

SHIBUMI

Seattle, WA

Owner's Notes



Bill & Fred's Excellent Adventures, LLC

<http://www.mvshibumi.com>

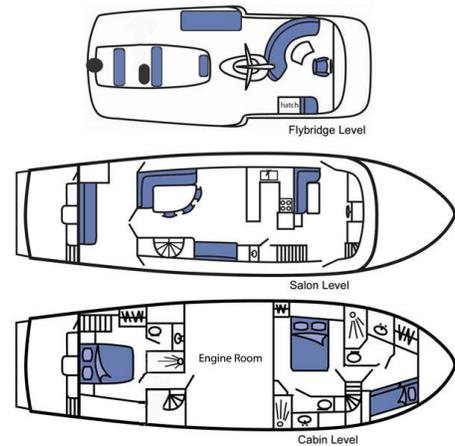
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Description

Shibumi is a 1991 60' DeFever POC (Power Ocean Cruiser). The style is often described as a flushdeck yacht or pilothouse. The lower deck has three staterooms each with private bath. The master is located in the stern and has an entrance from the cockpit and one from the salon. The forward staterooms are accessed via stairs off the wheelhouse. Because the master is separated from the other two by the engine room the layout provides great privacy. The mid deck has the California deck, salon, galley, day head and wheelhouse. The boat deck has the flybridge, crows nest and dinghy.



Shibumi is powered by a pair of Caterpillar 3208na diesel engines rated at 210 horsepower each. AC power is provided by an 8kw Westerbeke generator (port) and a 12.5kw Westerbeke generator (starboard). There are five steel fuel tanks; two main tanks at 425 gallons each, two forward tanks at 310 gallons each and one aft tank at 270 gallons, for a total of 1,740 gallons. The aft tank is not used for the Northwest waters. For those that remember the original lazarette tanks, they were removed in 2006 to provide more storage and to relocate the house battery bank.

She carries 500 gallons of water in two 250 gallon stainless steel tanks. The starboard tank and shutoff is located behind the door at the bottom of the stairs from the salon outside the engine room and master stateroom. The port tank is located in the master head with shutoff in the cabinet under the sink. Hot water is provided by two 20 gallon tanks (plumbed in series) heated electrically and by heat exchanger from the engines and Kabola hydronic system.



Shibumi is a comfortable ship with long range capability. She has Naiad stabilizers for comfort, a Portuguese bridge and covered walkways for safety. She was built to cruise so she is quiet and easy to run for long periods of time.



Definition of "**Shibumi**"

"*SHIBUMI* has to do with great refinement underlying commonplace appearances. It is a statement so correct that it does not have to be bold, so poignant it does not have to be pretty, so true it does not have to be real. *SHIBUMI* is understanding, rather than knowledge. Eloquent silence. In demeanor, it is modesty without prudency. In art, where the spirit of *SHIBUMI* takes the form of *SABI*, it is elegant simplicity, articulate brevity. In philosophy, where *SHIBUMI* emerges as *WABI*, it is spiritual tranquility that is not passive; it is being without the angst of becoming. And in the personality of a man, it is...authority without domination. One does not achieve *SHIBUMI*, one...discovers it. And only a few men of infinite refinement ever do that. One must pass through knowledge and arrive at simplicity to arrive at *SHIBUMI*."

Excerpted from "Shibumi" by Trevanian

We commonly like to refer to the meaning as a way of life or understated elegance. We feel that our vessel chose the name for herself in part because of her sea keeping capabilities and her sea kindness. For those who have read old sea captain superstitions, a vessel starting with the letter "S" or "F" and having five or seven letters in her name will be good luck.

We have been told by some of our guests after spending time on **Shibumi** that they begin to understand the definition further. For this we are happy and continually try to improve and upgrade our vessel. Another word comes to mind; CANEI. This is an acronym for "Constant And Never Ending Improvement". We hope through the benefits of charter income to never stop improving **Shibumi**.

Shibumi Reminders and First Aid/Fire Extinguisher Locations

- Before shifting the engines into reverse, ALWAYS make sure the stabilizers are LOCKED/Center. The switch for the stabilizers is located over head on the starboard side in the Wheel House. The switch should be all the way to the LEFT for the LOCKED/Center position and all of the way to the RIGHT for ON.
- If you plan on climbing into the crow's nest make sure that the RADAR SCANNER IS OFF. The large wing that is positioned just forward of the crows nest rotates and could injure you or damage the open array with one of your body parts.
- If you enter the engine room while cruising, please wear ear protection hanging outside the engine room door. The engine room door should always be closed while under way. Use caution while the engines are running. There are many rotating parts that could catch your clothing or hair. Please be cautious in the engine room at all times as there are many sensitive systems in this area.
- There are life preservers located in the dinghy, the California Deck storage and in the forward helm cabinets on the flybridge.
- First Aid is located in the cabinet just aft of the day head on the starboard side of the salon.
- Portable fire extinguishers are located in each stateroom, Salon, galley, day head, and wheelhouse. An Automatic fire suppression system is located in the Engine Room.
- Make sure that only ONE fuel tank is online at a time. DO NOT OPEN THE VALVES FOR MORE THAN ONE FUEL SUPPLY AND RETURN TO THE SAME TANK! The fuel tanks will gravity feed to the lowest side. If the boat is listing because of weight it will list further. In a long range vessel this is a safety to avoid contaminated fuel, provides the ability to balance the vessel and makes it easy to calculate fuel usage. Use only the Port Main and Starboard Main fuel tanks. The fuel manifold is located in the engine room, forward of the Starboard main engine, under the workbench.
- The holding tanks (black water) should be monitored daily. There is a tank monitor located on the front of the sink cabinet in the day head. Push the button for the desired tank to check. Pump out to an approved facility as necessary.

Quick Start Checklist

At beginning of Charter

- Power panel: All "Green" breakers ALWAYS ON, "Yellow" items ON FOR CRUISING, "Red" breakers ON AS NEEDED
- Install the American Flag and DF Burgee in the flange on rail in the cockpit and bow rail respectively.

First Thing Each Day

- Check Weather on VHF then monitor CH 16
- Check tides and currents for planned route.
- Check engine oil. Add oil when below lower line.
- Check coolant in mains. Do not add coolant when engines are warm.
- Check Generator oil. ½ quart represents the entire dipstick. Do not overfill! There is generally no reason to add oil between oil changes.
- Check water tank levels. Balance the boat with Water Tank levels.
- Check fuel levels at each sight tube then shut off valves.
- Check holding tank indicators. (Located in Day Head)
- Are all portholes closed and secure?
- Turn off anchor light if illuminated.
- Check power usage and voltage for all four battery banks and start Generator to charge when shore power is unavailable.

Starting Engines (Complete instructions on Page 12)

- Wheelhouse instruments ON and warmed up.
- Stabilizers in "Locked-Center" position for maneuvering.
- Turn ship's computer UPS and computer on with navigation software running.
- Move shift and throttle controls and ships wheel for and aft before starting engines.
- Make sure shift controls are in neutral
- Ignition Switch to ON, low oil pressure buzzer will sound.
- Press start button
- Run engine at least one minute at 800 rpm then idle.
- Check engine gauges.
- Repeat procedure for other engine.



Generator Starting/Stopping

- Select Port or Starboard generator based on electric requirements.
- Hold "Preheat" switch for 15 seconds, then hold both "Preheat" and "Start" until generator starts and green run lights are illuminated.
- Check exhaust outlet for water flow on the appropriate side.
- After one minute for warm-up select the proper breaker (green light) and lift to turn on.
- Stopping: Switch breaker off, wait one minute for cool-down.
- Hold Stop button until generator stops.

Before Leaving Dock

Shibumi was designed as a "Generator Boat". We are converting systems over time to be more energy efficient with the goal of running without a generator however until then we run a generator while underway.

- Switch shore power breaker to off position on panel.
- Turn off dockside shore power breaker.
- Disconnect shore power cord from shore side first, remove adapters and stow all in starboard cabinet of Portuguese bridge.
- Make lines ready to bring aboard and insure that they cannot foul a propeller.

Soon After Leaving Dock

- Fenders hauled aboard and stowed.
- Remove lines and place safely on deck or hang on Rocket Launch in cockpit about granite counter top. Stow any other deck gear.
- Doors and hatches closed and secured as appropriate.
- Run with stabilizers in Locked-Centered or On but never Off. Running with the stabilizers in the "Off" position will put tremendous force on the hydraulic rams and push oil out the seals.

Underway

- "Every vessel shall at all times maintain a proper look-out..."
72COLREGS.
- RPM under 1200 until engines warm to 140°. (Best cruising 1500-1800 RPM.)
- Be courteous, watch your wake.

Approaching Dock

- Fenders out on appropriate side.
- Thruster power ON in case they are needed.
- Stabilizers in "Locked-Center" position.
- Engines idle, wheel centered for engine/thruster maneuvering.

- Come to a complete stop before maneuvering.
- Mate ready to secure appropriate line (amidships line first).

Upon Arrival at Dock in Marina

- Lines secure, including spring lines.
- Make sure dock and boat breakers are both off before connecting cord.
- Connect shore power cord to forward or aft inlet then select on panel.
- Turn on dock and shore power breakers.
- Shore power available displays green light above Breaker.
- Monitor electric use and limit to capacity of shore facilities and connections.

Mooring at Anchor

- Stabilizers in "Locked-Center" Position.
- Anchor is lowered per **Anchoring** instructions (Page 14).
- Desired scope should be 3:1 or 4:1 for most sheltered coves.

Stopping Engines

- Use Stop Button before switching ignition to OFF.
(Stop solenoids are electric so they will not operate without Ignition.)

Overnight Checklist in Marina

- Shore power "On".
- Check that appropriate breakers and chargers are on.

Overnight at Anchor

- Run generator to maintain battery charge as needed.
- Anchor light "On".
- Check DC consumption at Magnum remote display and DC amp meter.
- TURN OFF THRUSTER BREAKERS SO INVERTER DOES NOT CHARGE.
- Turn off Inverter to conserve Power
- Turn off unnecessary DC electrical items including radios, lights, etc.
- Turn off Hydronic heat at night to conserve fuel and battery power.

End of Charter before leaving vessel (See *Shibumi* Check-in pg 10)

- Fill fuel and water tanks.
- Empty both holding tanks
- Turn off toggle switch on each Heat Thermostat (5)
- Shore Power connected?
- Power panel: All breakers "Off" except green labels.
- Canvas covers on in all locations appropriate.
- Blinds closed for sunlight and theft deterrent.

Check-In list for Shibumi

1. Dive the boat,
 - a. Check the hull for fiberglass damage or scratches.
 - b. Props
 - c. Stabilizers
 - d. Thruster Props
 - e. Underwater gear
 - f. Check the sea chest grate for any debris.
 - g. Sacrificial Anodes
 - i. 4 - shaft anode's (2 on each prop shaft)
 - ii. 2 - 5" button type anode (1 on each rudder)
 - iii. 2 - 5" button type anode (1 on each V-strut)
 - iv. 4 - Lewmar Thruster anodes (2-bow, 2-stern)
 - v. 1 - "Diver's Dream" plate anode on the transom.
2. Check the railings for damage to the varnished surfaces.
3. Check the Dinghy for damage along with the fuel level, battery level and water is drained from hull.
4. Check Dinghy Propeller for Damage
5. Make sure the port railing next to the davit is secure and all eye bolts are in place. Check for any damage to the path (fiberglass, stainless, etc) of launching and retrieving the dinghy from the fly deck to the water level.
6. Make sure that the dinghy has all tie-down straps in place.
7. Check to make sure bow and stern anchors are secure.
8. Hang extra lines in the lazarette.
9. Check the barbeque for use, propane in the cockpit cabinet and clean accordingly.
10. Galley propane tanks are located on the starboard side of the flybridge.
11. The covers should be reinstalled on the Flybridge, Dinghy, Barbeque, Windlass, Bunkroom Hatch, and instrument covers on the flybridge.
12. Remove the flag from the stern and stow it in the California deck overhead rod holder.
13. Remove the Burgee from the Bow and stow it in the wheelhouse.

14. The lazarette should be organized with the crab pot and crab ring, the extra power supply cords being clean and secured.
15. The power cord adaptors should be located in the starboard Portuguese bridge cabinet.
16. The domestic water tanks should be full or refilled.
17. The fuel tanks should be full or refilled.
18. Both Holding Tanks must be emptied.
19. Window blinds should be closed when the charter is finished to alleviate UV damage to the interior of the saloon.
20. Turn each heating thermostat switch to OFF. Thermostats are located in the master stateroom, VIP stateroom, bunk room, salon and wheelhouse.



Shibumi Start-up Procedure

1. Check the oil level in both CAT engines. The dip stick handles are Blue in color and the CAT oil levels should be between the hash marks. **DO NOT OVERFILL THE OIL CAPACITY** of the engines. Add one quart of oil only when the level is below the lower line. It will still be below the upper line.
2. Check the oil level in both Westerbeke generators. The port generator (8kw) holds 3.3 quarts total. The starboard generator (12.5kw) holds 4.5 quarts. The dipsticks show only ½ quart change. **Do not add if level is anywhere on the dipstick.**
3. Complete a visual check of the engine room for leaks, loose items that should be secured, or anything unusual.
4. Confirm that you have chosen the correct fuel tank to draw from and return to. Remember, only draw from and return to the **same** tank. (See Fuel Management for details)
5. Close and “dog” the engine room door.
6. Review the exterior area around the hull and the flybridge to confirm that there are no obstacles in the water or loose items that should be secured.
7. Open the Lazarette hatch in the cockpit and make sure the Stern Thruster power switch on the transom wall is turned to “ON”.
8. Open the forward floor hatch in the mid ship stateroom and make sure the Bow Thruster switch (located just forward and on the starboard side of the hatch) is turned to “ON”.
9. Leave ON the “Bow Thruster Charger” and “Aft Thruster Charger” breakers in the main electrical power panel. The breakers are located in the lower left portion of the panel.
10. Make sure the Stabilizer switch, (located overhead in the Wheel house on the starboard side above the helm), is turned to the “Locked Center” position (far left) for maneuvering.
11. Start either the 8kw or 12.5kw generator depending on power requirements. The 8kw generator will provide approximately 65 amps of power and the 12.5kw generator will provide approximately 100 amps. (See generator instructions if necessary)
12. Review your power usage and the main breaker panel to make sure you have power to everything you need to get underway.
13. Make sure the shore power is disconnected. (See instructions if necessary)
14. Check to make sure that the shift levers are in the neutral position.
15. To start one engine, switch Ignition to the “ON” position (the alarm will sound signifying low oil pressure). Then push the start button for the same engine for a few seconds, the



engine should start easily. When the engine starts, adjust the idle to 800 RPM for that engine. Repeat the above procedure for the second engine.

16. After the engines run for a minute or two idle the engines down. You may test the bow and stern thrusters both left and right by moving the levers for a half second in each direction.

17. Push the power button at the bottom of the thruster control. The thruster power is "ON" when the green and red lights are illuminated on the control. Turning on the lower helm thruster control does not turn on the upper helm thruster control.



18. You are ready to untie from your moorage and maneuver away.

19. It is good to station your crew around Shibumi as additional eyes to make sure you have lots of clearance from obstructions. Remember, Shibumi is 60' in length and has a beam of 17'. Bridge clearance is approximately 30' above the water. She draws 5' and weighs 45 tons and will react slowly but predictably.

20. Make sure all mooring lines, fenders and anything that is loose is stowed before getting underway. No lines should be stored in the port or starboard walkways as they could fall overboard and foul the props.

21. Turn on the Stabilizers after you are under way and will not be using reverse to maneuver. If the stabilizers are not locked and centered when reversing, they will try to balance the boat while moving backwards and may give unpredictable results. Stabilizers must be pinned if running in the off position. Fin movement will put tremendous pressure on the hydraulic rams forcing oil out the seals.

22. Turn on the VHF radios (monitor channel 16), the synchronizer, and the auto pilot if you are using them.

23. The WHAM handset operates the upper VHF from the pilothouse allowing you to monitor two stations simultaneously.

24. If you are using the Radar, turn on the main power switch under the right front portion of the screen and wait for the unit to countdown (3 minutes) and come to "standby" before turning on the scanner via the switch under the left front portion of the radar screen then push the "stby/tx" button on the panel. This button toggles between standby and transmit.

25. When coming into port, make sure the stabilizers are in the **Locked Center** position so that you can maneuver. Shibumi will react unpredictably in reverse, with the stabilizers "ON" or "OFF".

Anchoring

Chain Markings

The anchor rode consists of 400' of chain with about 20' of nylon line at the "bitter end". The nylon line is used in case of emergency to release the anchor by cutting the line. Shibumi's main anchor is a 50 kg Bruce style anchor.

1. The chain is marked with paint to aid in determining proper scope.
2. White is marked each 25'
3. Blue is marked each 50'
4. Red is marked each 100'

These markings are listed on the Anchor windlass.

Windlass/Capstan

The windlass on Shibumi is a commercial variety. To let the anchor out the brake is released by turning the wheel counterclockwise which allows the anchor and chain to free fall. **Be careful when dropping the anchor so that it does not "run away"**. Retrieval of the anchor is by 12 volt electric motor.

Scope and tide swing

Proper scope is important for safe anchoring. The sheltered coves of the Northwest require a 3:1 or 4:1 scope. Scope is the relationship of length of rode (chain, line, cable) to the depth of the water. If the water is 20' deep, 3:1 scope would be 60' of chain from the surface of the water. Greater scope will increase the diameter the boat will travel during the changing wind and tide. Longer scope than your neighbor could swing you into their path. The greater the scope the more holding power the anchor will have. Heavy conditions could require a scope as much as 10:1 and would indicate a poor choice for the night.

It is important to check the tide tables to know at what point in the range you are anchoring. It is not uncommon to see a 15' change from high to low tide. If you anchor in 10' at low tide with 30' of rode, at high tide you will have 30' of rode in 25' of water. This situation would not provide an effective amount of holding power. Likewise, anchoring in the same conditions at high tide could put you hard aground at low tide.

Setting the Anchor

1. The boat should be stopped facing into the wind.
2. Ensure that the "Windlass" breaker on the DC panel is on.
3. Remove the cover from the windlass.

4. Tighten the brake by turning the brake wheel clockwise (It should have been left "released" against the dog.)
5. Release the 1/2" tag line from the anchor to the cleat.
6. The anchor is not self launching so you will need to pull out by hand about 2' of chain and lay into the windlass gypsy.
7. Carefully lower the anchor over the roller making sure the chain is locked in the gypsy, dog is on and the brake tightened.
8. Touch the Windlass deck switch to raise the chain slightly allowing the release of the windlass "dog".
9. Turn the brake wheel counterclockwise slightly and the anchor will freefall.
10. If the brake binds be VERY CAREFUL starting the anchor moving.
11. Control the speed by turning the brake wheel clockwise to tighten and counterclockwise to loosen.
12. Let out the proper amount of rode based on scope desired.
13. Put both engines astern momentarily to put a strain on the anchor.
14. Verify the anchor is set by seeing the boat move forward and slack the chain.
15. Install a single or double chain snubber from portside Portuguese cabinet and allow tension to be held by the line.
16. Replace the windlass "dog" and **release** the windlass brake several turns to allow the weight to be taken by the "dog".

Retrieving the Anchor

1. Leave the windlass "dog" in place.
2. Tighten the windlass brake by turning the wheel clockwise.
3. Step on the windlass switch to retrieve the anchor.
4. **Wash the chain** with plenty of fresh water (hose fitting on deck) as it is retrieved.
5. As the chain tightens and starts to bog down the windlass pause anchor retrieval until the boat catches up then continue.
6. When the anchor is clear of the water make sure it is clean of mud. A boat brush and hose may be used to assist this.
7. Be careful for the last couple feet to make sure the anchor is facing the proper direction.
8. Tie the anchor down using the 1/2" tag line.
9. Release the brake by turning the wheel counterclockwise several turns and allow the weight of the chain to be supported by the windlass "dog" and tag line.

Dinghy

Launching the Dinghy

1. Turn on the Davit Breaker on the main electric panel. It is the 5th switch from the bottom in the 2nd row from the left. This is an AC breaker so the generator must be running or attached to shore power.
2. Locate the dinghy key and davit control (should be in starboard side drawer in wheelhouse under radar).
3. Remove rail from port side of boat deck by unscrewing the four (4) thumb screws. Place the rail out of the way.
4. Prepare the davit for use:
 - a. Insert the davit control cord into back side of davit.
 - b. Press the "out" button to release the tension to unclip the cable.
 - c. Lift the cable end of the davit past the last (third) pin hole and place pin through arm.
5. Attach the davit to the dinghy bridle.
6. Remove the tie-downs from the dinghy.
7. Press the "in" button to raise the dinghy until the Dinghy will clear the lower bar of the railing.
8. Swing the dinghy outward until it is parallel to the Port side of ***Shibumi***. (Both launch and retrieval of the dinghy requires the bow to face the stern of ***Shibumi***.) Be careful not to hit the railing sides or upright Place a person on the California deck level to guide the dinghy.
9. Press "out" until the dinghy is floating.
10. Unclip the three snap hooks of the bridle from the dinghy and retrieve the cable.
11. Clip the bridle hooks to the boat deck.
12. Store the davit control in the starboard drawer under the radar.
13. Replace the port side rail and clip the safety chain at the opening of the rails.

Starting the Dinghy

1. Turn on the main battery switch located under the steering wheel.
2. Tilt the outboard up (button on throttle or engine) pivot the lock out of the way and lower outboard.
3. Turn on the fuel line by putting the lever in-line with the hose.
4. Squeeze the fuel bulb until fuel fills the line.
5. The engine is fuel injected so there is no choke and no need to move the throttle.
6. Make sure the red kill switch is attached and turn the key.
7. Let the engine idle for a minute or so.

Retrieving the Dinghy

1. **Shut off the gas line and run the gas from the engine.**
2. **Run the bilge pump** to insure there is no water in the dinghy.
3. Raise the outboard, pivot tilt lock and lower outboard onto lock.
4. Remove the portside rail and remove the safety chain on the boat deck.
5. Attach the davit control to the back of the davit.
6. Turn the dinghy so that it's bow is facing the stern of **Shibumi** on the Port side
7. Lower the cable and bridle.
8. Attach the longest line of the bridle to the bow shackle.
9. Attach the two shorter lines of the bridle to the stern shackles.
10. Make sure the carabiners are locked.
11. Press the "in" button on the davit control until the Dinghy is able to clear the lower railing.
12. Pivot the dinghy (transom first) until it is over the chocks. Be careful not to hit the rails with the dinghy.
13. Position the dinghy so the propeller is just above the stern light on the deck.
14. Lower the dinghy keeping it centered on the chocks.
15. Secure the tie-downs.
16. Unsnap the cable from the bridle.
17. Lower the davit by removing pin and placing in loop. Upward pressure on the davit will make it easier to remove pin.
18. Snap the cable to the deck plate.
19. Press "in" until cable is snug. **Be careful not to over-tighten.**

Domestic Water

Location and operation of the domestic water supply system

The domestic water tanks supply the kitchen, icemaker, sinks and showers, the spigot on the bow adjacent to the Windlass and the sink that is located in the cockpit. There are two 250 gallon stainless steel water tanks located as follows;

1. The starboard tank is located at the base of the aft staircase behind the cabinet door, accessed from the salon.
2. The port tank is located in the cabinet next to the head in the master bath.

The fresh water pump is what pressurizes the system and is located just forward of the port main engine. The pressure accumulator for the domestic water system keeps the pump from cycling on and off for a small water demand. It is located just Aft of the port generator above the port main fuel tank.



Shibumi has a watermaker which makes fresh water from sea water. The watermaker should not be used in marinas or where the water is not clean. The watermaker is located just forward of the starboard generator above the starboard main fuel tank. See instructions below if arrangements have been made for use.

Checking level

Each water tank has a sight tube similar to the sight tubes for the fuel tanks. By checking often you will have a good idea of water usage. In general, more water is used per day than fuel so we balance the boat with water.

1. Locate the sight tube for the desired tank.
2. Open the top and bottom valves.
3. Read the level of the tank.
4. The masking tape above the workbench in the engine room may be used to mark the sight tube.
5. Shut off the valves on the top and bottom. (For safety never leave valves open.)

Filling

1. There are two deck plates, one on each side just forward of the walkway doors to the California deck. The deck key is located in the portside drawer in the wheelhouse.
2. After turning on the hose supplying domestic water from the pier, let the water run through the hose (overboard) for a minute or two to

wash any contaminated water from the hose. Fill tanks until water comes out the vent on the hull just outside the deck fill.

3. Be sure to return the deck key to the drawer in the wheelhouse.

Sanitizing Water

The Red Cross recommends sanitizing water using Bleach. Charter guests will not need to do this procedure because the water turns over rapidly in the tank. The following is what the Shibumi Owners do in the off-season to insure all water in the tanks and lines stays fresh.

1. 16 eye drops of bleach per gallon of water.
2. 60 drops = 1 teaspoon; 3 teaspoons=1 tablespoon; 2 tablespoons=1 ounce. Therefore 1 ounce treats 22.5 Gallons.
3. Each of Shibumi's tanks are 250 gallons so we add approximately 11 ounces of bleach (1-1/2 cups) to each tank.

Purging an air bubble

1. An air bubble can form if a tank is run completely dry.
2. Simply open the full tank and shut off the empty tank.
3. If the pump will not "pull through" the bubble there is a bleeder setscrew on the top of the pump.
4. Turn the screw counter-clockwise until the air bubble is expelled.
5. If both tanks are completely dry turn off the water pump breaker on the Breaker Panel in the wheelhouse.



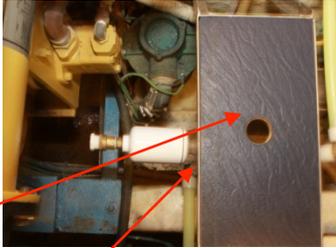
Balancing the level of Shibumi

1. Fuel burn is roughly one gallon per mile. Changing fuel feed from port to starboard each day or every other day should keep fuel tanks even.
2. Each water tank holds 250 gallons, which amounts to 2,000 pounds per side. Because most people use more water than fuel per day, it is easy to balance the level by changing water tank feed.
3. To change the water supply from one tank to the other, first open the new tank by turning the supply valve to the open position and close the supply valve on the old tank. The new supply valve is opened first in case the water system is in use. The location of the supply valve for the port tank is under the sink in the master bath. The valve for the starboard tank is located inside the cabinet at the bottom of the aft staircase.

Watermaker

The watermaker is kept treated and preserved when not in use so separate arrangements must be made prior your voyage. The watermaker can fill either of the domestic water tanks. For typical northwest cruising it is not necessary because potable water is readily available. For extended trips it can be a valuable system. The system should be run for a minimum of one hour. When it is not used for extended periods it should be "pickled" (chemicals are fed into the system).

Detailed instructions are located in the ships manuals. If you have made prior arrangements here is a checklist of items for proper use.

1. Open the through-hull fitting located on the sea chest marked Watermaker. To open this style valve, release the small "T" handle, turn the longer yellow handle and retighten the "T" handle. The valve is open when the yellow handle lines up with the flow of water. It is under the blue step. 
 2. Insure that the valve for flushing is closed.
 3. Insure that fresh 5-micron and 20-micron pre-filters are installed. The filter baskets are mounted on the starboard side of the work bench.
 4. Turn the backpressure control knob fully counterclockwise.
 5. Press the Power button.
 6. The low pressure gauge is on the left and the high pressure gauge is on right. 
 7. Run unit until the water runs clear on the low pressure side of the unit (3-4 minutes).
 8. When the water runs clear (no more bubbles) increase the backpressure control knob clockwise until the high pressure side runs clear and the gauge stabilizes at approximately 850psi.
- NOTE:** As the seawater temperature rises the pressure must be reduced.
85° = 775psi, 75° = 800psi, 70° = 850psi, 60° = 900psi, 55° = 950psi
9. Check the unit for leaks of water or oil.
 10. Monitor the pressure regularly for the first ten minutes of operation during which time all the air is being purged from the lines and may make the pressure vary.
 11. The "Quality High" light should remain lit continuously.
 12. To shut down simply turn the backpressure fully counterclockwise and press the power button.

13. If the Low Pressure Fault light is on, the 20 micron pre-filter is probably clogged. This is a common occurrence in the Puget Sound and extra 20 micron filters should be brought along.

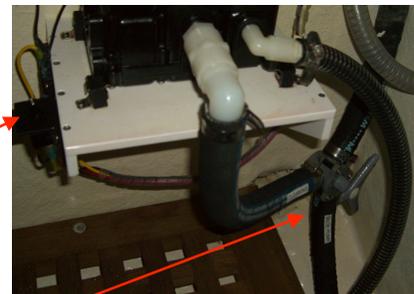
Watermaker Freshwater Flush

1. Do not leave the watermaker unused for more a month without flushing it with fresh water.
2. To do so make sure the seawater through hull is closed and install a charcoal filter in the 20 micron filter location.
3. Attach the hose from the domestic water (above the Port Engine) to the outboard side of the thru hull fitting. The Charcoal filter will remove any Chlorine that is in the fresh water. Chlorine will destroy the high pressure membrane.
4. Turn on the hose 2/3 and turn on the watermaker as above.
5. Verify the Low Pressure is mid-range (4-15 psi) and adjust with the hose valve.
6. Run the watermaker for 15 minutes at 800psi then shut down by turning the backpressure fully counter clockwise and turning off the power.
7. Turn off all valves and clean the pre-filters.

VIP Bilge Washdown Operation

This system is not for use by charter guests. This operation is for cleaning purposes only and the valves should never be left in the cleaning mode. Leaving the valve in the cleaning mode will render the VIP bilge pump inoperable.

1. Scrub the bilge with brush, cleaner and water.
2. Turn the valve to "Cleaning" mode.
3. Switch the toggle to the on position.
4. When the bilge is pumped dry switch the toggle to the off position. Some water will drain back into the bilge because of the height of the discharge line.
5. Return the valve to the "Bilge Pump" mode as shown.



5. Return the valve to the "Bilge Pump" mode as shown.

WARNING: LEAVING THE VALVE IN THE CLEANING MODE WILL RENDER THE BILGE PUMP INOPERABLE. DO NOT LEAVE IN THE CLEANING MODE EVER!

the main electrical breaker for the “shore power” is OFF when connecting or disconnecting cords. You may then proceed to connect the power cord to the inlet located on the port side of the wheelhouse (Shore 1) or the inlet located in the cockpit (Shore 2). After connecting the power cord to this receptacle, feed the power cord to the power supply on the dock. Make sure the main breaker on the dock is OFF then connect the power cord to the power supply. Turn the Dockside Breaker on and return to Shibumi’s Electric Panel.

4. Select Shore 1 for bow plug location or Shore 2 for cockpit plug location. Note: The lights on this rotary selector panel will only light when 240v power is available. There are currently no 240v items on Shibumi. Turn the shore power breaker



to the “ON” position. Verify you have power to the main electrical distribution panel for Shibumi by looking for the illuminated light above the shore power breaker and the AC voltage gauge on the top left side of panel. (Note: If the red “Reverse Polarity” indicator light is illuminated turn off the power breaker and contact the marina manager. Reverse polarity indicates the “line” and “common” wires are reversed and can damage electronic equipment.) Turn on the proper breakers to supply power to the circuits needed. Please review the Green, Yellow and Red designations for each circuit as you connect and disconnect the panel to/from the power supply.

5. To disconnect Shibumi from shore power, turn “OFF” the shore power breaker on the main electrical panel, turn “OFF” the power on the dock and disconnect the power cord from the dock first, then from Shibumi. Close the shorepower cover on Shibumi. Stow the cord in the Starboard Portuguese Bridge cabinet.

Generators

1. Confirm that both of the main electrical breakers for the generators are in the OFF position. Decide which generator you wish to use. The 8kw generator will provide approximately 65 amps of power and the 12.5kw generator will provide approximately 100 amps. If you are not using the electric heat and are either cruising or at anchor, you may wish to use the smaller 8K “Port” generator. If you are going to be using the electric heaters, the hot water heaters and the washer/dryer, you may want to use the 12.5K “Starboard” generator. The main electrical distribution panel only allows for the use of one AC power source at a time.
2. On the upper left side of the main electrical panel, there are controls for each generator. The far-left toggle switch is for the glow plug “PRE

HEAT”, the center toggle switch is for “Start” and the round silver button is the “Stop” button for each generator. When you have chosen the proper generator for your use and have confirmed that all of the generator main breakers are in the “OFF” position, push the respective PRE HEAT switch down and hold for 15-20 seconds then while continuing to hold the PRE HEAT switch down, push the starter switch down to start the respective generator. When the generator is cranking the green light next to the switches will illuminate. When the generator starts and the run light is illuminated, (which should be within a second or two), release both of the switches you have used to start the generator. After allowing the generator to warm up for a minute or two, turn the respective main electrical breaker for that generator to the up/ON position. This will electrify the panel and will allow you to use the 120-volt power supply, charge the batteries and operate all of the electrical fixtures on Shibumi. Gauges for both generators are located on the control panel in the Wheel House.

Inverter/Charger

Shibumi is equipped with a Magnum 2800 watt pure sine inverter with 125 amp charging capability. An inverter converts 12 volt battery power into 115 volt AC power. Using Ohms Law ($\text{Watts} = \text{Voltage} * \text{Amps}$) we recognize it takes more amperage at 12 volts than 115 volts. The same 1,000 watt hair dryer that requires less than 9 amps at 115 volts requires almost 85 amps at 12 volts. Battery power needs to be conserved when shorepower is not available. The battery bank on Shibumi was relocated in 2007 to give 1,600 amp hours at 12 volts. (See Appendix A1 for engine room and lazarette wiring diagrams.) This should provide the prudent person with more than enough reserve for a day or more without charging.

Four breakers on the AC panel are designated for the inverter. They are labeled with white backgrounds.

1. TV/Entertainment
2. Salon Plugs (most of the plugs in the salon are on this breaker).
3. Galley Plugs (the two on the aft counter of the galley)
4. Wheelhouse GFCI (for bunkroom outlet also)

When AC power is available from either generator or shore power the inverter will automatically feed directly from that source and the inverter should be turned off.

Charging System

It should be noted that Shibumi is a “generator boat”. The boat was designed to run a generator at all times



while cruising because of the number and type of electrical systems. We hope to reach our goal of being generator independent by continually upgrading to more efficient systems.

Battery voltage should be checked regularly for all four banks. The house bank is checked via the "Magnum" Monitor or the 12 volt gauge on the main electric panel. The bow thruster and stern thruster banks have separate chargers



and are charged when a generator or shore power is online. They may also be charged through the inverter but only while the engines are running. **At anchor when the engines are not running and there is no other charging source (shore power or generator) the thruster breakers MUST BE OFF otherwise the House bank will be dramatically reduced.** Each thruster draws on 24 volt power through two 12 volt batteries wired in series. The 12 volt house bank and start bank are charged by the main engines and charger as detailed below. The Start bank, Stern thruster and bow thruster are monitored via three separate gauges next to the Magnum inverter panel.

In addition to AC charging from shore power or either generator an automatic charging relay was added in 2006. The ACR senses voltage in the house bank and starter battery. If the voltage in either bank exceeds 13.6 volts (charging condition) the relay is open and excess charge "bleeds" to the other bank. The ACR, located in the engine room has three positions; On, Auto and Off. The switch should be left in the Auto position to provide the voltage sensing capability.

In 2007 the house and start battery banks were updated to include two 8D batteries located between the main engines and eight 6 volt batteries in the lazarette wired in combination series/parallel to provide 1600ah of power. All wiring with the exception of the engine and generator starting is wired to the house bus. The alternator of the port engine is wired to the house bank therefore charging the house bank when it is running. The alternator for the starboard engine is wired to the start bank. Both generator alternators are wired to the start bank. Because the house bank is larger when both engines are running, and no other charge is present, the start bank will charge faster and the ACR will connect the banks allowing both engines to charge the house bank.

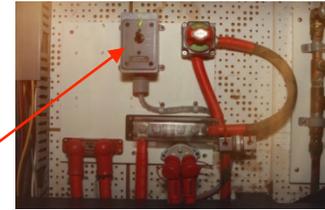
The inverter/charger is wired to the house bank to rapidly charge the house bank. Once again when the house bank exceeds 13.6 volts, the ACR connects the two banks and the start battery is "topped off".



It is important to monitor the condition of the batteries using the volt meters on the electric panel

and the Magnum remote panel located next to the Stabilizer control in the wheel house.

In the unlikely event when the start battery is depleted and unable to start the engines, the battery banks can be connected together by switching the ACR (located on the aft wall of the engine room under the washer/dryer) to the ON (up) position. RETURN SWITCH TO AUTO AFTER STARTING.



Also added in 2006 are fuses for all main battery wires. A spare fuse is wire tied to the corresponding wire. The purpose of the fuse is to protect the wire in an overload condition. If the fuse blows there is a major problem and the situation should be diagnosed prior to inserting a new fuse.

Electrical Systems

Computer Charting

Shibumi switched to Rosepoint Coastal Explorer in October of 2012 for the electronic charting system. All charts for waters currently covered for *Shibumi's* insurance binder are loaded. There is a primary and secondary GPS, either of which will feed information to the Navigation System. The selection switch is located the two Furuno GPS units. The Primary is newer and can lock onto 12 satellites while the secondary can lock onto 8.



An inverter outlet in the wheelhouse powers the computer after first going through a Battery Backup UPS. This allows the computer to remain active when switching between Shorepower, Generator or Inverter. A warning tone will be briefly heard when it switches. If no AC power is available the tone will give a tone intermittently. Turn the UPS off when no power is available (at anchor etc). The UPS is located in the cabinet below the chart drawers labeled "NAVIGATION UPS INSIDE". The power switch for the computer is just above the UPS inside the cabinet.



There is a backup inverter for use by the computer in the event the main Inverter is inoperable. It is located in the cabinet under the computer monitor. Unplug the white cord and plug directly into the inverter.

NOTE: The computer is for Navigation purposes only it is not to be used for any other purpose.

Wipers and Lights

The light switch panel is located the overhead in the wheelhouse. The "NAV LTS" breaker on the main panel controls power to the lights. Power to the wiper control panel is selected by the "WIPERS" circuit breaker.



VHF Radios

The Uniden radios in the Wheelhouse and on the Flybridge should be on and turned to channel 16 whenever operating the vessel. When *Shibumi* crosses into or out of Canada the radio will alert you to change the mode. To do this, press and hold the MEM/UCI button to scroll through the options.



Wheelhouse Stereo

The main 12 volt stereo is located in the wheelhouse. It is an Alpine with inputs for AUX using a cord with 1/8" pins, or a USB input for a thumb drive. Using the "Source" button on the head unit or remote will scroll through the inputs including Tuner and CD/MPS discs.



This stereo controls speakers in the Wheelhouse, Salon, California Deck and Flybridge using the speaker selector next to the head unit. The salon button turns on both salon and California deck. The bottom of each speaker on the California deck has a small toggle switch to turn it on or off.



Hydronic Heating System

Shibumi is equipped with a Kabola B-17 60,000 BTU hydronic heating system. The system has a diesel fired boiler located on top of the port main fuel tank forward of the generator. There are 5 thermostatically controlled zones;

1. Wheelhouse
2. Salon
3. Bunk Room
4. VIP Stateroom
5. Master Stateroom

In addition to these zones there is a fan unit for the California Deck and Defroster in the wheelhouse that do not require thermostats. These units will operate as fan units whether heat is available or not. Each stateroom,

the wheel house and day head have High-Off-Low fan switches. Do not use the center position on these switches or the boiler will run but no heat will be supplied. The California deck should be left "OFF" when not in use. The defroster has an Off-Low-Med-High switch located on the dash. A fuse for each zone is located inside the gray PLC (Programmable Logic Controller) in the engine room above the washer/dryer. The defroster has a circuit breaker located on the main DC panel in the wheelhouse.

Thermostats

The thermostat is the primary on/off switch for each zone. When any thermostat calls for heat the circulation pump and boiler are activated. Make sure that the fan switch is always left in the high or low position otherwise the boiler and pump will run but the heat will not be supplied to the room. Each thermostat has an ON/OFF switch and a temperature knob.



1. Switch the toggle to ON to activate the zone.
2. Turn the knob to the comfort level required.

The boiler system runs off the house bank of batteries and will shut down if the battery level falls below 11.8volts. If using the heat at anchor make sure the batteries have been charged prior to shutting off the generator if not on Shorepower. As standard practice heat is switched off at anchor to prolong battery life and conserve fuel.

Fan Units

Each fan unit has a heat exchanger and fan which blows air across the heat exchanger to heat the room. When the thermostat is first turned on the fan may blow cool air until the water in the zone circulates. This may take several minutes. **Do not leave the fan switch in the off position except for the California Deck and Defroster.** The California Deck and Defroster are not controlled by thermostats so they will run continuously. Leaving the others in the off position will run the pump and burn fuel for the boiler without heating when the thermostat is on.

Troubleshooting Hydronic Heat

If there is no heat present there are a number of items to check.

1. Is the house bank below 12 volts?
2. Is the thermostat turned on and above the current temperature?
Raise temperature setting until thermostat "clicks".
3. Is the fan running? Make sure switch is on High or Low (Not Off) if available. Might be the fuse for that zone in the PLC.

4. Is the face of the vent open (if applicable)?
5. Is the main breaker on Port side of the Kabola PLC on? Turn the breaker on (up)
6. Is the boiler power switch on (Red light)? Turn switch on. (located on gray Kabola PLC)
7. Is the red "fault" light illuminated? Push the small reset button on the aft side of the burner.
8. Is the green light illuminated, on the burner unit? Push the reset button.
9. Do any other zones have heat?



NOTE: When at anchor overnight turn all thermostats to the off position. The fans will draw down the battery bank to the point the boiler cannot ignite. You will need to bring the voltage back up then push the reset button on the Kabola unit per the above instructions..

Fuel Management

Checking level of Tanks

1. Locate the sight tube for the desired tank.
2. Open the top and bottom valves.
3. Read the level of the tank.
4. The masking tape above the workbench in the engine room may be used to mark the sight tube.
5. Shut off the valves on the top and bottom. (For safety never leave valves open.)

Fuel Manifold

The fuel system for diesel engines may appear complicated but is usually very simple. Diesel engines have fuel pumps which deliver the same amount of fuel no matter how fast they are running. More fuel is delivered to the engines than can possibly be used even at wide open throttle so excess fuel must be returned to the fuel tank. When the engine is running slow more fuel is returned because less is burned than at faster speeds.

Most pleasure boats for simplicity have either one tank or one tank for each engine. On a long range trawler like ***Shibumi*** multiple tanks are needed to increase the capacity because it is usually not possible to place very large

tanks on board. Fuel tends to slosh around in large fuel tanks even when baffles are added during construction. A benefit of multiple tanks is the ability to transfer fuel for weight distribution. A second benefit is the ability to "polish" the fuel in one pass by drawing from one tank and returning to another. The fuel passes through the Racor filter and is cleaned (or polished) of contaminants. The general rule of thumb is that fuel requires six passes through a filter if it is returned to the same tank.

On **Shibumi**, fuel is drawn from one tank and returned to the same tank. The exceptions would be when transferring fuel. With both engines running at approximately 2,000 rpm approximately 25 gallons per hour (GPH) is drawn from the tank and approximately 17 GPH is returned. Caution must be taken not to transfer fuel into a full tank or fuel will overflow through the tank vent. FEED FROM AND RETURN TO THE SAME TANK! The reason to draw from only one tank is that if more than one valve is open, gravity will transfer fuel. As the boat starts to list, fuel will be transferred in the direction the boat is listing accelerating the problem.

The fuel system on **Shibumi** consists of a "Return" manifold and a "Feed" manifold. Located behind the lower cabinet doors in front of the starboard engine, the upper manifold is the "Return" manifold and the lower manifold is the "Feed". The diagram on the inside cabinet door (and duplicated in Appendix A2) both illustrates the system and serves as a label showing which valves are open. For running, both engine and generator feed lines are left in the open position (lever in line with copper line). Note; the engine and generator return lines do not have valves. For charter cruising only the two main tanks are used. Depending on weight distribution fuel is fed from either the port or starboard main and returned to the same tank.



We usually start by feeding from the port tanks first (fuel as well as water) because **Shibumi** fully loaded is slightly heavier on the port side. This extra weight comes from two main components; the dinghy crane is mounted on the port side and the galley is located on the port side.



After topping off fuel leave the port main feed and port main return lines open.

Filling Tanks

1. Open the top and bottom site tube for the tank that is being filled.
2. Fill the tank and monitor the site tube.
3. If the opposite fuel tank is empty the site tube may give a false low reading because the site tube is on the inside of the tank.
4. After fueling close the top and bottom site tube valves.

Fuel Filters

1. The main fuel filters have vacuum gauges which indicate when the filters are beginning to clog.
2. If the gauge begins to get above 5psi, switch to the fresh filter.
3. Always turn on the new filter before turning off the used filter to insure constant fuel to the engines.
4. Both front and back valves on each filter must be turned to open or close the filter.
5. Spare filters are stored in bins below floorboards between the engines.



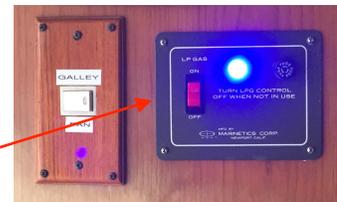
Galley

Stove Top & Oven

The fuel source for the range is propane. The propane tanks (2) are located in the forward starboard cabinet on the flybridge. The compartment is ventilated and the selector valve will point to the tank in use. When the tank is empty, turn the selector valve to choose the second tank. Open the tank valve on the new tank and shut-off the valve for the empty tank.

To operate the range:

1. Turn on the "L.P.G." electrical breaker on the main power panel. It is located on the far right, third switch from the top.
2. Turn on the LPG gas control switch located on the forward cabinet when facing the sink in the galley.
3. Each burner on the cooktop needs to be lit separately.
 - a. Push and turn the burner dial between HIGH and IGN. then push the red igniter button.
 - b. Hold the knob in for 4 or 5 seconds then adjust the flame to meet your cooking needs.
4. The oven has a pilot light under the bottom shelf inside the oven in front of the burner. NOTE: Light a burner first to purge the propane line of air before attempting to light the oven.
 - a. Push and turn the knob to PILOT and use a butane lighter or match to light the pilot. Hold in the oven knob for a few seconds until the pilot stays lit.



- b. The bottom of the oven may be used as a broiler but care must be taken because of the open flame.
- c. Adjust the temperature for the oven with the knob on the front of the range as needed.

When finished shut off all valves and switches.

Galley Blower

The galley fan is powered through the breaker labeled "Galley Blower". This breaker is the 12th breaker from the top in the second row of breakers from the right in the main power panel. Make sure the breaker is switched to "on". The switch for the Galley Exhaust Fan is located on the upper forward cabinet when you are facing the galley sink.

Dishwasher

The dishwasher is available for use when you either have shore power or power from one of the generators. Because the dishwasher drains directly overboard, use only half the amount of soap as your home dishwasher. Put dishwasher soap in the soap holder in the door, close the soap holder and latch the door then push the proper wash button on the front of the door to start the process.

Microwave

The microwave oven is available for use when you have AC power either from shorepower or a generator.

1. Add time
2. Press start.



Icemaker

The icemaker is located in the salon on the starboard side on a pull out drawer. Be sure to latch the drawer slide while underway. The icemaker is self contained unit that is not plumbed to water. Water is added to the labeled line under the ice basket. Three sizes of cubes may be selected. The smaller cubes will form quicker. It takes approximately 10 minutes for the first cubes to drop into the basket. The unit uses AC power via the "Ice Maker" circuit breaker on the electric panel.

When the power is interrupted, for example when shorepower is changed to generator power, the icemaker will shut off and will need to be restarted by pressing the power button. Water should be replaced every few days and drained when not in use. The water is emptied by placing a bowl under the drain on the left side of the icemaker unit.

Intercoms

There is a full set of intercoms on Shibumi. The DC breaker marked "Fly GPS/Intercom" will activate them. Their locations are as follows;

1. "Wheelhouse", to the right of the steering wheel.
2. "Flybridge", inside the port cabinet door labeled "Intercom".
3. "Galley"-Salon, port side of the china cabinet over the countertop.
4. "Engine room", port side of the forward overhead cabinet.
5. "Master" Quarters, starboard side of the headboard.
6. "VIP" Suite, forward side of the headboard.
7. "Cockpit", inside the cabinet door inside the port side cabinet labeled "Intercom".



To call another station, pick up the handset and push the numbered button to ring the station you wish to communicate with. There is a list on each instrument. To answer a buzzing intercom, pick up the handset and speak normally.

Heads

The heads are "Techma" Marine fresh water dry bowl units.

1. For liquid waste:
 - a. Use head
 - b. Push "Flush" button (on right) to empty bowl. Do not hold the button in as the water is metered automatically.

2. For solid waste: **PAPER IS SOLID!**

- a. Push "Pre-Fill" button (on left) before use. Do not hold the button in as the water is metered automatically.



- b. Use head
- c. Push "Flush" button (on right) to empty bowl. Do not hold the button in as the water is metered automatically.

3. Remember,

- a. DO NOT PUT ANYTHING DOWN THE HEADS THAT HAS NOT BEEN EATEN FIRST. Most experienced boaters dispose of paper in the trash receptacles.

b. Check the tank monitor located in Day head for tank level.

FOR EMERGENCY USE ONLY: The day head has a "Y" valve located under the removable panel below the sink. This is the only head with the ability to discharge directly overboard. This valve should only be used when in compliance with all rules and laws. When the "Y" valve is turned to "Overboard" the toilet will flush directly overboard. When the "Y" valve is turned to "Holding Tank" it will flush into the holding tank. The valve is wire tied in the "Holding Tank" mode so that it cannot be opened inadvertently. Before the "Y" valve can be used the thru-hull in the engine room labeled "Day Head" must be opened. The thru-hull is located above and forward of the starboard stabilizer.



Black water holding tank

The capacity of each of the two black water holding tanks is approximately 53 gallons for a total of 106 gallons. The two forward heads (bunk room and VIP room) empty into the forward tank. The two aft heads (master stateroom and day head) empty into the aft tank. **Techma heads use more water than most freshwater heads so they will fill the black water tank quicker.** Each flush requires approximately $\frac{3}{4}$ of a gallon and the "Pre-Fill" for solids will add an additional $\frac{1}{2}$ to $\frac{3}{4}$ gallon water. You must comply with all laws and rules when emptying this tank. There is a tank level monitor for your convenience located in the day head on the starboard side of the sink cabinet face. Select the tank to view the level. By checking frequently you will become familiar with how fast your group fills the tank.

Discharge the holding tank

To empty the holding tank at a pump-out station, locate the deck fittings on the port side of Shibumi, just outside the Galley window. They are labeled "Waste". The forward deck fitting is for the forward tank and the aft deck fitting is for the aft tank (makes sense). Open the deck fitting and push the pump-out nozzle into the fitting and proceed to empty the tank. When the tank has been pumped, check the Tank Level Monitor to confirm your success.

To empty the tank overboard, complying with all laws and rules; switch the breaker on the main power panel labeled "Macerator Pump". The breaker is located on the far right, 4 breakers from the top. Then, proceed to the Day Head. Inside the cabinet is a panel with a switch to select the tank (up for forward tank, down for aft, center for OFF) and a timer to turn on the power. Turn the timer to 12 minutes. The pump will turn on for 12 minutes and should



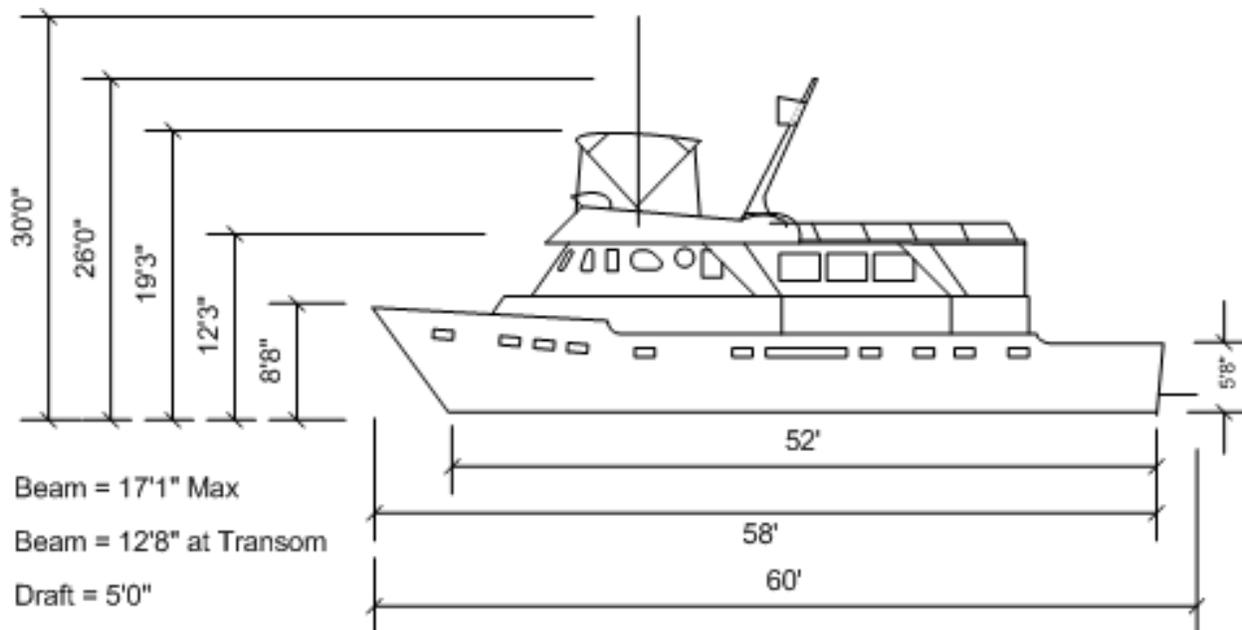
pump the tank empty. Check the Tank Level Monitor to confirm the tank is empty. Repeat the steps for the second tank if necessary. The tanks are polyethylene so if the monitor fails a visual inspection can be made of the tanks. The forward tank can be viewed from the forward hatch in the VIP room and the aft tank can be viewed from the aft hatch in the VIP.



Appendix A1

Shibumi Specifications/Dimensions:

| | |
|------------------------------------|------|
| Length Overall (LOA) | 60' |
| Length On Deck | 58' |
| Length at Waterline | 52' |
| Beam | 17' |
| Draft | 5' |
| Freeboard | 4' |
| Bridge Height | |
| Antennas Up | 30' |
| Antennas Down | 26' |
| Fuel (Gallons of Diesel) | |
| Charter Guest (425 per side) | 850 |
| Total | 1740 |
| Water (250 Gallons per side) | 500 |



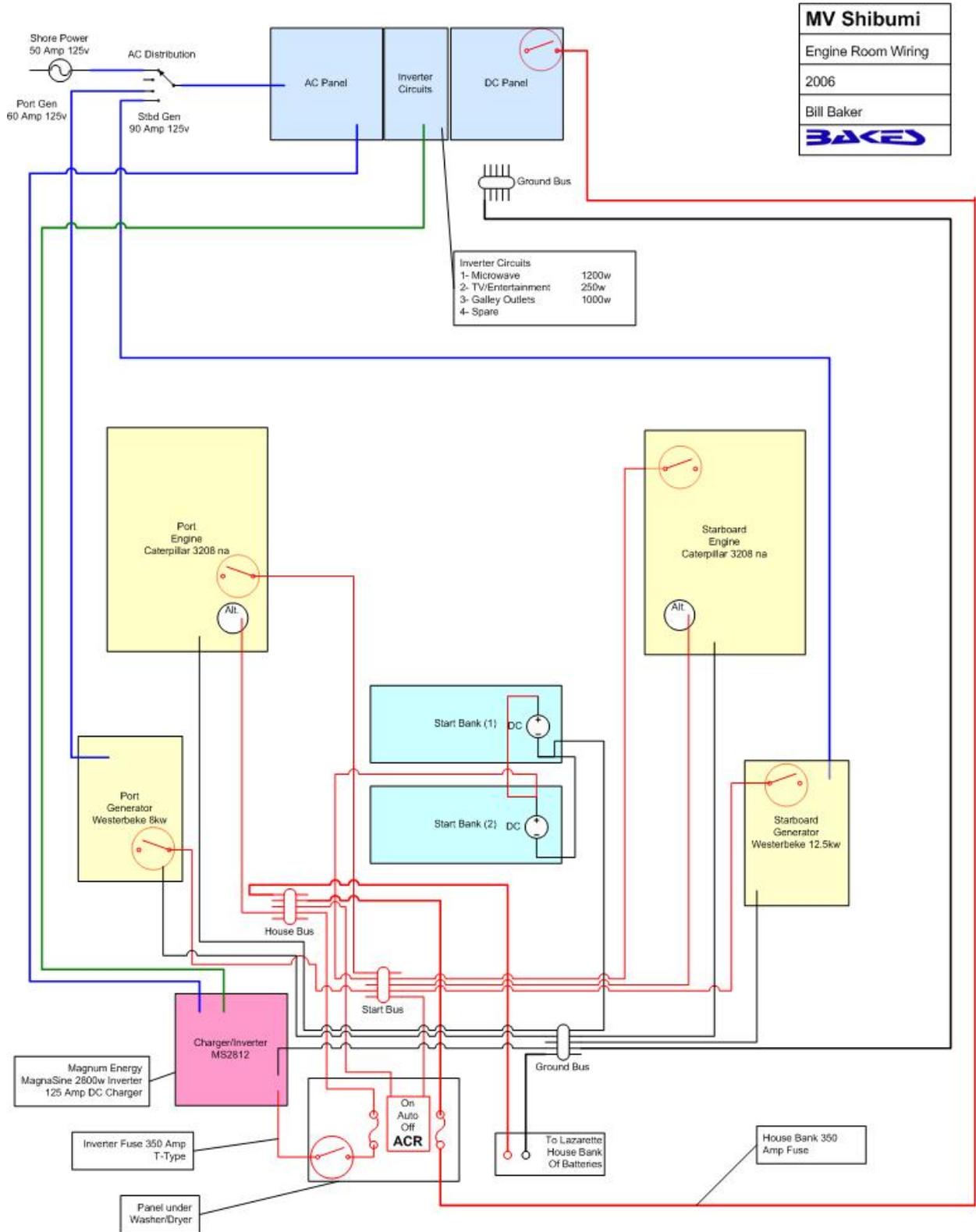
Beam = 17'1" Max

Beam = 12'8" at Transom

Draft = 5'0"

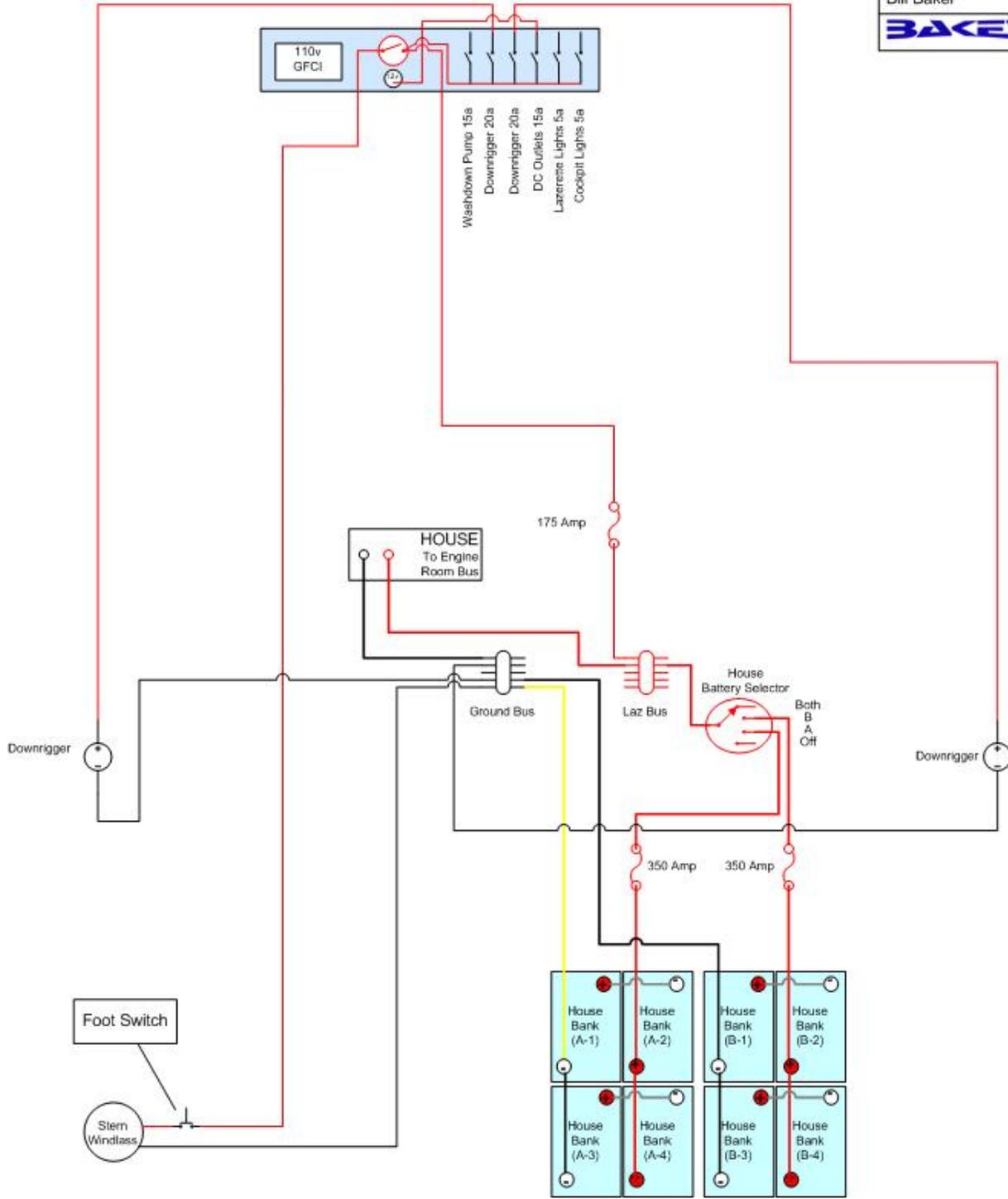
Draft and heights will change based on quantities of fuel and water.
 Approximate Fuel Weight = 13,000 lbs
 Approximate Water Weight = 4,000 lbs

Appendix A2



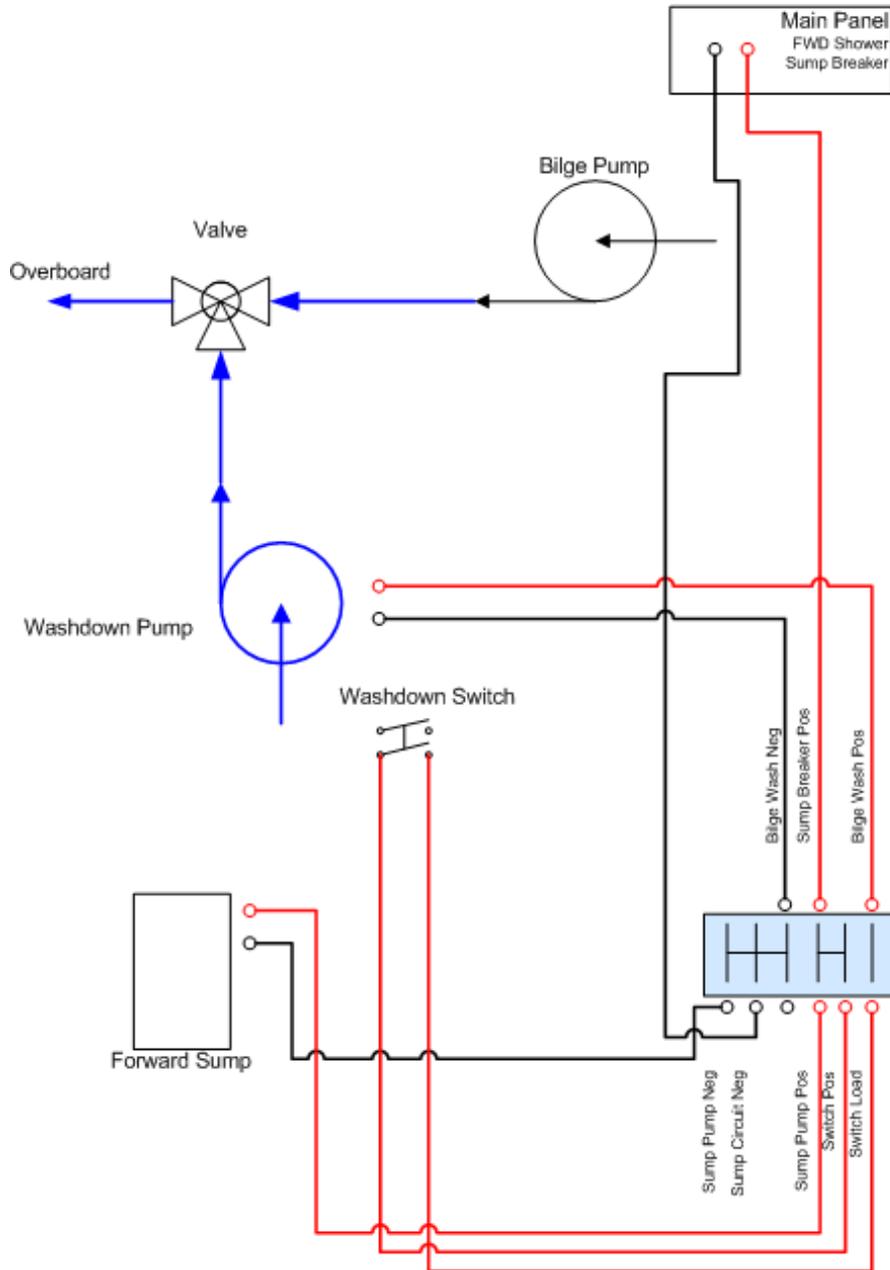
Appendix A3

| |
|-------------------|
| MV Shibumi |
| Lazarette Wiring |
| 2007 |
| Bill Baker |
| BAKER |



Appendix A4

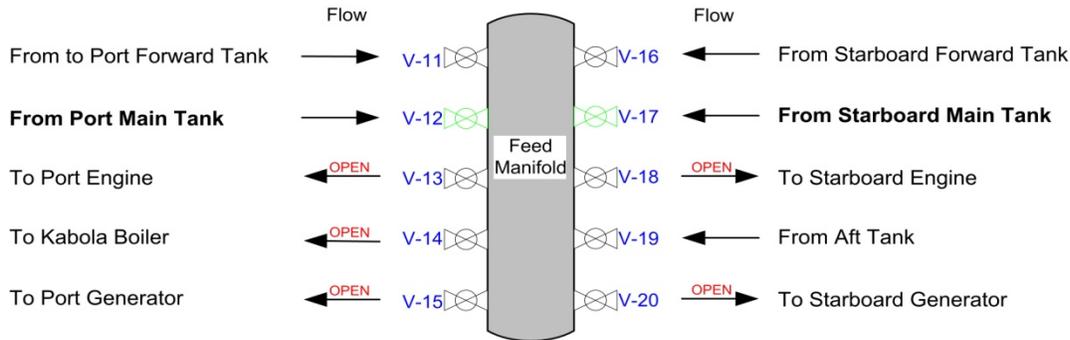
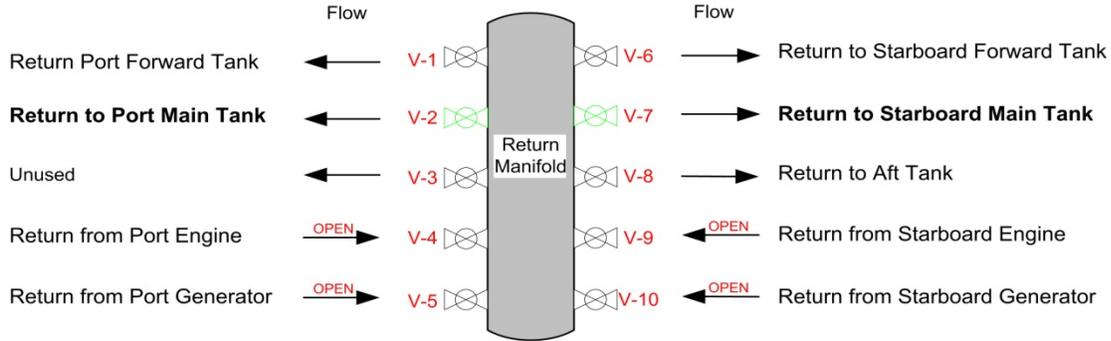
| |
|---|
| MV Shibumi |
| Bilge Wash Wiring |
| 2012 |
| Bill Baker |
|  |



Appendix A5

MV Shibumi Fuel Manifold

Open only One return and One feed Tank at a time.



Port Forward
R-V1
F-V11 310 Gallon
 Tank Valve Open Closed

Starboard Forward
 310 Gallon
 Tank Valve Open Closed
R-V6
F-V16

Port Main
R-V2
F-V12
 425 Gallons
 Tank Valve Open Closed

Port Engine
R-V4
To-V13
 Cat 3208 na
 210hp

Stbd Engine
R-V9
To-V18
 Cat 3208 na
 210hp

Starboard Main
R-V7
F-V17
 425 Gallons
 Tank Valve Open Closed

Port Generator
R-V5
To-V15
 8 kw

Aft
R-V8
F-V19
 270 Gallon
 Tank Valve Open Closed

Starboard Generator
R-V10
To-V20
 12.5 kw

| |
|-------------------|
| MV Shibumi |
| Fuel Manifold |
| 2010 |
| Bill Baker |
| BACES |

Appendix A6

Waste Management Plan MV Shibumi

1. Trash containers are located in the galley, each head, the engine room and on the California Deck.
2. Please deposit all trash in the designated containers.
3. When a trash container is full, empty into a trash bag and store in the cockpit.
4. Upon arrival in a port with shore-side disposal, transfer all trash from the boat to shore.
5. No trash will be thrown overboard or left ashore in areas not designated for disposal.

Appendix A7



FUEL BURN CALCULATION

MV Shibumi – 1991 60' DeFever Trawler Yacht

| Engine Speed Rpm | Engine Output Hp | Fuel Consumption Gph | Propeller Speed Rpm | Boat Speed Knots | 2-Main + Gen Consumption Gph | Fuel Efficiency Kpg | Propeller Efficiency Percent |
|---------------------|---------------------|-------------------------|------------------------|---------------------|------------------------------------|------------------------|---------------------------------|
| 600 | 2 | 0.1 | 203 | 3.0 | 0.6 | 5.1 | 87% |
| 800 | 5 | 0.3 | 270 | 4.0 | 1.0 | 4.0 | 85% |
| 1000 | 9 | 0.5 | 338 | 4.8 | 1.4 | 3.5 | 83% |
| 1200 | 16 | 0.9 | 405 | 5.7 | 2.2 | 2.6 | 81% |
| 1400 | 26 | 1.5 | 473 | 6.4 | 3.4 | 1.9 | 79% |
| 1600 | 39 | 2.2 | 541 | 7.2 | 4.8 | 1.5 | 77% |
| 1800 | 55 | 3.1 | 608 | 7.9 | 6.6 | 1.2 | 75% |
| 2000 | 76 | 4.2 | 676 | 8.5 | 8.8 | 1.0 | 73% |
| 2200 | 101 | 5.6 | 743 | 9.1 | 11.6 | 0.8 | 71% |
| 2400 | 131 | 7.3 | 811 | 9.7 | 15.0 | 0.6 | 69% |
| 2600 | 167 | 9.3 | 878 | 10.3 | 19.0 | 0.5 | 68% |
| 2800 | 208 | 11.6 | 946 | 10.8 | 23.6 | 0.5 | 66% |

NOTES

- Operating at or above 2200 rpm is not recommended with the "cruising" running gear installed on Shibumi.**
- Shibumi turns 30 inch diameter by 21 inch pitch four bladed propellers with 2.96:1 reduction gear ratio transmissions.
- Caterpillar **estimated** data sheets give fuel consumption for a 3208 NA as, 3.2 gph at 1800 rpm, 7.0 gph at 2400 rpm, and 11.9 gph at 2800 (WOT) rpm. Fuel consumption is estimated based upon 5.6 gph per 100 engine hp. 3208 NA is rated at 485 lb-ft at 1400 rpm, compression is 16.4:1, 10.5L (636 cid), bore is 4.50 and stroke is 5.00.
- Propeller efficiency is using $KPH = 0.0008234 * Pitch * RPM * Efficiency$ and degrades as propeller rpm increases.
- In practice, loaded for our normal cruising we have found both fuel consumption and speed in the calculated chart above to be surprisingly accurate at multiple RPM's. Numbers will vary with wind and current.
- Engine output includes 3% loss for the reverse/reduction gear.
- Engine output is assumed to vary with the cube of engine speed (a typical engine load characteristic.)
- The rated generator full load fuel consumptions are 1.1gph for 12.5kw and .82gph for 8kw. With the light loads after the addition of diesel heat we burn approximately 0.4 gph on Shibumi. The Kabola Diesel heat burns 0.1gph at 20% duty cycle when engines are off. 20% duty cycle is typical in 40°F weather.