

Fairwinds
Sailing and Recreational Society
Standard Operating Procedures

Jolie Systems

Document Revision History

June 15, 2019: engine seacock handling changed; pre/post sail checklists revised

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Overview

Boat Type:	1988 Pearson 33-2	
Sail number	23	PHRF-BC: 189
Hull Number:	140	
Hull Id. Number:	PEA88I40F788	
Length	LOA: 32' 6"	LWL: 26' 3"
Beam:	11' 0"	
Height:	47' 6"	
Draft:	5' 11" (fin keel)	
Displacement:	12,441 lbs	
Ballast:	4,000 lbs	
Hull Speed:	6.9 kts	
Fuel Capacity:	18.5 US gal or 70 liters	
Potable Water:		
Aft Tank:	20 US gal (75 liters)	
V-berth Tank:	24 US gal (90 liters)	
Hot Water:	6 US gal (22 liters)	
Engine:	Yanmar 2GM20F 18hp at 3600rpm	
Fuel consumption	2.4 liter/hour @ 2800 rpm	
Holding Tank:	14.5 US gal	
Depth sounder:	1.5 ft below waterline	
Rudder:	Spade	
VHF	Call sign: CFN6073; MMSI#: 316022134	

Electrical Systems

Batteries

House Batteries

(Number 2 on selector) located under after berth (2 x maintenance-free 6V/240Ah batteries in series)

Engine Starting Battery

(Number 1 on selector) located in the lazarette. To be used for starting engine only.

Battery Selector

Location: The selector switch is located in after cabin.

Warning: NEVER turn the battery selector through the "OFF" position while the engine is running. If the "OFF" position is selected while the engine is running, the alternator diodes may be seriously damaged. Switch battery selector through the "BOTH" position to select batteries.

Use: To start the engine when leaving dock, select battery #1 (Starting battery). Once the engine has started, select battery #2 (house batteries), by turning the selector through the “BOTH” position and leave it there for the duration of your voyage. The engine may be started from the house batteries without detrimental effect to them, but using the starting battery at least once per trip will lengthen the life of the starting battery.

After Use: Battery selector switch must be turned to the “OFF” position when finished using boat.

Battery Charging

Location: There is a permanent, “smart” digital battery charger located under the aft berth. The breaker for the charger is located on the shore power portion of the breaker panel. This system may only be used when connected to shore power. The charger is designed to not overcharge the batteries, so the 110v charger breaker should be left in the ON position when connected to shore power. *Jolie* is equipped with a digital battery separator that charges both batteries while the engine is running.

Use: The built-in battery charger may be used at any time while connected to shore power. If running the engine only to charge the batteries, do not idle the engine, run at about 1200 to 1500 rpm to ensure proper lubrication.

After Use: If connected to shore power leave the charger breaker in the ON position. When not connected to shore power the breaker should be in the OFF position.

Check electrolyte levels in “House” batteries on semi-annual basis and top up with distilled water when needed.

Breaker Panels / Power Distribution

The following is a list of equipment that is isolated by each breaker.

12 Volt Breaker Panel

Breaker Name	Systems Controlled
Cabin Lights	All interior lights
Running Lights	Running lights (sail and steaming light)
Anchor Light	Anchor light (LED)
Nav / Com	VHF
Instruments	Cockpit instrument cluster
Sump Pump / Water Pressure	Shower / head sump pump (On/Off switch is in the head) Turns on water pressure system (NEVER USE if the water tanks are empty)
Stereo	Stereo & CD changer
Head Discharge	Operates holding tank pump
Spreader	Spreader lights (shines on foredeck)
Propane	Operates propane electric shut-off valve

Other 12 V breakers:

Electric windlass	Aft cabin
Electric head	In the head, next to “ <i>holding tank full</i> ” light
Webasto heater fuses	Main: lazarette under the heater assembly Secondary: next to the fuel dosing pump

12 Volt Systems not wired through a Breaker

- Auxiliary 12 Volt plug-in (cigarette lighter type).
- Bilge pump (pump operated by switch above breaker panel and will operate even when battery selector is in OFF position).
- Clock on Webasto controller /timer (it will operate with battery selector in OFF position).
- Propane alarm / CO detector (will NOT operate with battery selector in OFF position).
- Battery status monitor

120V Breaker Panel

Breaker Name	Systems Controlled
Main Breaker	Turns shore power on to the rest of the panel
Reverse Polarity Light	Light turns on if polarity reversed
Outlets	Electrical outlets
Appliances / Water Heater	Turns on the water heater
Accessories / Battery Charger	Turns on the built-in battery charger.

Electrical systems power budget

DEVICE	Power draw	Notes
Windlass	35A (420W)	use it ONLY while the engine is running
Electric head	18A (200W)	high load, but only minutes per day in use.
Head discharge	16A (190W)	use it while the engine is running
Webasto heater	8 A (90W) 3.2A (40W) 1.2A (15W)	- glow plug pre-heating (initial ~20 seconds) - first stage heat - temperature maintenance mode (low speed fan).
Water pressure pump	4.0A (48W)	while the pump is running
Running lights	1.7A (20W) sail 2.5A (30W) power	
Propane solenoid	1A (12W)	
Stereo	1A (12W)	
Cabin lights	1.4A(16W)	with all white lights ON. Note: white cabin lights are a LED type (0.15A each). Red incandescent lights draw 1Amp each.
Anchor light	0.2A (2.5W)	
Nav/Com	0.5A (6W)	
Instruments	0.2A (2.5W)	

Individual Electrical Systems

Shore Power

Jolie has a 120V - 30 Amp system (round plug). A gender-bender is required to connect to 15 Amp shore power.

Connector Location: The shore power connector is located under the helmsman's seat (aft cockpit port side).

Shore power breakers: The forward section of the breaker panel is for shore power systems. These include electrical outlets, the water heater and battery charger.

Cable: The shore power cable is kept in a canvas bag in the lazarette. Also in the bag are: gender-bender fittings, Velcro tabs for supporting the cable and a rubber bungee for supporting the cable at the jetty power source. Always store the cable on board, never leave it on the jetty. When connecting to shore power, always "work towards the source". This means connect the boat end first, secure the cable run and finally connect to the shore power source. Always make this connection last so the cable is never live until it is all set-up.

After Use: When finished with Jolie, leave her connected to shore power at Tsehum Harbour.

Water Heater

Location / Specifications: Six gallon hot water tank is located under the holding tank, accessed from the lazarette. Water is heated by 120V (shore power) electric heater element and also by engine heat. The breaker is located on the shore power breaker panel. **Use:** Hot water may be turned on whenever connected to shore power.

Warning: Do not turn on the water heater breaker when the tanks are empty. The heater must be full of water before 110v power is applied in order to avoid damage to the heater element. You can confirm there is water in the system by turning on any tap while system is pressurized. In addition to the shore power water heater, the water also automatically heats whenever the engine is running.

After Use: Turn off *hot water* breaker.

Electrical outlets

Location: Electrical outlets are located throughout the cabin.

Use: Outlets may only be used when connected to shore power. To use, turn on the outlet breaker on the shore power breaker panel. The outlets in the galley and head are ground-fault protected.

After Use: Turn off the outlets at the shore power breaker panel.

Depth, Speed, Log and Water Temperature

Location / Specifications: Sensors are located in the forward bilge compartment. The instrument displays are located on the binnacle.

Use: Turn on the instrument breaker on the breaker panel.

After Use: Turn off the *instruments* breaker.

Electric Bilge Pump

Location / Specifications: The electric bilge pump is located under the deck panel, amidships, next to the liquor cabinet. It has a single pick-up located amidships, about ½ inch from the bilge bottom. Operating switch is on the instrument panel.

Flow rate is: 800 gph

Automatic operation: Leave the switch in the **Automatic** position. The automatic bilge pump runs directly from the battery.

Manual operation: Select **Manual** on bilge pump selector switch. Switch back to **Automatic** when the pump loses suction.

Stereo / CD changer

Location / Specifications: Stereo and CD changer are located port side in the cabin. Speakers are located in the cabin and in the cockpit. Fader control may be used to select between these.

Use: Refer to manual for operation. *Stereo* breaker must be on.

After Use: The CD cassette must be left in the CD changer after use. The remote control must be left on its Velcro tab after use.

Interior Lighting

Location / Specifications: Located throughout cabin. All interior lights operate on 12V.

Use: Lighting breaker must be on. Dome lights may be switched to either white (LED) or red (incandescent) light.

After Use: Turn off all lighting and the breaker.

Navigation and Deck Lighting

Location / Specifications: Controlled from navigation light control panel and main breaker panel.

Use: The navigation light control panel shows various light configurations.

Configurations are running lights (sail and motor) anchor light and foredeck light.

After Use: Turn off all lights and shut off breaker.

VHF Radio

Location / Specifications: Instrument panel / Standard Horizon Quest-plus, DSC.

Use: Refer to owners manual. Command Mic. is stored on the shelf port side; it is to be connected to connection in cockpit.

After Use: Place Command Mic. on the port shelf, turn off *Nav/Com* breaker.

GPS

Location / Specifications: Battery operated GARMIN hand-held type, on holder, port side, forward of the nav station

Use: Use plug-in connected to the GPS unit, as the device feeds GPS coordinates to VHF Radio.

After Use: Turn off GPS unit.

Battery status monitor

Location / Specifications: Instrument panel / Battery voltage and charging systems monitor.

Use: Three green bars (or 12.6+V) is a "battery fully charged" indicator. That normally relatively quickly falls to 12.3V (2 bars) under a load and then gradually slips to 2 bars (12V) over time. Once a single bar begins to flicker red (<12V), it is time to recharge the battery (ie. run the engine or engage the battery charger, if on shore power). The battery monitor draws a negligible current and it should be left ON at all times.

Engine / Propulsion Systems

Engine

Overview

Engine Type:	Yanmar 2GMF-20
Horsepower:	18hp @ 3600rpm
Basic Description:	2 Cylinder, Freshwater Cooled, Diesel Engine. Alternator output:75Amps.
Hour-meter:	Located above breaker panel
Price:	Pay the hourly rate to the kitty located in the navigation table. (\$8.00 per hour at time of publication of this SOP – refer to website for current rates)

Starting

1. Check oil. Dip stick is accessed via small door in aft cabin. Engine room light switch is below the battery selector switch (*cabin lights* breaker must be on to operate light). If low -top up with 15W-40 engine oil. Spare oil is stored under port settee.
 2. Check cooling fluid level (Check only when cold).
 3. OPEN cooling raw-water through-hull in the main engine compartment. This valve is normally closed when the boat is at dock. The engine key is attached to the valve whenever it is closed to guard against engine start with a closed valve.
 4. Visual check. Check for obvious leaks of oil, fuel, green coolant fluid or raw cooling water, check alternator and water pump belt tension, check for loose hose clamps, broken components. When replacing companionway steps, ensure the bottom of the step is properly seated/secured.
 5. Check fuel level. Fuel tank gauge in the aft berth.
 6. Place gear selector in neutral.
 8. Turn on ignition and press start button.
 9. Engine should turn over. Release the button as soon as the engine fires steadily.
- NOTE: Do not crank engine for more than 15 seconds. If engine fails to start, wait 15 seconds and try again. NEVER press the start button unless the engine is fully stopped.
11. Warm-up engine for a minute or two at high idle (~1200 rpm) – long enough to ensure it is running smoothly; extended warm-up dockside is not necessary as diesels don't warm up well under no load. VISUALLY CHECK that water is being ejected out the exhaust pipe. This indicates correct cooling water flow. Also check the engine compartment and make sure there are no leaks of water, oil or fuel or signs of hoses or wires being chafed.

Running

1. Select desired gear (forward – down, back – up). ALWAYS ensure engine is at idle before changing gear.
2. The engine is rated for 3600 max rpm. It runs most comfortably at about 2800-3000 rpm. Avoid running the engine at low rpm for prolonged periods of time to prevent build-up of undesirable carbon deposits in the system.
3. Maintain watch on engine's rpm, listen for unusual noises, monitor engine exhaust colour, and visually inspect quantity of water in exhaust on a continual basis. Shut engine down if there is anything out of the ordinary.
4. The most common cause of overheating is seaweed stuck in the cooling water inlet. If overheating occurs... shut off engine, close engine water through-hull valve and clean water strainer (near the valve). Replace strainer, open valve and try engine again.

Stopping

1. Place throttle at idle. Allow engine to operate at a low speed for about five minutes to cool down. If engine has been used at low speed for this amount of time to moor the boat... this will suffice.
2. Ensure gear box is in neutral.
3. Move throttle to $\frac{3}{4}$ position and allow engine to rev for about 2 seconds.
4. Move throttle to idle and pull stop lever while engine is coming down from the high revs so that it slows and stops in one smooth motion. (this procedure will help clear carbon from the cylinders before shutting off)
5. Switch off the ignition.

Emergency Starting

The engine will not start if both “Starting” and “House” batteries are drained. Avoid putting the battery selector switch on “BOTH” position.

Emergency Stopping

1. In the case of an emergency, pull and hold the stop lever until the engine stops.
2. If the stop lever does not work, pull the stop lever mechanism on the engine.
3. If the engine still won't stop, close the fuel shut-off valve (on the fuel tank under aft berth). Fuel lines will need to be bled to re-start.
4. As a last resort (in case of engine run-away) pull the decompression levers until the engine is stopped. If you use this method, fuel delivery to the engine continues until the engine stops turning. This will result in abnormal combustion, and possibly explosion, when the engine is next started.

Engine Emergencies

The engine alarm panel has audible and visual alarms for high water temperature (Overheating), low oil pressure and low charging voltage (Alternator Failure). The following actions should be carried out if the alarms sound.

Overheating

If engine overheats, STOP ENGINE IMMEDIATELY. The most likely cause is a sea water blockage. Clean strainer /raw water inlet and try again.

Oil Pressure Failure

In case of oil pressure failure, STOP ENGINE IMMEDIATELY. Check oil level and replenish if required. If oil level is ok, check the oil-pressure sender connections and try to re-start engine. If oil level is low, (it will have to be very low to cause a loss of oil pressure) then check for leaks prior to restarting.

Alternator Failure

If the alternator fails, you may keep running the engine. The batteries however will not be charging during operation, and the problem should be rectified as soon as possible.

Engine Systems

Fuel

Location / Specifications:

- Aluminum tank, located under aft berth (70 liters, 18.5 US gal).
- Fuel gauge is located under aft berth on top of the tank.
- Fuel shut-off valve is located on the top forward edge of the fuel tank, accessed under the aft berth.
- Deck fitting: located at the aft port corner of the deck.

Use: Fill with diesel fuel only to max. 7/8 of tank's capacity. Do not overfill to minimize risk of a diesel leak from the tank. Fuel consumption is about 2.4 liters per hour at 2800 rpm. The range of Jolie on a full tank is about 30 hours or about 180 nautical miles.

NOTE: The fuel gauge will not display the diesel levels below ~1/4 full. Do not run out of fuel or you will have the joy of priming the fuel system when you fill it next.

After Use: No action required.

Engine Oil

Location / Specifications: Filled through cap on top of engine rocker cover. Oil is stored under the aft berth on the starboard side.

Use: Use 15W-40 only, check oil level once per day during engine use.

After Use: Clean all spilled oil as if the engine compartment is your kitchen.

Engine Coolant (Fresh)

Location / Specifications: Engine coolant may be checked via the expansion tank, located in the upper port side of the engine compartment. This is accessed from the aft cabin (under the forward shelf).

Use: May be topped up with distilled water or anti-freeze coolant. Inform boat captain if it is necessary to frequently top up engine coolant.

After Use: Clean any spills as if the engine compartment is your dining room.

Cooling Water (Sea Water)

Location / Specifications: Through-hull valve is located in the engine compartment, under the companionway on the starboard side. The strainer is located just above the through-hull valve.

Use: The through hull **MUST** be opened before engine use. To guard against the engine being started with the valve closed, the engine key is attached to the valve whenever it is closed. Always **OPEN** the valve before retrieving the key!!

The strainer should be checked / cleaned if a cooling problem arises. A loss of cooling water flow may be indicated by a lack of water flowing from the exhaust, or the sound of the exhaust changing to a loud, throaty roar. Running the engine with no cooling water in circulation will damage the raw water impeller after a few minutes, rubber exhaust hoses, the muffler and it will ultimately cause serious engine damage.

After Use: The through-hull should be **CLOSED** when the boat is at dock and the engine key attached to it.

NEVER OPERATE THE ENGINE WITH THE RAW WATER INTAKE VALVE CLOSED! TO GUARD AGAINST ERROR THE ENGINE KEY MUST BE ATTACHED TO THE VALVE WHEN IT IS CLOSED. OPEN THE VALVE WHENEVER YOU RETRIEVE THE KEY.

Other Propulsion Systems

Transmission

Location / Specifications: The transmission should not require any maintenance by boat skippers. Use SAE 30 transmission oil only. Do not overfill.

Shaft Seal

Location / Specifications: Located under aft berth. There is a dripless, permanent PSS stuffing box fitted.

Propeller

Specifications: Two blade right-hand prop on 1-1/8 inch shaft. Walks to port when going astern.

Domestic Systems

Ice Box

Location: The ice box is located under the chart table. The drain is the hand pump located in the head sink.

Use: It is recommended that the ice box be pre-cooled prior to use (by placing a block of ice in the cooler approx. 12 hours prior to use). Storing food in such a way as to minimize the amount of times the ice box is opened will maximize the life of a block of cooling ice.

After use: Always do the following: empty, pump out, wash, place some fresh water in the ice box and pump-out again then wipe dry. Leave the lid open to allow the ice box to dry completely.

Fresh Water

Location / Capacity: There are two fresh water tanks. The forward tank (24gal) is under the v-berth, the after tank (20gal) is under the starboard settee. The hot water tank (6gal) is located in the lazarette, under the holding tank. The pressure pump and valves are located under the starboard settee.

Deck Fittings: There are two deck fittings, one at the bow for filling the forward tank and one starboard side aft of the shrouds for the filling the after tank. Do not overfill tanks (only fill to within 2" of top) as they will leak out vents/inspection covers into the bilge and under the galley.

Use: Pump must be turned on at breaker panel. Normal use is to use forward tank only and reserve aft tank for back-up if you empty the forward tank. If you are going to fill both tanks at the end of your cruise, you may use either tank (selector valves are under the after settee). Select only one tank at a time, do not open both tank valves at the same time (this will connect both tanks together and they will attempt to equalize levels).

Warning: Only turn on water pressure pump when it is required, and NEVER if the tanks are empty.

Warning: When one tank is empty, always shut off the empty tank and select a full one.

After Use: Always ensure the after tank is full and the forward tank is selected for use. If you empty the forward tank... fill it too.

Sinks and Drains

Location / Specifications: There are two sinks... galley and head. Each supplied with hot and cold pressurized water.

Use: Through-hull valves for drains must be opened for use. One is located under each of the sinks. Close the head sink drain when sailing. On a port tack, the head sink can fill with water, and it will slosh about and make a mess.

After Use: Close through-hull valves.

Head and Holding Tank

Location / Specifications: 15 gallon holding tank located in forward part of lazarette, on top of the hot-water tank. Macerator pump, the Y-valve and "odor control" vent-line carbon filter are located above the tank. Head inlet through-hull is located in forward port corner of engine compartment. Tank full light (red) is located in head on port bulkhead. Overboard pump-out through-hull valve is located in the bottom of the lazarette.

Head Use: *Jolie* is equipped with electric macerating head. The rule of thumb still is: if you didn't eat it, it shouldn't enter the head, with the exception of a small amount of marine grade toilet paper.

The Y-valve selects either overboard flush or flush to holding tank. Do not flush to holding tank if the red "holding tank full" light is on.

Hold the FLUSH button down for 8 seconds to ensure your deposit is flushed through the system to the tank or over the side.

To Pump Holding Tank Overboard: Ensure *discharge through-hull valve* is open (it is normally left open). Turn on the pump at the breaker and run pump until the tank is empty. It takes about a minute to empty full tank.

To use Vacuum Deck Discharge: Connect vacuum hose to deck fitting and empty tank. There are no valves to open.

After Use: Close head inlet through-hull valve. Ensure Y-valve is in the overboard position. Leave the overboard pump-out through-hull in the open position. Fill the tank partially with fresh water and add H/T enzymes to prevent build-up of hard deposits in the system.

Shower

Location / Specifications: Shower is located in the head.

Use: Ensure shower curtain is up. Turn water pressure breaker to the ON position. While showering, turn ON the sump pump switch (in the head) and turn it OFF immediately after your shower. (remember... showering uses up your water supply). To make water come out of the shower head, open the valve between the faucet controls and the showerhead.

After Use: Ensure shower area and curtain are dry and sump has been pumped dry.

Galley Stove

Location / Specifications: Gimballed two burner propane stove with oven. Fiddles are stored in bottom of galley drawer.

Use: Refer to owners manual for proper operation. Also, see section below about propane use.

After Use: Shut off propane and clean the oven as if you are about to eat off it.

Propane

Location / Specifications: Propane tank is located in the propane locker, aft – port side of cockpit. System has a solenoid shut-off valve. Note: the propane alarm is not interconnected with the solenoid. To test the operation of the alarm (daily), press the test button... the light should come on immediately and the audible alarm will sound after holding the button down a few seconds.

Use: Tank valve must be opened manually. Solenoid valve must be energized by switching the *Propane* breaker ON. Propane is now ready to be used (stove only).

Tank valve may be left open while cruising, but solenoid should be shut at all times when propane is not in use. If propane is sensed by the detector, the alarm light will come on immediately and the audible alarm will sound. The alarm triggers at 10% of the explosive levels concentration.

BE AWARE of the dangers of propane and risk of a propane explosion!

Propane is heavier than air and a leak could fill the bilge, linger in lockers and in the engine compartment creating an extremely dangerous situation.

If you hear the propane alarm, or smell gas, shutdown the system IMMEDIATELY! Air the boat thoroughly. Avoid any sources of ignition. Investigate possible sources of trouble.

After Use: When finished using the stove, shut solenoid valve by shutting off the propane breaker and allow the flame to extinguish on its own (uses the propane in the line) then close the control valve on the stove. Close the tank valve before retiring for the night, and at the end of your cruise. Fill the tank if you emptied it.

Cabin Heat

Location / Specifications: *Webasto EVO3900* diesel heater is located in the lazarette. Heat outlets are located in head, aft cabin and main cabin. *Webasto* programmable controller is located on the breakers panel. The heater's fuel shut-off valve and the fuel pump are located in the aft cabin by the fuel tank.

Use: To use, set the temperature dial and push "Heat" button on the controller (refer to user manual for details, please). Do not block the heater outlets.

After Use: Turn off heater.

Warning: **Serious damage to the heater may occur if power is switched off while the unit is in operation.** Wait at least 2 minutes before switching battery selector to "OFF" to ensure that the heater has a cooling down period.

Note: in off-seasons months - run the heater 20 minutes once a month to maintain the fuel line prime and keep the fuel pump lubricated.

Bunks and Cushions

Location / Specifications: Located throughout the boat.

Use: Use as desired, keep dry.

After Use: Place cushions on their side to promote air circulation.

Rigging

Sails

Location / Specifications: Main and roller-furled genoa only. Cunningham, two reefing points on the main, two reefing points on genoa.

Use: Use proper seamanship. Note that genoa reefing point is indicated with a vertical line on the foot of the genoa.

After Use: Furl sails, secure all lines and place cover on the main.

Running Rigging

Location / Specifications: All led back to cockpit except topping lift and outhaul. There is a spare halyard rigged on the port side of the mast.

Use: Use proper seamanship.

After Use: Coil and stow all lines on their hangers.

Docking Lines, Fenders, etc.

Location / Specifications: Dock lines and fenders are located in the lazarette. Life lines on port side open for easy access to dock.

Use: Use as appropriate.

After Use: Coil and stow all lines, close lifelines.

Deck Systems

Steering

Location / Specifications: There are two fitted steering systems. The “destroyer wheel” on the cockpit binnacle and the emergency tiller system. The emergency tiller is kept in the lazarette, the rudder post fitting is located under a white, round cover under the helmsman’s seat.

Use: Steering lock is located on starboard side of the pedestal. Do not over tighten.

After Use: Leave steering locked and cover the binnacle with the canvas cover.

Through-Hull and Vent locations

Location / Specifications: It is important that skippers are aware of where the hull is penetrated, as these are potential locations for major leaks. Also, care must be taken not to damage these if the boat is hauled out of the water. Locations are shown in figure 7.1 in the *Pearson 33 Owners Manual*. The following is a list of the through-hull penetrations near or below the waterline:

1. Engine raw water intake
2. Head intake
3. Head overboard discharge
4. Galley sink drain
5. Head-sink drain

There are also vents and drains above the waterline... they are:

1. Propane bin vent
2. Cockpit drains
3. Engine exhaust
4. Sump/Bilge discharge
4. Fuel tank vent
5. Holding tank vent
6. Anchor locker drain

Finally, just forward of the keel are the instrument heads (knotmeter, depth sounder, water temperature). These are accessed from the bilge, under the table. Most through-hulls have a wooden plug for emergency use, located on a sting, near the hull penetration.

Bilges and Bilge Pumps

Location / Specifications: The bilges are shallow so please keep them as dry as possible to avoid damaging the wooden floor. They are accessed via removable deck plates throughout the cabin. There are three bilge pumps. One electric 800gph (located in bilge next to liquor cabinet), one permanently mounted hand pump 500 gph (suction located in bilge next to liquor cabinet, operated by hand-pump on cockpit on the port side) and a portable hand-pump kept in the lazarette. The manual bilge pump handle is stored under the helmsman's seat.

Use: Follow directions in manuals.

After Use: No action.

Stern-tie Line

Location / Specifications: There is 200 ft of floating stern-tie line in a bag on the aft pushpit.

Anchoring

Jolie is equipped with *20lb BRUCE* anchor, 200ft ¼" chain + 100ft rope rode.

Spare *DANFORTH* is stored in the lazarette. Dinghy anchor is stored in the anchor locker at the bow.

Ensure crew are familiar with windlass and anchoring procedures; it will save on windlass repair costs.

IN AN EMERGENCY USE THE WRENCH TO RELEASE THE CLUTCH TO DROP THE ANCHOR.

Lowering the anchor

1. Confirm that the power to the windlass is turned on (switch in aft cabin). This switch should ALWAYS be on when underway.
2. Unhook the chain from the deck lock and release a foot or so of chain.
3. Push the anchor outboard until it will fall on its own.
4. Wait for a signal from the helmsperson to lower the anchor.
5. Let out enough chain for the anchor to reach the bottom. The boat should not be drifting backwards as you do this.
6. Signal to the helmsperson to go astern as you pay out more chain.
7. Watch the marks on the chain and pay out the correct amount of chain. You are responsible for determining the correct scope.
8. Signal the helmsperson to stop the boat.
9. Place the chain hook (in chain locker) on the anchor chain.
10. Let out a bit of slack on the chain so that the anchor is now pulling on the chain hook and rope and not the windlass.

11. Signal the helmsperson to set the anchor by GENTLY going astern.
12. Reach overboard; place your hand on the chain so that you can feel when the anchor stops dragging.
13. Once Jolie comes to a stop (judging by the shore) speed up the engine to drive the anchor through any weed and into the bottom.
14. If you are spending the night, remove the chain hook and replace it with the bridle.
15. Ensure there is slack between the bridle and the windlass.

Raising the anchor

1. Power Jolie slowly towards the anchor as you retrieve the chain with the windlass. Do not overload the windlass towing the boat into the wind.
2. When Jolie is over the anchor (chain is close to vertical) slip the chain hook onto the chain and release a bit of chain (as you did lowering the anchor) so that the pull is on the chain hook and rope, and not the windlass.
3. Signal the helmsperson to GENTLY power ahead and watch for the anchor to break free of the bottom. DO NOT BE IN A RUSH. It can take a few minutes for the anchor to ooze out of a muddy bottom.
4. Remove the chain hook.
5. Raise the anchor watching the chain coming aboard. If it is muddy, get the boat brush and clean it before it gets on the deck and into the chain locker.
6. When the anchor gets close to the roller, reach out and pull it over the top and onto the deck.
7. DO NOT GET UNDERWAY BEFORE THE ANCHOR IS ON THE DECK. The anchor can swing and crunch the hull if it is hanging off the bow.
8. Secure the anchor with the deck lock.
9. Signal the helmsperson that they can 'get underway'.

Safety and Miscellaneous

Emergency Equipment

Flares

Location / Specifications: Coastguard approved complement of flares are located above the settee on the starboard side.

Use: In case of emergency, use according to instructions.

After Use: Record in log and inform boat captain of use so flares can be replaced.

Life Vests – PFDs – Floating things

Location / Specifications: There are four adult PFDs. They are stored in the hanging locker in the aft cabin. There are four boat-cushion / throwing-devices kept under the V-berth.

Life sling is stored in the lazarette. When the boat is in use clip this on the INSIDE of the pushpit railing. Ensure the safety line is tied securely to a strong deck fitting.

Use: Follow coastguard approved directions for the use of each device. The square throwing cushions may be used for cockpit cushions while underway. A fender should be used to practice man-overboard drill ... tie a loop in the fender line for easier retrieval with a boat hook.

After Use: Return all items to their storage place after use.

Fire Extinguishers

Location / Specifications: There are two – 10BC dry chemical fire extinguishers:

- Under the helmsman's bench
- Galley

Use: All skippers must read the directions on the side of the extinguishers. To use, pull pin, point at base of flame from a couple of feet away, squeeze lever.

After Boat Use: No Action

Tools and Spare Parts:

Location / Specifications: Tools and spare parts are located in tool boxes in the forward cabin.

Use: If spare parts are used from the tool boxes, let the boat captain know. Ensure tool boxes are secure, prior to sailing.

After Use: Dry off and clean the tools before replacing in the tool box.

Lightning Protection

Location / Specifications: Jolie is fitted with a lightning protection system. This system provides a cone of protection around the boat during an electrical storm. A *bonding system* of #8 gauge stranded copper wire connects the chainplates, mast step, fuel fill and fuel tank to the keel.

Use: In the case of an electrical storm, do not allow anyone in the water. Everyone on board must stay inside the boat. Do not make contact with any metal object, regardless if it is connected to the bonding system or not, especially in such a manner as to bridge any of the bonded items listed above.

After Use: In the case of a lightning strike, damage to electronic equipment is likely. All electronic equipment must be tested for proper operation and calibration. Contact boat captain in case of a lightning strike.

Safety Alarms and Warnings

Reverse Polarity Light

Location / Specifications: Warning light located on 120 Volt shore power breaker panel

Use: If this light is on, turn off the 120 Volt shore breaker immediately, disconnect the power cable from the shore power connection and inform the marina management. Do not use reverse polarity power, it can kill you.

After Boat Use: No Action

Propane Alarm & CO detector

Location / Specifications:

- There is one *Propane sniffer* (red thing) located at foot level below the chart table.

Be careful not to bump it as it will be your responsibility to replace this expensive part if it is broken. The alarm monitor is located on the breaker panel.

Use: The alarm turns on automatically and it should be tested each day. Test by pressing the test button and holding it for a few seconds. The red light should come on immediately and the alarm should sound after a few seconds. Alternatively you may use butane from a stove lighter to activate the “sniffer”.

Leave alarm turned on at all times that a propane tank is on board. This alarm is NOT connected to the propane valve.

Be aware of the dangers of propane!

- There is one maintenance-free *CO detector* located on the port side bulkhead.

It emits two short chirps on power up. This is normal.

CO detectors are sensitive to ammonia (commonly found in household cleaners) concentrations in the air. Keep the cabin well ventilated to avoid false alarms.

After Use: No action required.

Engine Panel Alarms

Location / Specifications: The engine operating panel has light and audible alarms for high water temperature, low oil pressure and low charging voltage.

Use: Stop engine immediately and investigate problem if alarm sounds. See section on engine emergencies for corrective action.

Miscellaneous

Documentation, Log and Operating Manuals

Location / Specifications: The operating manuals for all equipment are located in a binder situated on the starboard side above the settees. The *Pearson 33 Owner's Manual* and the Yanmar owner's manual are also located here. The log book, charts and other paperwork are located in the chart table.

Use: All skippers must familiarize themselves with the operating procedures for every piece of equipment on board.

After Use: Return to proper stowage locations.

Dehumidifying and Winter Storage

Location / Specifications: During cooler months, an electric heater and a blower will be placed on board by the boat captain.

Use: During winter months, while the boat is not in use, both the heater and blower should be plugged in and left running to minimize moisture. The heater should be left on its low heat setting.

After Use: Carefully stow the heater and blower while sailing.

The Bar

Location: Liquor cabinet is located on the port side of the galley.

Use: Instructions are in the liquor cabinet in a little note book. Use the 1 oz measure located in the cabinet to measure your drinks. Keep a record of how much you drink in the note book (tear out when done) and pay the posted rate per drink to the *bar kitty* located in the cabinet. Replenish any depleted stocks from the bar kitty. Keep bottle receipts in the kitty.

Warning: If you sail to the US... on your return, Canada Customs has the right to charge a skipper duty on all alcohol onboard (over your duty-free limit) unless it is in an unopened (sealed) bottle and you have a Canadian receipt for it. If they do this, it is only on the actual amount of liquor in the bottles. Generally they will not bother to do this as thousands of boats travel to and from the US with stocked bars every year; however, they can, and occasionally do, exercise their right to check your bar and charge duty. If you do not wish to be subject to this possibility, drink what you take or remove the booze prior to sailing. When asked by Customs what you are bringing into Canada, tell them what you bought... don't flap your gums about the bar... they never ask if you are bringing back open booze that you purchased in Canada before you left so there is no need to mention it.

Miscellaneous Boat Equipment

There is various equipment located throughout the boat.

Location / Specifications:

Flashlights: One in the aft cabin, one on port shelf above settee.

Hand held wind speed indicator: Port shelf above settee.

Winch Handles - locking type (2): Port shelf above settee (use these ones).

Winch Handles – non-locking type (1): Port shelf above settee.

12 Volt portable spot light: Port shelf above settee.

12 Volt, 2 amp portable trickle charger under settee.

Hand bearing compass: Port shelf above settee.

Spare parts box: Under settee stbd side.

Tool Box: Under settee port side.

Batteries: Port shelf above settee (if you use them up, replace them or let boat captain know).

Wooden through-hull plugs: Port shelf above settee.

Companionway door (three pieces): Stored in canvas hanging bag in aft cabin.

Use: All skippers should familiarize themselves with the locations and proper use of all items.

After Use: Carefully stow any items used.

Cleaning Supplies and Equipment

Location / Specifications: Cleaning supplies are located in a green container under the galley sink.

Use: Use as required.

After Use: Replace or inform boat captain of any required replenishments.

Barbeque

Location / Specifications: Propane barbeque located aft port cockpit mounted on the pushpit. This barbeque uses disposable screw-in propane canisters. The regulator fitting (and a spare) are located in the bottom drawer in the galley.

NEVER store cylinders in the lazarette or boat cabin as they may leak propane into the bilge and create a fire or explosion hazard.

Use: Follow instructions in manual book.

After Use: Clean and replace cover.

Locks and keys

Location: All locks and keys with exception of the engine key are to be kept in the nav. table when not in use. The engine key is attached to the engine raw water seacock whenever the valve is closed (i.e. the boat is at dock).

Checklists

Pre-sail and post-sail checklists are provided as an easy reference. They have been abbreviated to fit on one page each and are NOT a replacement for reading and understanding the SOP. Non-inclusion of information in the lists is not an excuse for improper boat or system use.

Pre-Sail Checklist for Jolie - June 15, 2019

Logbook

- Read recent Logbook and Maintenance Log entries
- Complete logbook (persons on board, engine hours, conditions, destination, departure time)
- Obtain relevant tide, current, weather reports; Verify navigation aids & relevant paper charts are onboard

Bilge

- Check water level in bilge
- Pump setting to auto

Engine Compartment

- OPEN engine seawater intake valve (and retrieve engine key from valve handle)
- Visual check of belts, hoses, wiring, leaks (fuel, oil, water); any chafing, looseness?
- Check oil level
- Check engine freshwater coolant level
- Ensure companionway steps re-seated/secured

Fuel

- Minimum half tank (gauge inaccurate at low levels) – note: fill only to max 7/8 tank

Plumbing System

- Head intake and discharge valve settings as required
- Close head sink seacock; confirm other domestic through-hull valve settings
- Top up fresh water tanks as required
- Check holding tank (a) if over half full with waste, make plans to pump in accordance with regulations or (b) if over half full with fresh water and enzyme pump prior to sailing to prevent vent line fouling

Electrical System

- Disconnect shore power (from source)
- Shore power breaker OFF
- Battery switch to starting; never turn switch OFF while engine running
- Check battery status/voltmeter
- Turn ON house system and Nav/Com Instruments as needed
- Connect radio mic and GPS in cockpit; confirm they and the depth sounder are working
- Propane alarm turned ON and tested
- Confirm propane switch in OFF position and tank valve is closed
- Check carbon monoxide alarm
- Turn ON windlass (switch in aft cabin; so windlass is ready in case of emergency)
- Charger breaker OFF when disconnected from shore power
- Water heater breaker OFF
- Check fresh water tank levels before turning on water pump breaker

Above Decks

- Visual check of standing and running rigging (lines, blocks, brakes, winches, cleats, shrouds)
- Check lifelines
- Unlock and inspect lazarette
- Disconnect zinc and secure to dock
- Winch handles to cockpit holders
- Remove canvas boat covers
- Unlock steering
- Latch all 4 forward hatches to prevent jib sheets from snagging
- Main halyard on

Safety Equipment and Procedures

- PFD for everyone; confirm children and non-swimmers wearing PFDs
- Visual check of anchor, tool kit, first-aid kit, signalling gear, MOB gear, fire extinguishers, spare diesel fuel, manual bilge pump handle.
- Attach rescue collar on inside of the pushpit railing.
- Stow disposable propane cylinders ONLY in propane locker
- Secure personal gear and all loose items below deck
- Brief crew on emergency procedures as required; Sail plan filed

Dinghy

- If towing: ensure it is secure (oars and oar-locks stowed); if unused: ensure it does not overhang dock

Departure

- Check engine warning systems
- Start the engine and confirm water discharges at stern
- Check engine compartment again for leaks (fuel, oil, water) or chafing while engine is running

Post-Sail Checklist for Jolie - June 15, 2019

This checklist is intended to be an easy reference guide only. Non-inclusion in this list is not an excuse for improper system or boat use.

Logbook

- Complete Logbook and Maintenance Logbook entries
- Calculate and enter engine hours and payment made to kitty
- Notify Boat Captain of any repairs undertaken or required

Bilge

- Check water level in bilge
- Ensure bilge pump is in the auto position

Engine Compartment

- CLOSE engine water intake valve and attach engine key

Fuel

- Top up fuel as required to maintain tank at least 1/2 full (maximum fill is 7/8 tank).

Plumbing System

- Pump out holding tank waste in accordance with regulations prior to returning to the marina
- Fill holding tank to above highest scum line with fresh water and add enzyme
- Fill water storage tanks
- Close all through hull valves
- Close water supply valves

Electrical System

- Turn furnace OFF (before breaker)
- Turn OFF house system and Nav/Com Instruments
- Battery switch to OFF position
- Confirm propane switch in off position and tank valve is closed
- Connect battery charger, (and heater if off-season) to shore power (from boat to source)
- Shore power breaker ON
- Charger breaker ON when connected to shore power
- Turn OFF windlass; on/off switch in aft cabin

Above Decks

- Confirm two sheet wraps on the headsail and furling line cleated
- Main halyard to toe rail away from mast, coil and stow all lines
- Visual inspection and lock lazarette
- Stow radio mic, GPS, winch handles and flag
- Lock tiller/helm in neutral position
- Replace all canvas boat covers
- Check mooring lines and fenders, position dinghy not to rub hull
- Connect zinc to chain plate
- Flush anchor locker with fresh water and hose off deck and cockpit

Safety Equipment and Procedures

- Remove and stow rescue collar

Below Decks

- Ensure engine key attached to CLOSED engine seacock valve handle
- Leave keys for deck intake fitting caps in chart table
- Lock forward hatch
- Remove all personal gear and perishables
- Clean cooler and leave open for ventilation
- Clean and tidy boat; including head
- Cushions arranged for airing out (in standing position)
- Head door secured open for ventilation
- Open skylights in head and aft cabin

Dinghy

- Ensure dinghy secure and does not overhang dock; oars stowed

Departure

- Lock Cabin