

Conquest 1200 Operations Manual



Meridian

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Operations manual

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Below-decks layout

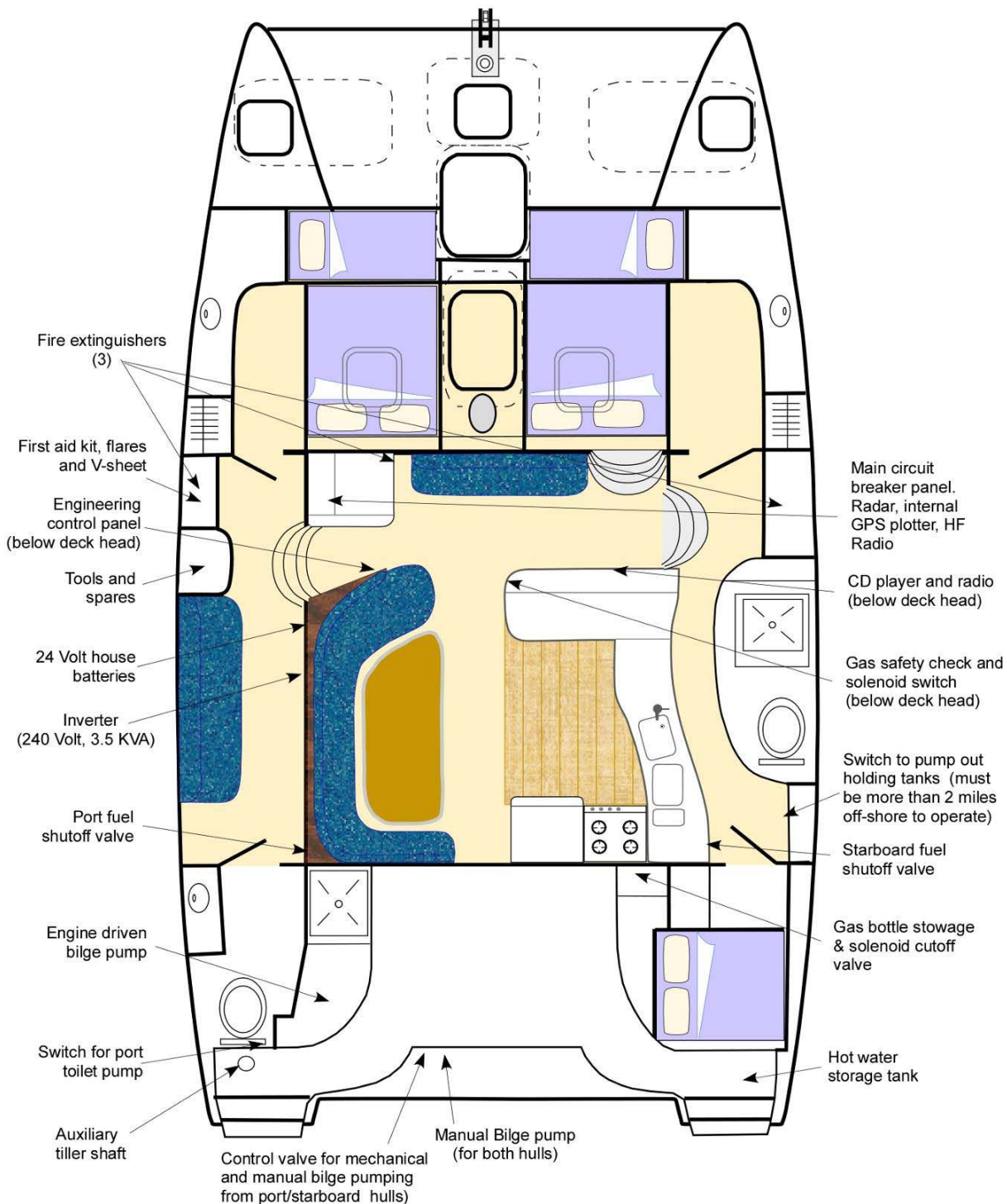


Figure 1. Schematic layout below decks showing general accommodation and location of switches, control panels, utilities etc.

1. Safety

1.1 Footwear

- You must wear white, non-slip sole shoes at ALL times while on board (i.e. boating deck shoes are designed for this purpose & can be purchased readily. White runners/training shoes might not provide sufficient non-skid on boat surfaces).
- Serious injury may result from failure to wear appropriate non-skid soles because of wet surfaces and continuous motion of boat.

1.2 Spa Safety

- Spa must NOT be used unless boat is at anchor.
- Spa must be EMPTIED before sailing or cruising - remove centre plug.
- Spa lid must be CLOSED at all times when not in use.
- Operation of spa must be supervised by an ADULT.
- It is possible to OVERHEAT the spa water - monitor & check before entering.
- No one should exceed 20 MINUTES of continuous use in the spa.
- Refer to operational instructions (paragraph 7.3) in this manual.

1.3 Saloon and cockpit Roof

This area of the boat does not have safety rails and therefore is NOT to be used either at anchor or when sailing.

1.4 Rear Safety Nets

There are 2 safety nets provided for the Starboard and Port rear stairs

- Safety nets must be correctly attached at all times when stairways are not in use.
- Safety nets are clearly marked STARBOARD or PORT, TOP & BOTTOM, with 7 attachment points on each net.
- Ensure labels face to the front of the boat when attaching to ensure correct net and correct side of boat.
- When not in use, completely remove safety nets and store in marked cupboard to prevent injury.

1.5 Swimming

Swimming is not permitted around boat when motors are running, including when charging the battery bank with the engines running in idle.

WARNING: If forward or reverse gears are selected at idle, swimmers within vicinity of the propellers risk serious injury.

Remember, it is not possible for the operator of the engines to see swimmers under the boat and/or in the vicinity of the propellers.

1.6 Hatches

All storm ports (2 on each side of the boat) and the forward deck hatches over the forward cabins are to be closed at all times when boat is sailing/cruising. Rear hatches should be closed as deemed necessary.

2 Emergency procedures & Equipment

2.1 Fire

2.1.1 Power & Gas

In the event of any fire:

- TURN POWER OFF at Battery Master Switch in the locker with the 24V house batteries. This will turn AC & DC power off when at sea only.
- Note: If the vessel is connected to shore AC power, you must also turn the AC circuit breaker off on the Power Conversion - Location: In middle cupboard of Port hull.
- TURN GAS OFF at Gas detector (overhead console over saloon bench) as well as at the Gas bottle (Starboard cupboard immediately outside entry doors to cockpit).

2.1.2 Fire Extinguishers & Fire Blanket

Assess whether the fire can be extinguished with either the Fire Blanket or the Fire Extinguisher - access the nearest suitable choice. Proceed to either extinguish fire or abandon vessel via marked exits.

Location:

Fire Blanket Above galley sink

Fire Extinguishers (3) are located at:

- Front panel of navigation centre
- Starboard cupboard near internal stairs
- Port cupboard near the internal stairs

2.1.3 Galley Fire

Follow instructions under headings:

1. Power & Gas (paragraph 2. 1. 1)
2. Fire extinguishers & Fire Blanket (paragraph 2.1.2)
3. Ensure all persons aboard are safe and unharmed.
4. When fire is extinguished and it is safe to do so, restore the AC power and radio back to TropicSail

2.1.4 Electrical Fire

Follow instructions under headings:

1. Power & Gas (paragraph 2. 1. 1)
2. Fire extinguishers & Fire Blanket (paragraph 2.1.2)
3. Ensure all persons aboard are safe and unharmed.
4. When fire is extinguished and it is safe to do so, restore the AC power and radio back to TropicSail.

2.1.5 Engine Fire

DO NOT OPEN THE ENGINE COMPARTMENT HATCHES or DOORS!

SHUTDOWN the engines using the EMERGENCY STOP BUTTONS.

- Access the large fire extinguisher from either hull cupboard.
- Break the plastic seal on the fire port of the engine cover from inside either the Port hull aft shower cabin or the Starboard aft cabin.
- EMPTY the entire contents of the fire extinguisher through the fire port.
- CLOSE the engine ventilation valves:
 - Right engine: 1. right hand side of boat below sheet winch

- 2. under the aft seat locker.
- Left engine: 1. left hand side of boat below sheet winch
- 2. under the aft seat locker.
- Access the second large fire extinguisher, open the engine compartment and if necessary, continue to extinguish any remaining signs of existing fire.
- Contact TropicSail via radio and proceed with any further instructions.

2.2 First Aid Kit

2.2.1 Type

Scale F or higher to meet Uniform Shipping Laws Code.

2.2.2 Location

Bottom of Port hull cupboard opposite internal staircase from saloon.

2.2.3 Contents

TOP TRAY:

1 First Aid Hints booklet, 1 pair scissors, 1 splinter remover, 1 lancet, 2 thermometers, 12 assorted safety pins, 6 Betadine ointment sachets, tube Amethocaine 1%, 50 assorted bandaids (1 box), 4 medicine measures/cups.

BOTTOM COMPARTMENT:

2 x 100 ml Decongestant cough elixer, 2 x 15 ml betadine antiseptic liquid, 2 x 35g. antiseptic cream, 6 sterile tegaderm waterproof dressings, 10 assorted steri-strips, 3 rolls strapping tape.

2.3 Life Jackets

2.3.1 Type

RFD coastal life jacket. Body weight 35 kg and above (Survival lights are fitted). There should be 12 on board.

2.3.2 Location

- Overhead lockers at rear of cockpit over BBQ (2).
- Seat storage under front windscreen in the central saloon (10).

2.3.3 Operation & Use

- Refer to donning & operating instructions on each jacket.
- The survival lights fitted to each jacket are activated by salt water after the ripcord on the light battery is pulled.
- There is also a black plastic whistle attached to the light to attract attention.
- The life jackets are for emergency use only.
- Under NO circumstances are the lifejackets to be used for leisure swimming.



Figure 2.1 Life rings secured on hand rails

2.4 Life Buoy with light & Life Buoy with rope.

2.4.1 Location

- A life buoy (ring) with rope lanyard is attached to the life rails on the aft port side of the deck. The rope attached is for easy retrieval.
- A life buoy (ring) with light is attached to the life rails on the aft starboard side of the deck. The light for night operation is self activated when it is removed from the holding bracket.
- Refer instructions supplied by manufacturer.
- Note: These life rings are survival gear for use in emergency only. They are NOT to be used for leisure swimming

2.5 EPIRB Rescue Beacon

2.5.1 Type - Salcom MRB4

2.5.2 Location - Main saloon at the bottom of lounge seating just inside, on the port side of the cockpit entry door.

2.5.3 Operation

Release antenna, tether to a person if leaving the vessel. Refer manufacturers instructions on the EPIRB for more details.

Note: Unauthorised or non-emergency activation of this device is illegal and may incur severe penalties.



Figure 2.2 EPIRB stowed just inside saloon at cockpit entrance

2.6 Life Raft

2.6.1 Type - RFD life raft / coastal - 10 person

2.6.2 Location

On the roof of the cockpit over the stern.

2.6.3 Operation

In an emergency, the life raft may be deployed manually by releasing the deck attachment and throwing the unit overboard. However, the life raft is fitted with a hydrostatic release which senses water pressure to ensure automatic release should the vessel overturn or sink before it can be deployed manually. The life raft is fitted with emergency supplies of water, nutritional supplements, first aid etc.

2.7 Bilge Pumping Systems

2.7.1 Electric Bilge Pumps

2.7.1.1 Location

The switch to control the electro-mechanical bilge pump (driven by the port engine) is located on the engineering panel, which is located over the port staircase in the saloon near the navigation centre.



Figure 2.3 Engineering control panel with autopilot switch, vhf radio switch, solar panel charging meter, and bilge-pumping control switches.

2.7.1.2 Operating Instructions

There is a set of controls for the port and starboard sides. The switches that control the pumps are marked 'Automatic', 'Off' and 'Manual'.

1. Automatic position: The pump will switch on and off automatically as required to maintain water levels within the bilges.
2. Off position: It is not recommended to leave the pumps in the 'Off' position when the boat is unattended. Note: If the water level rises to the high bilge level, the alarm and pump is activated.
3. Manual position: You must hold the switch in the 'Manual' position to activate the pump. The pump is running when indicated on the above screen.

The electric bilge panel is also fitted with a 'High Bilge Alarm' which is always armed irrespective of the position of the switches. If the water rises to the float level the alarm will automatically activate and simultaneously start the pump as indicated on the appropriated bilge pump screen. In this case the alarm will sound continuously until the water level has been lowered to the normal level.

2.7.2 Engine Driven Bilge Pump

2.7.2.1 Location: permanently mounted to port engine in port engine compartment. The pump is driven by an electric clutch attached to the motor, which must be running to operate the pump.

2.7.2.2 Operating Instructions

- Select Starboard or Port Hull as required:
- Operate selector valve, which is located in locker under rear cockpit seat.
To pump starboard hull- Turn valve to the left,
Port - Turn valve to the Right
- Run port motor at 1200-1500 R.P.M.
- Turn pump control switch ON. This is located on the engineering panel console over port staircase in saloon, near the navigation centre.
- Note: When switch is in ON position there is a warning horn that will sound constantly when pump is engaged.
- Pump to remove water as necessary & then turn engine powered pump switch OFF.
- Return selector valve to OFF (vertical) position.



Figure 2.4 Locker under stern cockpit seat with manual bilge pump bilge and pump selector valves



Figure 2.5 Bilge pump valve levers to select port or starboard hulls for hand bilge pump (shown inside locker at back) and mechanical bilge pump.

2.7.3 Manual Bilge Pump

2.7.3.1 Location

Under rear cockpit seat (Operating instructions on display with locker open). The single pump can extract water from either hull depending on valve selection (see below).

2.7.3.2 Operating Instructions

- When selector valve is vertical - Pump is OFF (not connected to either hull).

- Select Starboard or Port hull as required:
Starboard - turn valve to the Left, Port - turn valve to the Right
- Insert pump handle and move from left to right to remove water as required from selected hull.
- Return selector valve to OFF position.
- Return pump handle to brackets.

2.8 Flares & V Sheet

2.8.1 Location

In the lower cupboard, Port hull, opposite the internal staircase (as you come down from the saloon).

2.8.2 Operation

Flares - Select and remove the appropriate flare(s) from distress flare container and follow the diagrammatic instructions for the selected flare (see Figure).

Note: the discharge of flares in anything but an emergency situation to attract assistance is unlawful and can attract significant penalties.

V-Sheet - Unfold and display as per enclosed instructions.

2.9 Tools and Spare Parts

2.9.1 Location

In the upper cupboard, Port hull, opposite the internal staircase (as you come down from the saloon).

2.9.2 Contents

There are several tools supplied in the tool kit to be used for emergency□repairs only:

- Spanners, pliers, socket set, screwdrivers etc.
- assortment of hose clamps
- assortment of plastic ties
- insulation tape
- water pump impellers
- diesel fuel filters
- fuses
- V-belts

2.10 Emergency Tiller & Rudder Lock

2.10.1 Location

A stainless steel tube, bent at a right angle, is located in the locker under the forward central saloon seat (Same location as life Jackets)

2.10.2 Operation

Remove from stored location. Outside the saloon, on the port aft deck, open rear exit hatch located in the rear bathroom and remove the inspection cover. From outside the exit hatch insert and locate the emergency tiller shaft. Lock the emergency tiller in position.

Method 1 Operate from outside the exit hatch to steer the boat. (? Need to disconnect the hydraulic drive ram).

Method 2 Insert locking bolt to lock the rudders in the mid-ship position. Then to steer the boat use left and right engine throttles at the varying power settings to steer the boat as required. For example to turn the boat to the right, move the left hand throttle forward and the right hand throttle slightly backwards and the boat will turn to the right.

3 Engine Management

The vessel is driven by two, 45 HP Volvo Penta diesel engines with 120S-D Sail Drives.
Speed under power: ~7 knots @ 2200 rpm

** FOR GOOD ENGINE MANAGEMENT ENSURE THAT:

- COLD ENGINES ARE WARMED UP (800-1000 rpm) FOR A MINIMUM OF 3 MINUTES BEFORE SELECTING GEARS
- BEFORE TURNING ENGINES OFF, ALLOW TO IDLE FOR 3 MINUTES



Figure 3.1 Port engine showing positions to check engine oil level (a), gearbox oil level (b) and cooling fluid (c)

3.1 Starting Procedure:

Before starting, check engine oil, gearbox oil and cooling fluid levels on each engine (see Figure 3.1). This routine should be performed at least daily. Spare oils and cooling fluid are located in the toolbox locker (port side companionway).

1 - Push button at base of gear levers (Figure 3.2.d) to disconnect the gears and move gear lever forward 1/3 and set the throttle. The engines are fitted with 'in-gear protection' and will not start while in gear.

2. Insert the key in the ignition switch (Figure 3.2.b). Turn key to the "I" position. The three warning lamps come on and can be checked.

3. To test that the acoustic alarm is operating, press the "Alarm Test" button on the engine control panel.

4. Turn the key to the "W" position. The indicator light comes on and the glow plugs are connected to pre-heat the engine. Let the glow plugs remain activated for 10 seconds (max. 30 seconds).

IMPORTANT: Always pre-heat the engine (even when it is at operating temperature).

5. Turn the key to position 'm' to start. Release the key as soon as the engine has started (check the tachometer), the key will automatically spring back to the 'i' position. If the engine did not start, the key must first be turned to the "0" position before trying again.

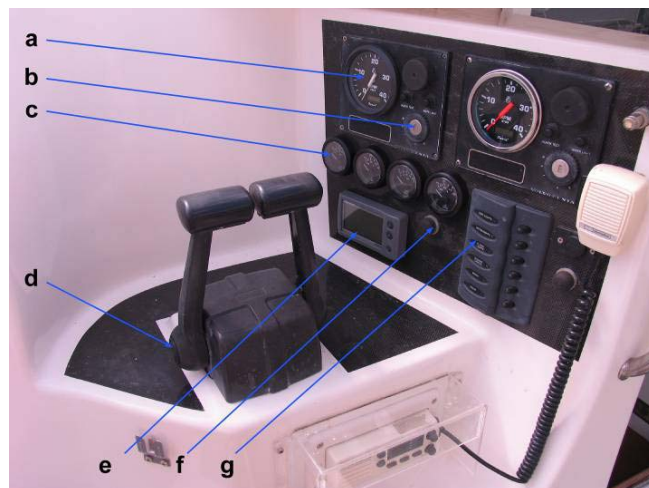


Figure 3.2 Engine control panel showing tachometers (a); key start switches (b); oil pressure and temperature gauges (c); gear isolating buttons at base of gear levers (d); depth indicator and log (e); stop buttons (f) and instrument switches (g)

* **IMPORTANT:** If the starter motor is engaged for its maximum engagement time (20-10 seconds) let it cool down for five minutes before trying to start the engine again.

6. Warm up the engine at low speed and low load.

IMPORTANT: Do not race the engine while it is cold.

7. Check engine exhaust for water - It should be 'gurgling' at idle and 'spraying' at higher rpm. The exhaust and water outlets are located on the outboard aft of each hull, just above the water level.

8. The gear lever can now be brought back to neutral position - ensure button clicks into position ready to be put into gear.

IMPORTANT: When putting engine into gear move the gear lever slowly but firmly. When changing from forward to reverse (or *vice versa*), hold the throttle lever in neutral (vertical) for a few seconds to allow gears to stop revolving before engaging required gear.

3.2 Emergency Starting Procedure

In the event of either starting battery not being able to start the engine, there is an emergency starting button which parallels both starting batteries. Note however that you must have BOTH engine battery master switches in the 'On' position (they would normally be this way).

3.2.1 Location

The push-button switch is located in the cupboard at the forward, port side of the cockpit just inboard of the engine control panel (Figure 3.3).

3.2.2 Operation

Start the motor which has the 'good' battery and set the rpm at 1500 revs. Press and hold the 'Emergency Start' button (Figure 3.3.a) while you turn the key on for the other engine, first to the 'Preheat' position (anti-clockwise) and then to the 'Start' position. When the engine is running, release the 'Emergency Start' button, check that the alternator light is not on the motor that had the 'flat' battery. After the motor has been running for approximately 30 minutes, the battery should be fully charged.

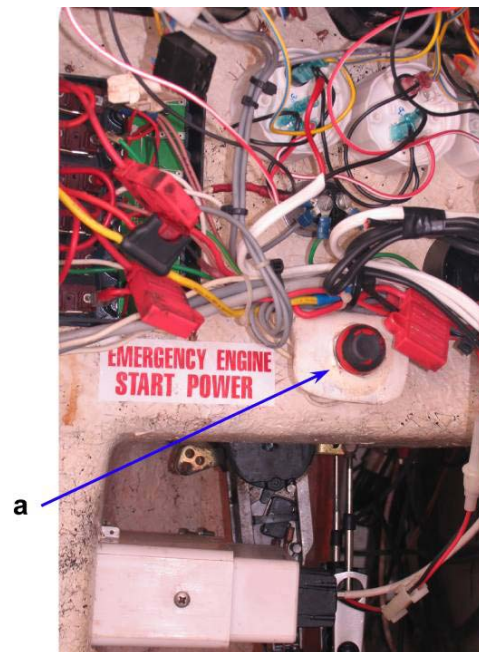


Figure 3.3 reverse side of engine instrument panel. Push-button to parallel engine start batteries is shown at 'a'.

3.3 Stop Buttons

3.3.1 Location: These are rubber-covered push buttons on the Engine control panel, located below and to the right of the tachometers (Figure 3.2.f). There are two of these buttons - the other is near the microphone. (They control the solenoid cut-off valves mounted on the motors, see Figure 3.1 just to right of oil dip stick).

3.3.2 Operation: Push & hold the stop buttons for 2-4 seconds to stop selected motor.

Emergency Stopping: Diesel engines can always be stopped by turning off the fuel. Each engine has a ball valve to close off the fuel supply at the base of their respective fuel tanks. These are accessed through the cupboards at the inboard, aft end of the companionways in each hull.

Note: The emergency stop buttons located on the switch panel above the chart table have been disconnected (due to abuse by children)

Warning: The battery isolator switch for each motor must be in the ON position for the emergency stop buttons to activate. - DISABLED

3.4 Checking Instruments

The engines have been fitted with oil pressure and temperature gauges, which are located on the engine instrument panel (below the tachometers – see Figure 3.2.c). Check the instruments and warning display directly after starting the engine and then at regular intervals while driving the boat. Stop the engine if there is an abnormal reading, or any warning lamp comes on, or an alarm sounds.

3.5 Fuel Systems

3.5.1 Location

Port - Fuel capacity 300 litres. Located under the main saloon settee and accessible thru the aft cupboard in the port hull companionway to the head, where the fuel shut-off valve is located.
Starboard - Fuel capacity 300 litres. The fuel shut off valve is located in the locker on the right hand side of the companionway just before entering the starboard aft cabin.



Figure 3.3 Diesel fuel tank in locker at aft end of port companionway showing fuel shut off valve.

3.5.2 Operation

The 'Fuel Shut Off Valve' is operated by turning the fuel valve to the 'On' or 'Off' position.

Note: The fuel valve can be left in the 'On' position for all normal operations and should only be turned off in an emergency such as fire or when the boat is to be left unattended for long periods (several days or more).

3.6 Sailing instruments

3.6.1 Wind Indicator.

A Raymarine ST60 relative wind speed and direction sailing instrument is located at the helm position (figure 3.5.c).

For detailed instructions, refer to the Reference Manual located in the Reference Manuals folder.

3.6.2 Depth Indicator and log

A Raymarine ST40 bi-data sailing instrument is located on the engine control panel (below the tachometers – see figure 3.2.e above). This unit provides readings of boat speed, log and depth below the hull (add half a meter to get water depth). For detailed instructions, refer to the Reference Manual located in the Reference Manuals folder.

3.6.3 GPS chart plotter

A Navman Tracker 5600 GPS unit and chart plotter is located at the helm position (figure 3.5.a) just outboard of the steering compass. This plotter is fitted with electronic charts of north-east Australia and provides full navigation support for the area of operation of the vessel out of Townsville. For detailed instructions, refer to the Reference Manual located in the Reference Manuals folder.

Note – there is a second, independent, GPS chart plotter located above the chart table in the saloon (see section 4.17.1 below).



3.6.4 TMQ autopilot head.

By regulation, this instrument (figure 3.5.b) must, unfortunately, be disabled for bareboat charter operations.

Figure 3.5 Sailing Instruments at helm, showing NavMan GPS chart plotter (a); autopilot control unit with rudder indicator (figure 3.5.b); Raymarine ST60 apparent wind speed and direction indicator (c) and anchor switch assembly (d).

4 Cabin Management

4.1 Marine Toilets

4.1.1 Operation

- There are two 12V marine electric toilets on the vessel. One is located in the head/shower compartment at the aft end of the port hull, the other in the head amidships of the port hull.
- These toilets use salt water only!
- Please use only toilet paper supplied - other types of paper may block the system.
- DO NOT flush tampons, sanitary napkins, condoms or cigarettes down the toilet as these items **WILL** block the pump system and render the toilets Non-Functional. This then becomes a most unpleasant job for YOU to have to fix at sea.
- The port toilet can be set to discharge overboard when at sea (or not in the marina), or into the holding tank when in a harbour or marina. The control valve to select this option is located behind the panel just aft of the toilet (Figure 4.1).
- The starboard toilet discharges only into the holding tank.
- The control switches for the toilets are located on the cabin walls alongside the WC units. Press either the 'flush' button, or alternately, use the 'fill' and 'empty' buttons individually.



Figure 4.1 Valve to direct toilet discharge into holding tank or outboard. Note switch to turn on toilet pump controller in upper left of photo.

4.1.2 Holding tank discharge

Location: The holding tank is located in the outboard side inside the starboard engine compartment.

By regulation, holding tanks can only be emptied at sea (you must be more than 2 miles off-shore).

Operation: Emptying the holding tank is normally done by TropicSail staff after you return, however for trips longer than 3 days you may need to undertake a pumpout. To do this, make sure the pump circuit-breaker/control switch is ON (it is located just aft of the shower compartment in the starboard companionway). Press the pumpout button which has a timer control (see Figure 4.2), and this will pump automatically for approximately 1 minute. Ideally, flush both toilets again with ample, clean salt water and repeat the pumpout to flush the system.



Figure 4.2 Holding tank pumpout control panel showing circuit breaker/switch on the left and push-button timer switch on the right

4.2 Fresh Water Capacity and Management Systems

The vessel is fitted with 3 separate water tanks:

Port Main Tank: Below floor level midships port side - Capacity: 700 litres.

Starboard Main Tank: Below floor level midships starboard side - Capacity: 700 litres.

Reserve Tank: Starboard engine room - Capacity: 200 litres.

The PUMP MASTER switch must be ON to operate ALL pumps. The switch is located on the upper left of the instrument control panel (with circuit-breakers) on the left side of the chart table (Figure 4.3)

Managing the fresh water supply is accomplished by rotating the controller marked FRESH WATER CONTROLLER (there are no valves to be opened or closed). Simply select the tank required - they are marked Left main, Right main, Both (left & right tanks will operate simultaneously) and Reserve (red light indicates that reserve tank is in use).

Pump controller switch must be ON to operate ALL pumps



Figure 4.3 Instrument control panel (with circuit breakers) located above the chart table.

Note: Good water management is to use the left and right tanks simultaneously to keep the vessel in balance. Occasionally one tank will empty before the other. When this occurs the pump can continuously run on the empty tank. This is **not** good! Switch it OFF & continue using water from the opposite tank until it is empty and then switch to the Reserve Tank.

4.3 Salt Water Pump

The PUMP MASTER switch must be ON to operate ALL pumps.

The salt water pump has 3 functions:

1. supply salt water to spa
2. supply salt water to the galley sink
3. supply salt water to the deck wash down hose

Turn circuit breaker marked Salt Water Pump to ON. It is located on the circuit-breaker panel at the internal navigation centre.

4.4 Shower Drain Pumps

Prior to use of either shower, the PUMP MASTER switch must be ON & the appropriate Left (port) &/or Right (starboard) Shower Drain Pump Circuit Breaker ON. These are located on the instrument control panel on the left side of the chart table (Figure 4.3).

Note: The pump only activates when it detects water in the waste tank.

Recommended Pump Management: This is best achieved by using the PUMP MASTER Switch as the controller whilst leaving the 4 individual pump switches ON at ALL Times (these are Fresh water Controller, Left shower drain pump, Right shower drain pump, Salt water pump).

WARNING: When retiring for the night or leaving the boat unattended, the PUMP MASTER SWITCH must be turned OFF to avoid flooding inside the boat if a water leak develops.

4.5 Hot Water Service

4.5.1 Location

This is a gas-type storage hot water system. It is heated via the starboard engine cooling water heat exchange, but also an additional 240 Volt booster (switch located on the panel next to the fridge)

4.5.2 Operation

- Turn gas ON - (refer to paragraph 4.8. 1 - Gas Detector)
- Turn the main switch to the ON position
- If the red lamp lights for more than 15 seconds, turn the switch back to the OFF position and wait 5 minutes.
- Repeat step 2.
- When the burner lights, the red lamp will go out.
- If the unit switches off because the water temperature is too high, it must be switched back on manually. When the water has cooled, the unit can be switched on by switching the main switch to the OFF position for at least 30 seconds and then back to the ON position.

4.6 Lighting

4.6.1 Internal

- Controlled by 2 circuit breakers marked CABIN LIGHTS on the Master Circuit Breaker Panel at the internal navigation centre (Figure 4.3)
- These 2 circuit breakers can be left on at all times when on board. Switch OFF when the boat is unattended to avoid excess use of battery power if a light is left on undetected.

4.6.2 External

External lighting is controlled from a panel at the outside steering station directly below the engine instruments (Figure 3.2.g above).

Operation:

- Turn switch marked INST. LIGHTS ON – this will operate a light beside the winches and jammers on the upper deck, all instrument lights in front of the steering wheel, and a small courtesy light over the cabin entry door.
- Turn switch marked STEP LIGHTS to ON - this operates a light located at each boarding staircase.
- Turn switch marked BOARDING LIGHT to ON - this operates a light located on the transom directly under the BBQ (ideally left on when you expect to return to the boat at night).
- ENGINE INSTRUMENT PANEL LIGHT - located on the Volvo Penta instrument cluster marked INSTR. LIGHT (there are two of these, one for each engine).

4.7 Cooking Appliances

4.7.1 Gas Detector (GD-L)

The gas detector is operated from 24 volt power supply. This power supply cannot be turned off at any time - i.e. it is not possible as there is no switch provided - however, the unit is fuse protected and this fuse is located directly behind the control panel. The gas detector provides 24 hour monitoring of gas leaks within the cabin. However, if the house battery Master is switched OFF (this should only occur when maintenance is being carried out to the battery bank) this switches all DC power OFF on the boat and this WILL switch the gas detector off.

Operation:

- On applying power to the unit, the GD-L goes through a test cycle, which will take approximately 45 seconds. During this period the sensor head is being cleaned and tested and at the same time there will be a slow beep from the audible alarm and the light will flash amber. Towards the end of this period the pulse of the beeper and light will increase and if the sensor senses all is clear then the GD-L will go into safe mode. The beeper will turn off and the sensor light will show green.
- With GD-L in safe mode the gas valve can be turned on and off. When on, the valve light will show green. Should the GD-L go into alarm mode, the gas valve will automatically turn off. A red light will indicate that the sensor has detected gas and the alarm will be beeping fast.
- When gas has cleared, the alarm will stop and the sensor light will go back to green. The electric solenoid valve will need to be manually turned on.



Figure 4.4 Gas detector and solenoid control unit (midships, in the centre of the saloon, mounted under the deck-head above the galley bench.

4.7.3 Microwave

The microwave operates on 240 volt power supplied from the inverter or shore power.

Operation:

- Place food in a suitable microwave approved cooking utensil and place in the centre of the oven turntable. If in a container, make sure the lid is not sealed.
- Close the door.
- Select the desired power level depending on the food to be cooked.
- Turn the TIMER KNOB clockwise to set the cooking time - each number represents minutes.
- When the TIMER reaches 0 (zero) the signal sounds and the oven will automatically shut off - remove food.
- To stop cooking before the timer reaches zero, open the door and turn the knob to zero.
- **Note:** Do not put any metal objects into the microwave oven, as this will destroy the magnetron (microwave unit).

Note: If the food is removed and the door closed, the knob MUST be returned to zero to stop the oven operating without food inside - this is NOT a combined convection oven.

Cleaning: Do not use abrasive materials, such as cleaning powders, abrasive cleaners, steel wool and plastic pads, or harsh detergents to either the inside or the outside of the oven unit. Use only a soapy cloth, then rinse and dry to clean all food spatters or spilled liquids. It is best to wipe up spills with a damp cloth right away.

4.8 Refrigeration

4.8.1 Fridge

There is a 270 litre domestic, 240 Volt two-door fridge-freezer located in the galley, and a small 24 Volt fridge located under the chart table.

4.8.1.1 Operation

Refer to the Fridge Control Unit section in the Reference Manuals folder.

4.8.1.2 Good Management & Cleaning

- Avoid having the fridge or freezer door(s) open for long periods
- Don't put anything hot into the fridge or freezer
- Check, and if necessary, rotate the food daily
- Use only a clean damp cloth to wipe out the fridge
- DO NOT use harsh detergents or abrasive cleaners on any surface

4.8.2 Ice Box

- This is located under the rear seat of the cockpit close to the BBQ.
- It can be drained through a drain hole in the bottom and wiped out with a clean non-abrasive cloth.
- Leave lid open to air out and dry properly after use.

4.9 TV/Video (combined unit)

Power source - 240 volt AC

- The AC MASTER power switch must be ON - Located in middle cupboard of starboard hull (near the inverter).
- Ensure that the power lead is plugged into the power point under the top counter of the galley bench and that the power is turned on at this point.
- Turn ON using main control button on bottom left of TV/Video unit and turn OFF using the same control button when not in use. Note: Leaving the TV/Video unit in standby

mode (red indicator light ON - right hand bottom of unit) will continually use valuable battery power.

- Refer to users manual in EQUIPMENT MANUALS folder for complete and detailed operating instructions as required.

Position Adjustment: To move the TV screen on the locking swivel base, PUSH the front lever to the right of the screen and move the TV to the position require ensuring it locks into place on the swivel base.

4.10 CD and radio

Power source - 12 volt DC. This unit has an input to play music from Ipods and MP3 players.

- The ACCESSORIES SWITCH, located on the circuit breaker boards at the internal navigation centre, must be switched ON.
- Refer to Owner's Manual DER-1050 in the EQUIPMENT MANUALS folder for correct and detailed operation.

4.11 AC 240 Volt Power Supply

The AC 240 Volt power is supplied from two separate sources (see Figure 4.5.b).

Shore power: The power conversion centre located on board in the cupboard with the Inverter (port side, midships).

When the 'Shore Power Isolator' switch is 'On', shore power is connected to the boat. When the circuit breaker labelled 'Ship Power' is switched 'On', 240 Volt power is supplied to all power points and electrical equipment.

Inverter power: When at sea, the inverter should be switched over to convert power from the 24V batteries (see section 4.15 below)

4.12 DC Power Supply

4.12.1 12/24 Volt Power Supply and House Battery Master Switch

Power is supplied from the house batteries through the 'Isolator Switch' to the appropriate equipment.

4.12.1.1 Location

The batteries and isolator switch are located in the cupboard labelled 'Battery Master Switch' in the port hull opposite the bunk beds.

4.12.1.2 Operation

The 'Battery Master Switch' should be left in the 'On' position at all times. In the event of fire or service work it may be turned 'Off'.

4.13 Batteries and Charging Systems

4.13.1 Location

The house batteries (24V) are located under the lounge seating area accessible via the Port hull cupboard labelled - HOUSE BATTERIES / BATTERY MASTER SWITCH.

4.13.2 Charging

Both engines have their own 12 volt starter battery systems and 12 volt alternators for charging them. The starboard engine is fitted with an additional 200 Amp 24 volt alternator

for charging the house batteries. The port engine is fitted with a 12 volt to 24 volt booster from its 12 volt alternator (this is activated by an oil pressure switch when the motor is running) and can also charge the house batteries at 40 Amps. These charging systems are managed by independent rectifiers and run automatically. When the boat is cruising under engines, all batteries are being charged. Solar recharging occurs during sunlight hours (no cloud coverage)

4.14 Solar Panels

The 'Solar Panels' charge the House Batteries (not the engine start batteries).

4.14.1 Location: On the roof of the rear Helm shade cover

Operation: The 'On' and 'Off switch is located on the 'Engineering Panel'. This switch should be left in the 'On' position at all times. In the event of service work it should be switched off.

Note: Do not walk on or allow anything to be dropped on the Solar Panels. Nothing should be draped over the Solar Panels (eg towels) as that will stop them working. An amp-meter on the engineering control panel indicates charging rate, which can be above 4 Amps on a sunny day.

4.15 Inverter

A 240 Volt, 3 KVA, sine wave inverter is installed and is capable of operating all types of domestic power appliance and electronic equipment (CD players, computers, phone chargers etc.)

4.15.1 Location

The inverter is located in the cupboard labelled '240 Volt AC Switch Board' in the port hull opposite the bunk beds in the companionway.

4.15.2 Operation

When the shore power is connected and switched on (switch b), the LED labelled 'AC 1 IN GOOD' will flash. (On the inverter screen the cursor will be in the 'OFF' position). To turn the inverter on, press the red button labelled 'ON/OFF MENU'. (The cursor will now be in the 'SRCH' position) The 'AC 1 IN GOOD' LED will now go to a steady green. The inverter will now be charging the batteries. If not, 240 volts will be supplied to appliances taking its power from the house batteries.



Figure 4.5 Inverter with circuit-breaker control switches for ship power (a), shore power (b) and menu selector buttons (c) to control the inverter functions (see text for details)

The operation of the inverter is determined by the settings in the menu system. The menu system is divided into a **USER MENU** and a **SETUP MENU**. Each of the menu systems is divided into **MENU HEADINGS** and **MENU ITEMS**. The menu headings break the menu into groups of related menu items.

At the Menu Item level a setting can be adjusted, a mode can be selected or information can be displayed.

When a number is included with the graphic of the menu heading or menu item in this manual, the values

shown are the default value and are for a 12-volt domestic (120VAC/60Hz) model SW Series

Inverter/Charger. For 24 volt systems multiply the DC settings shown by 2.

INVERTER MODE (1) MENU HEADING

Set Inverter :

OFF SRCH ON CHG

Allows turning the inverter **ON** and **OFF**, enabling the **SEARCH** mode or selecting the charger only mode

CHG. The inverter always starts in the **OFF** position when powered up. Pressing the red **ON/OFF MENU**

button on the control panel can also access this display. Use the **SET POINTS** button to move the single space cursor under the desired selection or you can continue to push the red button to move the cursor to the right.

- **OFF - Disables the inverter.** When the **OFF** position is selected, no power will be provided to the AC loads even if an AC source is available. This is the default position of the inverter upon power-up.
- **SRCH - Enables the automatic load search mode control system.** This system will turn on the inverter if a large enough load is connected. If not enough AC loads are detected, the **INVERTING** LED will blink slowly. The required AC load level is adjustable in the **INVERTER SETUP (9)** menu heading of the **SETUP MENU**.
- **ON - Allows the inverter to provide AC voltage to the output and energize the AC loads either from the battery or any "synchronized" AC source available on the input.** This position must be manually selected.
- **CHG - Allows the inverter to operate only as a battery charger.** AC power will be available to the AC loads only if an AC source is available and "synchronized". This mode is used to prevent discharge of the batteries by the AC loads when a utility outage occurs. This mode is only operational on the **AC1** input and when the **SET GRID USAGE** menu item under the **INVERTER SETUP (9)** menu heading is in the **FLT** mode. When a different mode under the **INVERTER SETUP (9)** menu heading is selected, this position will be locked out. Selecting the '**CHG**' mode will disable the Automatic Generator control features.

INFORMATION DISPLAY

The following information is displayed as additional Menu Items: **CHG Avail. Only in FLT mode. Press red or setpoint button to move. Move cursor to Inverter OFF to reset Overcurrent**

4.16 Radios

4.16.1 VHF marine radios.

There are two VHF marine radios on board. These radios are typically used for near-shore operation and must be left in standby on Channel 16 (emergency communication and initial calling frequency).

An Electrophone VHF Marine Transceiver is located on the upper console near the internal navigation centre. Another Electrophone VHF Marine Transceiver is mounted at the outside helm position below the gear levers.

Refer to instruction manual in the EQUIPMENT MANUALS folder for complete and detailed operational instructions.

4.16.2 HF marine radio.

An Icom 801E HF marine radio is located in the saloon near the internal navigation centre. HF radios are used for long distance off-shore communication. This unit is fitted with international Digital Select Call (DSC) emergency direct dialling to shore-bases and other ship operators manning distress frequencies. The radio is also fitted with SELCALL to facilitate regular, direct communication with TropicSail or shore based telephone networks on selected frequencies.

4.17 GPS Chart Plotters

There are two GPS/chart plotter units on board - one internal, one outside.

4.17.1 Internal GPS/chart plotter

- Located at the chart table/navigation centre (Figure 4.6)
- Turn the circuit breaker marked GPS ON (this switch is located on the Engineering Panel).
- Refer to instruction manual (Cetrek 3400) in the Equipment Manuals folder for complete and detailed operating instructions.



Fig 4.6 Navigation centre, chart table, radar, GPS/Chart plotter and lighting switchboard.

4.17.2 External GPS/chart plotter


- A Navman Tracker 5600 is located at the outside helm position, outboard of the steering wheel (see Figure 4.7 and 4.1.c above).
- Turn the circuit breaker marked GPS ON (located on external control panel with the engine instruments – see Fig). Note that the power switch on the instrument itself also needs to be pressed (small blue button at bottom right of unit).
- Refer to instruction manual (Navman GPS) in the Equipment Manuals folder for complete and detailed operating instructions.
- The unit can be readily seen in bright daylight, and dimmed for night use. Press the MENU button, select 'System' and navigate to the light control functions. Or use the shortcut to go direct to the backlight control by pressing the power switch again (small blue button at bottom right of unit).
- Use the  button to move the cursor around the screen.



Figure 4.7 External Navman GPS chart plotter

4.18 Radar

- Located at the internal navigation centre (Figure 4.6).
- Due to legislation set out by the Queensland Marine Board, this facility is unfortunately not available to hirers.
- This facility has therefore been disabled by the rental boat company via a key-operated switch.
- This facility can be made available to hirers who have a Queensland Master Grade IV certificate or equivalent.

4.19 Autopilot

- Located at the internal navigation centre. The power switch for this unit is located on the Engineering Panel.
- Unfortunately, due to legislation set out by the Queensland Marine Board, this facility is also not available for bareboat charters.
- It has therefore been disabled by the rental boat company via a key-operated switch.
- This facility can be made available to hirers who have a Queensland Master Grade IV certificate or equivalent.

4.20 Kitchen Sink

The chopping boards over the sink and rubbish bin are the **ONLY** areas for placing **HOT** cooking utensils from either the oven, the stove top, or the microwave oven. Irreparable damage **WILL** occur if hot items are placed directly onto **ANY** other surface.

4.20.1 Salt water kitchen sink mixer tap:

Denoted by green colour code on the mixer. This is ideally used for rinsing plates, cups, saucepans etc. to conserve the fresh water supply.

4.20.2 Fresh Water kitchen sink mixer tap:

- Denoted by red & blue colour code on the mixer for hot & cold fresh water.
- On longer trips (more than 4 days) you are advised to use the fresh water sparingly as there is a limited supply.

4.21 Rubbish Bin

- Located under the chopping board at the galley sink
- To empty bin, access is via the cupboard in the starboard companionway.
- Seal full rubbish bags, double bag into larger garbage bags and place in holding lockers either side of the anchor well on the forward deck.

5 Manoeuvring and Sailing

5.1 Manouvering under motor

5.2 Hoisting sails

5.3 Reefing (reducing sail area)

5.4 Dropping sails

6 Anchoring

6.1 Anchor Winch

To operate the anchor winch, at least one of the motors **MUST** be running at least at 800 rpm in order to provide sufficient current at 24V for the winch to operate.

The anchor can be let out or retrieved from the helm position, and retrieved from the winch position on the fore-deck. At the helm position simply press the anchor switch (see Figure 3.x.d) 'UP' or 'DOWN' as required.

On the foredeck, the anchor can be retrieved using the foot switch. To release the anchor, undo the brake/clutch on the winch assembly by inserting the lever (located in the fore-deck anchor well) into the slots at the top of the winch and gently turning anti-clockwise to release the chain. The anchor should have been placed outboard and hanging free in front



of the boat. Tighten the clutch when sufficient chain has been released (at least 3 to 5 times the water depth) and secure the chain with the anchor strop (Fig 6.c).

Note: When retrieving the anchor, failure to run an engine may render the anchor winch inoperable. To prevent overloading the windlass motor there is a circuit breaker located in the anchor well on deck (just behind the winch). To reset: switch to 'ON'.

6.2 Additional Information On Anchoring

The method of anchoring this vessel has been dealt with at length in the Charters Briefing and Information Manual. However there are a few tips which may assist you further.

6.2.1 Reef Appearance

Coral reefs appear suddenly from deep water and may have isolated coral heads (bombies) away from the main reef line. The usual colour from above the water is yellow/brown. Reefs and shoal water are best seen with the aid of Polaroid sunglasses and at low tide.

6.2.2 Sun Angle

The reef may be hard to see because of the sun's reflection. If possible, approach reefs with the sun behind or to the side – not ahead when it becomes difficult to see below the surface. From 3.30pm the reef areas are difficult to see as the sun becomes too low to reflect the difference in colour between shallow and deep water.

6.3 Length of anchor chain

The main anchor has a 70 meter length of chain.

It is recommended to set the anchor well, especially before retiring for the evening or leaving the vessel. This is generally accomplished by dropping the anchor and reversing the boat (under power) until the anchor line becomes taught and straitens out.

It is recommended to lay out at least 3 and up to 5 times the water depth. In heavy weather this should increase to 7 times. The anchor chain is marked with rope ties in 5 meter units.

6.4 Swinging Room

Always allow sufficient swinging room when anchoring. This means that, to allow for wind, tide or current changes, the vessel should have room to swing freely in a full circle around the point where the anchor has been set. You **MUST** have sufficient room and depth to swing, in ANY direction, the full length of the chain/or rope without ever being over reef or shallow water. When mooring in a basin with other vessels, keep in mind the fact that catamarans do not behave the same as mono-hull sailing vessels. Because of their shallow draft they may lie more to the wind than the current and as such may not follow the same pattern as other yachts. You must allow enough room between vessels to swing in opposing directions.

6.5 Spare Anchor:

For emergencies, there is a second CQR anchor with 10 m chain and 65 m 25mm silver rope in the foredeck locker in front of the mast.

Make sure the bitter end is properly attached to a strong point on the boat (eg. Bow cleat, anchor winch, base of mast) **BEFORE** deploying it.

6.6 Rope bridle.

In rough conditions, securing the rope bridle (located at the bow) to the anchor chain will generally result in a much smoother, quieter and more comfortable ride. Attach the centre of the bridle to the chain, making sure all items are outboard, then let out more chain till the bridle takes the load. Re-secure the chain as a back-up.

7 Outdoor Entertainment

7.1 BBQ

7.1.1 Operation

- Ensure gas supply is on.
- Push the front knob in and turn in an anti clockwise direction to the high position (9 o'clock). To light the burner, simply depress the peizo button (front right hand), several times until ignition occurs. If peizo ignition fails, wait five (5) minutes then use a long match. If both burners are required, the above procedure is to be carried out on the rear burner or simply turn the rear burner control knob on and it may ignite within 2 seconds from flames of the front burner (wind dependent). Adjust heat as required by increasing/decreasing flame size with burner control knobs.
- After use, turn both burner knobs to the OFF position.

Warning: DO NOT remove the hot plate from the BBQ at any time (Including cleaning).

Cleaning: Scrape and clean with warm soapy water. For more stubborn dirt use medium strength oven cleaner.

7.2 Fold Down Table

There is a small, fibreglass table is attached to vertical supports at the aft edge of the cockpit. This folds down to make a small convenient table for drinks, snacks etc when the main table is in the saloon.

- Maximum Load is 5 kgs
- Do not lean on, sit on or place heavy objects onto table
- When moving along slide bar, ensure the support rubbers are also moved to provide stability
- Please do NOT use this as a chopping or filleting board (avoiding damage avoids replacement costs).

7.3 Spa (Salt water only)

7.3.1 Operation

To fill with water:

- Ensure central bottom plug is engaged
- Turn Salt Water Pump ON (section 4.4 in this manual)
- Turn Spa Water Pump ON (located on Spa Control Panel on overhead console beside CD Player in galley) and fill to desired level but not to exceed 'FILL' mark - It is not possible to fill beyond this mark as there is a safety overflow outlet.
- It will take approximately 20 minutes to fill.

To Heat:

- Turn the Right hand Motor on (section 3.1) and set Tachometer at 1200 - 1300 RPM and let engine warm up (approx. 5 minutes) as there is a heat exchanger fitted to this motor which will enable the spa to be heated.
- When engine is warm, turn Heater switch ON - on the Spa Control Panel - as the engine warms up, the spa will in turn be heated. The spa will heat to and hold temperatures between 35°C & 40°C in approximately 35 - 45 minutes. These times and temperatures vary depending on the water temperature used to fill the spa and the atmospheric temperatures at the time of operation.

- **Note:** The Heater Switch will not engage in the ON position until the engine is running. Heat to desired temperature (it is possible to excessively heat the spa) - Turn Heater switch OFF.

To engage blower:

- Turn Accessory switch ON - located at the internal navigation centre
- Ensure that there is 240 Volt AC power available (section 4.15)
- Turn Blower switch ON - on Spa Control Panel.
- It is not recommended to use the blower unless the starboard engine is running as it uses excessive battery power.

Good Spa Management - when the motor is running to heat the spa, it is also charging the house battery bank. Therefore plan the charging of the batteries to correspond with spa usage.

7.3.2 Safety

Refer to instructions in paragraph 1.2 of this manual.

7.4 Fresh Water Shower Tap: (to shower when you come out of the water)

7.4.1 Location: at Port boarding steps at the rear of the boat.

7.5 Canvas Sun Shade

7.5.1 Location: Entertainment area cupboard labelled 'Storm Covers'.

7.6 Transom Ladder

7.6.1 Location: Starboard boarding steps
(this is a telescoping unit, permanently fixed & normally stowed out of water).

7.6.2 Operation: Flip over and let rest in the water when it will extend automatically.
The ladder must be in the 'Up' position unless the boat is stationary.

7.7 Deck Wash Down Hose

7.7.1 Location: Forward starboard sail locker (beside anchor winch).

7.7.2 Operation: The salt water switch must be ON to operate (see Internal control switches)

8 Notes