

BENJAMIN WALTERS INSHORE OPERATIONS MANUAL 2020

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.

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. The various sections are also tabbed.

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

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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.

BASIC INFORMATION AS TO VESSEL

1. 43 feet at water line; 56 feet with bowsprit and boomkin/dinghy added. 65 foot height clearance required.
2. Draft 6.7 feet with water and fuel loaded.
3. Cutter rig Hans Christian; performance keel. ("Hans Christian Traditional 43") Maxiprop.
4. Built 1980. Rerigged 2018.
5. **Documentation number: 630444 Hull number: XSA 40043461080 Vessel number 46**
6. VHF call sign: **WHISKEY ALPHA JULIET, 8736**
7. Engine: Isuzu 52 horse-power. 5000 hours as of 2019.
8. Documented name and port: Benjamin Walters, San Francisco
9. Owner: Lee D. Stimmel
10. **Vessel Assist number** is g3050248; the telephone number is 415-399-1100.
11. Insurance Policy contacts:
12. Fuel capacity 130 gallons; Water capacity 150 gallons.
13. Ships papers are in drawer in salon below forward port cushion.
14. Manuals are in folders in locker forward of navigation station.

Predeparture Checklist

1. Using glow plug button on panel, warm up engine, holding button in for thirty seconds to warm up engine, then starting engine with slightly more than minimum throttle. Check gauges on starboard side of companionway (a maximum temperature of 190 water; a minimum of 35 lbs oil at 1500 rpms are requirements for operation). Check oil and water if the minimum is not achieved after ten minutes of running. Turn engine off immediately if oil pressure below 30 lbs or if alarm on panel goes off.
2. Close all portholes, checking especially the forward berth port side and head; tighten forward berth portholes very tightly since they are often underwater going to weather.

3. Blue Water life jackets, float coats, hats, sailing gloves and rain pants normally stowed on raft forward of vessel. Four Class One life jackets are in labeled yellow bag in dinghy on davits. Inflatable Life jackets for all non student crew and passengers stowed on raft in separate box. ALL PERSONS ON BOARD MUST WEAR FLOATATION ONCE LEAVE DOCK.
4. Safety equipment checkout (see following list).
5. All canvas off vessel but canvas on mid-cabin hatch and forward hatch;
6. Attach main halyard; check number of reefs in main and alter as necessary; uncoil all jib sheets, staysail sheets (if planning to use); take off boom breaks; put the handles fully forward on line clutches for cunningham, boom vang; mainsheet; make sure travelers attached, topping lift tight.
7. Check that first aid kit in place on cabin top just outboard companionway. (recall offshore larger first aid kit under starboard salon seat.) Check spotlight in holder inside starboard dodger, starboard side.
8. Check VHF, including both handhelds and main one at navigation station, place one handheld in holder port of helm seat. Locate vessel assist card information on key to vessel and on shelf at navigation table under main screen.
9. Turn on: Chart plotter/GPS/Radar on main screen above navigation table (you can select among the displays including dual display showing radar and chart; AIS is only displayed on full chart; navigation instruments; make sure circuit breaker on for bilge pumps; autohelm. See picture at end of this section for circuit breakers that should be on when leave dock.
10. Check hailer. Put hailer on manual. Locate backup manual handheld horns on cabin top inside dodger. Locate strobe flares on cabin top port side, inside dodger.
11. If night sail, check running lights; steaming lights; spreader lights.
12. Close drain in head sink.
13. With engine started, unplug shore power. (2 Power plugs) port of cockpit. MANUALLY TURN OFF INVERTER BEHIND NAVIGATION SEAT.
14. All dock lines normally left on dock. When we return, we rig new lines on boat.
15. Place binoculars you will find outboard of navigation table in ready rack in cockpit, behind companionway doors.
16. Give full safety talk including life sling instruction to crew and passengers. Assure each person in life jacket.
19. Brief crew on location of spare lifejackets, first aid kit, vhf, flares and smoke. Tipping helm seat forward, check for spare fuel containers and emergency tiller.
20. Brief passengers on procedures for head and holding on at all times.
21. Check for flares (electric) port side cabin top inside dodger and smoke under helm seat. In same location, 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 in reverse.
24. Stow fenders in shower stall in head.

Arrival checklist

1. Turn on engine **before** drop sails but after ensuring no lines in water. Use glow plug if engine was off more than an hour. Remember, start engine in neutral with slightly more than minimum throttle.
2. Once warmed up, drop sails, furl lines.
3. Put out fenders port side.
4. Assign who is to jump onto dock. At least two, one fore and aft.
4. Prepare shorelines and have one lookout for traffic.
5. Make sure hailer still on to warn off other vessels.
6. Have passengers and crew in appropriate position so you have clear view forward.
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 other than Alarm and Golden Rods (“G Rods”) off. Leave G Rods and Alarm on. The AC board is also under the companionway stairs and all those should be left off.
2. On DC panels (one outboard of navigation table, one above navigation seat, all red LEDs), all off except bilge pump and refrigerator. Those are left on.
3. Replace canvas. Main Halyard on starboard belaying pin and tightened.
4. Hose down entire vessel, especially woodwork.
5. Replace lifejackets and gear into boxes on forward raft. Stow all gear such as VHF and binoculars where you found it below. The winch handles may be left on deck and in cockpit.
6. Reopen ports in forward berth and head.
7. Clean up below, doing all dishes and putting all items away. Empty garbage if needed. Basket is behind companionway steps. Steps lift off. Additional plastic bags under bag. Dump garbage in dumpster at gate to O dock.
8. Check main bilge and use manual switch to empty if necessary. Remember to return it to automatic mode.
8. Set alarm. You will be briefed on location of fob to turn it on.

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 or 415 531-5935 and advise him or leave a message so he can repair. Also e mail at lstimmel@stimmel-law.com. If emergency (water running in, etc.) immediately contact persons below...see contact information below.

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 or landline

Telephone the owner Lee Stimmel at 415-392-2018. If no answer, try 415-531-5935. Text message if

no answer.

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

Paul Featherston	510-508-0151 or 510-549-0737
Aleko Frankman	925-212-1789
Tom Parfitt	510-432-8801

Note that Tom's boat is two berths north of Benjamin Walters and you might try knocking on his door: he has worked on Benjamin Walters for many years.

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 below the radar screen in the ready rack and attached to the key on the engine panel.

The membership number is **g3050248**; the telephone number is **415-399-1100**.

The vhf channel is 16 and 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 and their telephone number is taped onto the hailer panel. Try the cell first.
4. **VHF Call.** Any other vessel should assist you. Wave any article of clothing or call on vhf channel 16 which is the emergency channel. There is a VHF at the navigation station, next to the seat; two handheld VHF's are located forward of the navigation table and next to the coffee pot.
5. **Flare Kits and Smoke Cans** are under the helm seat (tilt top of seat back.) Instructions for use of flares is inside the kit and on cans. Electric strobe light flares are on racks port side of cabin top inside dodger. Both electric and traditional 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.
6. **Strobe light** at top of mast is turned on at DC circuit breaker board outboard of navigation table and also needs the three way switch turned to strobe. (The three way switch also has masthead tricolor and anchor light) See outboard panel at navigation table.
6. **Hailer** is starboard side of companionway and **air horns** are located port cabin top companionway.
7. **EPIRB** is located on davits in an automatically deployed container. The container can be opened to turn it on with instructions on the unit. Another EPIRB is on a bracket on wall behind navigation seat. Instructions are attached to the EPIRB/
8. A **Radio Homing Beacon** (SAR beacon) is located on wall port side, just before galley. Instructions are on the unit.

REMEMBER WITHIN THE SF BAY A CELL PHONE IS THE IDEAL WAY TO CALL FOR HELP FROM BOTH VESSEL ASSIST AND COAST GUARD. ONLY USE VHF CHANNEL 16 IF THE CELL SINGLE IS WEAK OR ERRATIC.

ADDITIONAL SAFETY EQUIPMENT

1. **Liferaft** 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. The raft is a six person raft. *Take the two handheld VHF's, SAR, CELL PHONES and the EPIRBS with you when boarding raft.* See above for their locations. A large medical kit is underneath salon seats starboard side and a smaller medical kit on the cabin top port side, next to companionway. Take them.

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. **Lifejacket spares** are in the bags in the dinghy.
3. The **Man over board Packages (not Lifeslings)** are launched from starboard davit and an inflatable overboard package and pole with strobe is on the port davit. Throw both packages over if needed. **Throwing lines** are in two bags so marked on the boomkin rails
4. There are two **life slings** and are deployed off the port or starboard rear pulpit depending on location of person in water. (There are two on board, one on each side of rear pulpit.) 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 and another is permanently attached to aft hull, port side, and may be deployed from person in water. A **longer ladder** is stowed just fwd. of the dodger and can hang from the side of the boat. Remember to tie it on if using it since it can shift.
5. **Boat hooks** are stowed on cabin top, on starboard forward, one port just forward of dodger.
6. **Tow line** is kept under seat at navigation table. If Benjamin Walters is being towed, attach the line directly to the large cleat on the windlass running line through anchor rollers. If towing another vessel note that it will require some care since the davits and dinghies can get in the way. 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 bag, "first aid." The **main medical kit** is kept under salon seat starboard side, with red crosses marking it. **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." In the head in the cabinet behind the sink are dressings and antiseptic for minor cuts. **Shock unit for heart attack (AED)** located in forward berth, starboard side in a red case. Directions in unit.
8. **Bilge Pumps** There are two electric, and two manual bilge pumps. There is also a folding bucket under the floor boards forward of the companionway steps and a larger bucket in the dinghy on davits, if all pumps fail.
 - A) The **electric bilge pumps** are 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 flags in starboard rear cabin. The plate key is in rack on cabin top, just starboard of companionway.
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; also, in the cockpit, to port of helm seat, a bright led light will go on. In the forward cabin, to starboard, a red pilot light will go on, in main salon, aft port a fourth red pilot light will go and in port rear cabin another red LED will light. All these lights stay on as long as the bilge pump runs. Note that the bilge pump goes on occasionally without emergency...But if it stays on for three minutes or more, check bilge immediately.
 - 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 cabin if the water level under the forward cabin floor boards reaches a critical level. The warning light is in forward cabin 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. A three way switch on the navigation panel outboard also must be adjusted (it has three positions, tricolor, anchor and strobe. Pick strobe.)
11. **Propane gas alarm** is located on at bottom panel under navigation table, starboard side. 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 and air out. Check propane system to assure no leak. Propane gas is heavier than air and extremely explosive. It will remain in bilge even if the rest of the cabin is clear so avoid all open flame until sure bilge is clear.
12. **Carbon monoxide alarms** are located in forward cabin behind door, in galley floor level and in port rear cabin near floor. Each normally had green LED lit and will move from yellow to red LED if carbon monoxide 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 cannot tell you are being poisoned until you are ready to collapse. CO has no smell or side effects until it is too late.
13. **Smoke alarm** are two units, both in central salon, on ceiling, starboard side. One is standard household type, the other connected to the overall boat alarm systems. Both give off high beeping warning.

14. **Burglar alarm** is a security unit using motion detectors in main cabin. To turn off alarm use remote device normally stowed in hand compass holder on inside of starboard dodger. Use the same remote device to turn on the alarm when leaving. Remember to replace key.
15. **Emergency Siren**: sounds when the plunger switch on the cabin top port of companionway marked "emergency" is pulled. This is to wake crew if their immediate attention is required. Turn off by pushing in plunger.
16. **Fire extinguishers** are located in the following areas: in hanging locker in main cabin across from head; in galley outboard of wine glass cabinet; two large units is behind companionway steps on port side. Halon extinguisher in engine compartment. A back up unit is under floor boards in galley.
17. **Halon automatic fire extinguisher** is in the engine compartment and automatically deploys if there is a fire in the compartment.
18. **Binoculars** and **Night Vision Scopes** are located at navigation station; two binoculars outboard, rack, one night vision under top of table and one above to chart plotter-radar screen.
19. **Bosun's chair** is located under navigation table seat; lift off cushion and wooden cover.
20. **Cable cutters** are located under navigation table seat in a green canvas case; they are hydraulic and extremely powerful
21. **Hack saws and blades; duct tape**: are located in engine compartment, in basket on angled door. Further blades are in the box marked "rigging" forward of the dodger.
22. **Spotlight** is located on bracket on base of boom gallows inside dodger, right side; another in holder before galley, port side.
23. **Flashlights** are located throughout vessel. There are lights on wall behind navigation table; inserted into shelf on cabin top starboard of companionway and in forward cabin, starboard side. There is also one on case for radar unit. Head light units in locker to port on companionway steps.
24. **Personal epirbs** when not attached to harnesses are stored at feet near navigation station. **Overboard alarm wrist bands** are stowed in ready rack outboard at navigation table. Get training in how to use them.
25. **Hand bearing compass** (2), one located above navigation table, starboard side, one in bracket on forward end of chart plotter case.
26. **Night vision scopes** in navigation table (lift top) and above chart plotter. **Thermal vision scope** in navigation table and another unit outboard of table.
27. **Wooden plugs** to stop leaks are located in basket in engine compartment, pull out angled bulkhead door; plugs are also taped or tied to the various through hulls in the vessel. **Soft Plastic plugs** that can fit any hole located behind companion way steps under AC circuit breaker panel.
28. **Tools** are located behind cushions starboard main salon in large yellow tool box; under seats starboard main salon and above engine, forward and inboard.
29. **Spare shackles, pins, etc.** Are located in plastic box under top part of helm seat (lift top of helm seat, tilting it towards the aft) and a larger box of such spares is located under helm seat itself (tilt the entire seat forward. **Spare blocks** and fittings in port box at mast.
30. **Key to access plates** are stowed in box port side cabin top next to companionway. **Fuel fill key** is in box at foot of helm seat.

32. **Additional lines** are located on various belaying pins at mast and on midship belaying pins.
33. **Spare jacklines** are located on raft forward of boat.
34. **Spare foghorns** (handheld) are located in box behind rear pulpit (white wooden box on rail.) and at companionway top port side.
35. **Windlass switch** is located in forward cabin, starboard side (The very large circuit breaker midway up starboard bulkhead just forward of hanging locker.) Note there are two switches that need to be turned on at the circuit breaker and that if the breaker pops (the red button) you push it in to reset. On deck at the windlass, the windlass deck switch is a foot pedal just to starboard aft of windlass. The windlass handle is on windlass platform with a spare handle under windlass step, starboard side.
36. **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. Three hundred feet of rode. Spare rode is located in main cabin under midship floorboards.
37. **Running lights** are turned on at main circuit breaker panel to starboard of navigation station and are labeled. There are three independent series of running lights, the normally used ones with the switch directly above the steaming light circuit breaker. The masthead light has a tricolor turned on at navigation table using the circuit break and the three way switch so labeled outboard navigation table. Use the tricolor switch on main circuit board. Finally, an emergency running light forward 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.
38. **Wood for hull repairs** is located under main salon cushions, port side. **Collision mat** is under helm seat.
39. **Spare hoses** are located under salon seat, port side, immediately forward of engine along with **spare belts** for engine, thermostat and impeller for engine. **Spare oil and transmission fluid** is under floor boards midships, inboard of engine and additional oil and fluid is under salon seat port side, forward before door to head. **Water fill for engine** is via a small tank under the port pilot berth behind the port salon seat. **Hose clamps** are in plastic bag on shelf above engine in engine compartment.
40. **Turn off valves for fuel and water** located under floor boards mid ships next 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. Before starting if cold, use the glow plug button and push in for thirty seconds 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. Make sure no lines in the water before starting the engine.
 - A) preheat is not necessary after the engine has run for five minutes or if the engine has been run within the hour.
 - 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 and the boat still tied to dock before leaving the dock.
 - D) You should normally check oil level and water level only once the engine has run for ten minutes. If the engine has not been used for a week or if find oil in the bilge, check the oil via dipstick located inboard mid engine. You will have to pull the aft salon seat forward to get access to the dipstick.

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 all 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.

Operating the engine

1. The throttle and gearshift levers are located on the binnacle. Gear shift is on the port side. 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.
2. The control panel is on the starboard side of the companionway. It has on it the ignition switch-key; glow plug; 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. Assuming key is in neutral, if alarm sounds turn off engine the moment such alarm sounds or engine damage may occur. Either add oil or water or call Vessel Assist.

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 twenty 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 and check water cooling system. Note that the cooling system is a heat exchanger and salt water is pumped into the system and out of the boat on port aft quarter when engine is on. Once engine on, look aft to port and down and you should see water being pumped out regularly.
- 1) Low Water: 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. It is a much smaller tank with a cap that is similar to the radiator cap in an automobile.) Slowly add fresh cool water from the water containers stowed near the fill or from the sink. You can replenish the containers if necessary from fresh water in the sink.
 - 2) Heat Exchanger. 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, with the engine on, 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. Note the failure may be the impeller not working, blockage of the water cooling system, or loose or broken water pump belt.)

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 is under the floorboards mid cabin just starboard of the engine, and more oil is under settee, port side main salon, fwd side of the settee and 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. To access, 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. Transmission fluid is in the same location 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. You will need a funnel to fill the transmission reservoir, said funnel on shelf above engine.

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 no electrical power and advise as the emergency starter battery location..
 - A. First, make sure engine is in neutral. Second, make sure that “stop toggle cable” forward of sink 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. If 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, in the locker, mid ships starboard side (under the brandy bottle) on a shelf which slides out is an emergency starter battery which can be connected to the starter battery terminals in the battery compartment which is under the berth in the rear port cabin. Connect the emergency battery cables to the starter battery and try to start again. If that still fails, it is time for Vessel Assist.

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 floorboards mid cabin starboard of engine with engine oil and also under port settee forward of table (do not confuse with oil which is stored in the same locations.) 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 is connected to the screw top of the fill hole. Dipstick is located on port side of transmission housing. Check level and if low, use funnel above engine on shelf to fill.
- 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 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 hour meter on tach. 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 helm seat.** 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 into the engine. Open the engine compartment. On the starboard side and you will find a small pump under a plastic cover directly on the lower right side of the engine. The set screws for the injectors are easily accessible and must be carefully opened slightly with a screw drive, one at a time, to clear the air. Pump the small pump a few times until the air stops coming out of the injectors and fuel comes out, then close the set screw, move to the next one and repeat. Once done, the engine should start.

Spare engine parts, tools

Spare fuel filters are in the basket on the inside of the door on the starboard side of the engine. Additional filters are stowed under settee port side forward, near oil, including oil filters. 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. Socket and wrench sets are on shelf above engine, forward. You will have to tilt salon seat forward to get access to them. Tool Box is behind cushion in starboard side salon.

OPERATION UNDER SAIL

1. **Winch handles** are kept in holders throughout the vessel; there are two holders aft of the jib sheet winches in the gunnels; two on top of the cockpit in holders on boom gallows; one holder on port and starboard side of mast.

2. **Sails Operation:**

A.) Mainsail: the mainsail is raised from the starboard mast winch, halyard shackle normally stowed on the starboard outboard belaying pin rail. Mainsail is a green line with white stripes.

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:

Boom vang (line stopper on starboard side of companionway, white line with red stripes.)

Mainsheet (line stopper on port side of companionway, thick green line with white stripes.)

Cunningham (line stopper on starboard side of companionway, white line with green stripes.)

Dutchman/topping lift is controlled by line stopper, starboard cabintop 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 line, striped white.

Reefing Lines (3) 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.

Boom brakes must be released. They are the black 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, pull tight on the reefing line attached to the clew, which is the blue-white colored (first reef) or white line (second reef) on the starboard side of the boom; port side of boom for third reef (blue line), cleat it, then attach the reefing ring to the hook at the forward end of the boom (the tack ring) and then raise the head again until the reefing ring is tight. White with blue stripes line is first reef. White line is second reef. Blue line on port side of boom is third reef. Tighten unused reefing lines and topping lift after putting in reef and coil all lines.

To accomplish the above requires release of the mainsheet and letting the entire sail luff; make sure boom vang and boom breaks are also off...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. Boom breaks off, boom vang off.
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).
4. Pull tight on reefing line, using reef winch on boom if necessary, cleat it.
5. Attach appropriate reef ring at tack around the reefing hook.
6. Raise halyard again until sail taut.
7. Adjust mainsheet as required. Boom vang, boom breaks adjusted.
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 blue reefing line rather than the white and blue 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

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 breaks, loosen topping lift.
3. Lower halyard enough to pull reefing ring off hook.
4. Uncleat clew reefing line and make sure it runs free. 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, boom breaks, 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.
3. Loosen main halyard and allow sail to drop. If necessary, climb mast steps a little to pull down on the head. Note that unless the topping lift was loosened, even with the main down the boom is not yet in the boom crutch.
4. Keeping vessel into the wind, tighten mainsheet as much as possible and 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 coil boom vang, cunningham and boom breaks.

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 (thick, teal line) with the staysail furling line (a dark blue line) which is stowed in a coil behind helm seat. 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 or the furl drum while unfurling and that it slowly unfurls.

To furl the jib, let the sail luff gently and haul in on the furling line. In any but the lightest wind you may wish to use the dedicated 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.

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 is 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 medium to 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 foot of the jib indicating reefing positions. 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

Since the vessel has roller furling, 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.

Note that the sheets for the staysail are found under the dodger and go through line stoppers.

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 (genniker)

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. The staysail is usually used alone with no jib. Genniker is used without jib. Trysail is normally used alone. In usual storm weather, triple reefed main and staysail is typically used.

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

always require a significantly reefed jib.

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.

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 three telephone jack plugs in under dodger on cabin top next to first aid kit and are numbered to correspond with the plugs on the boat. All plugs are “twist-lock,” e.g. They must be twisted as pulled to unlock them. When reinserted, you must twist after you push them in to lock them.

The shore power ac also runs a battery charger whenever plugged in which keeps The dc batteries fully charged. That same battery-charger unit is automatically an inverter (converts dc power into ac power) when unplugged so before unplugging shore power you must turn the inverter panel switch to off or you will drain the batteries as they convert dc power into ac power. The 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 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.)

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 are located at the navigation station immediately forward and starboard of the companionway steps as well as behind/above nav. 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 nav. Seat. (The red led lights are the dc circuit breakers. The Yellow led are the ac circuit breakers. There are no ac led's for 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, 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. All others 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. Remember that the television/vcr only runs 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 starboard 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, four gpss, one radar, one radar detector, a data marine link navigation instrument center, three vhfs, a weatherfax, an ssb radio, and a cellular telephone at the navigation station. A sextant is behind the companionway steps, with relevant reference works for the sextant under the starboard salon seats, main cabin.

One of the four gpss is an emergency battery gps in the abandon ship box port cabin top forward of the dodger, with instructions and batteries in the box.

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” above the navigation station and is the data scope. Directions for the data scope are pasted on the underside of the lifting lid of the navigation table.

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. The 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 (ignoring the throughhull for the intake for the water maker...Look for the one that has electric wires running to it. The aft most throughhull is the data marine knot meter.) Note that a plug is next to it to fill the throughhull 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 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."

3. GPS systems the main units are at the navigation station above the radar, and outboard as well and both are turned on by the circuit breaker marked loran/sat, and by the buttons on the units. These units, each marked one or two are repeated on the maptech computer program and also on the readout in the instrument pod...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 maptech program to display correctly until then.

The third gps is a garman handheld in the ready rack above the navigation table. Batteries, if needed, are in the drawer aft of the stove. The unit is waterproof.

The fourth GPS is the unit in the abandon ship bag, another garmin, and should not be used except in an emergency.

4. Loran the loran was removed with the boat and replaced with the chart holding gps on the outboard wall of the Navigation table.
5. Compasses compasses are located in the forward berth (port side); salon (hanging over the table); navigation station (built in under the computer); one of the link navigation displays; 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 (data scope); in the navigation station itself, under the lid; and one of the binoculars has a built in compass (at your feet as you sit at the navigation station.) There is one last hand bearing compass in the navigation instrument pod, port

6. VHFS 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. Cellular telephone at the navigation station is the cellular phone which is quite capable of telephoning any number while within the bay. The telephone is plugged into the batteries (dc circuit breaker marked cellular above helmseat) but it can run on its own batteries when unplugged. The telephone is linked to the 415 area code, so a call to the east bay requires "1-510..." Before the number called. The boat's cell phone number is 415-816-6616.
8. Night vision scopes; binoculars it is not expected that sailing will occur at night, but if it does, under the navigation table lid is a night vision scope (itt). Do not use it in light...It will damage the unit. Binoculars are located at your feet when sitting at the navigation station and a non waterproof but more powerful "electronically stabilized" pair is in the navigation station above the computer screen. Use the powerful set out of spray and rain.

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 break as someone at the helm puts the vessel into reverse at minimum throttle.

Remember: in sheltered waters, with chain, use 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 sideways 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.

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 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, and using the foot switch on the deck aft and starboard of the windlass, bring up the anchor to the point where you can reach 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. Remember to put the cap on the chain hause to the locker.

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)