the bowsprit since otherwise it can jam. Turn the shackle sidewise to clear the roller guide. Once the anchor is dangling, insert the chain back into the windlass chain guide with the friction brake tight to stop the anchor from dropping. The cog should be left up until it is time to raise the anchor.

Chose your anchoring location and move the vessel about one hundred feet upwind and/or upcurrent from the location. With the vessel drifting or motoring slowly backwards, loosen the friction brake with the handle and let the anchor fall, using the friction brake to stop it once the rode is far enough out. Double lock it then with the cog paws located just forward of the friction brake.

A snubber line is located on the starboard netting if you wish to buffer the effect of the waves. Once you have firmly set the anchor, you may attach the snubber to the chain below the bowsprit and then let another thirty feet of chain run. Be sure to unattach the snubber when raising the anchor or it may tangle with the chain guide. Once anchored, take some extra chain from the well and cleat it around the samson posts.

In extremely choppy conditions, or as the tide changes, it may be important to stand an anchor watch. In choppy conditions, be sure to put cloth between the chain and the roller so as to minimize chafing.

Never leave the vessel unattended unless you are familiar with the anchorage or the conditions are such that the danger of dragging is absolutely minimal. Be sure to use the hand bearing compass to take

bearings on land so as to determine if dragging is occurring.

Raising the anchor

Turn on the circuit breaker in the forward berth and warm up the engine before using the windlass to raise anchor. Tighten the friction break using the handle, lower the cog paw and using the foot switch on the deck aft and starboard of the windlass, bring up the anchor to the point where you can manually reach down to the snubber line, if you used it. Disattach the snubber line when it is still below the bowsprit. Once the anchor is below the bowsprit, go forward and lift it though, turning it so that its shackle can fit through the guide. (The anchor may jam in the rolling guide if you do not manually turn it so that the shackles fit through the guide.) Once you have lifted the anchor clear, jam it into its place and take up the slack in the chain.

Light CQR anchor

The backup anchor is located to port of the main anchor and, aside from the initial ten feet, is a rope rode. While there is a divider in the anchor locker, there is a sad tendency of the two lockers to intermix chain and rope. Thus, be sure to flake the rope rode on deck before dropping the back up anchor. It may be necessary to station someone in the forward cabin to help it pull through. Access to the anchor locker is through double doors forward of the berth in the forward cabin. The anchor is light for the vessel, so only use it with an anchor watch.

Stern anchor

This small danforth is used to assist the main anchor is avoiding having the vessel drift in crowded anchorages or as an absolute emergency. It is located on the port davit with rode led to the locker under the helmseat. Flake the line before you use it and do not expect this anchor to hold the vessel in any type of sea or current.

Sea anchor

A sea anchor (very large drogue) is located in a yellow bag behind the companionway steps for use to slow the vessel in a survival storm. A manual for its use is located with all the other manuals in a folder in the lower locker forward of the navigation table, but, essentially, the anchor is deployed from the bow of the vessel, through the rollers for the anchors, tied to the windlass cleat and double tied to the mast, with perhaps two hundred feet of thick line attached.

This sea anchor is only to be used in storm conditions and only after careful reading of the manual. Its use is further discussed in the offshore portion of this manual.

End of manual (inshore)