

## ***Welcome Aboard!***

***INCEPTION*** is a 2001 Kadey-Krogen 58, powered by twin John Deere 158HP diesel engines. She can carry 1760 gallons of fuel and 450 gallons of water.

We hope you enjoy cruising with ***INCEPTION***. Please let us know if you find anything missing or in need of improvement.

While using or reviewing these notes, please feel free to mark corrections, and make suggestions and improvements. Your constructive criticism will be appreciated.

We know these Owner's Note seem like a lot to absorb but we think you will find that the boat is set up logically and with a lot of thought by the builder. We are confident you will be comfortable running the boat in short order and hope that you have the cruise of your dreams. Hopefully we will see you again next year!

Thank you.

**These notes are prepared for Quick Reference. Much of the information is taken from the Kadey-Krogen 58 Operator's Manual for this vessel, and from the component manufacturers' manuals that came with the boat. The Owner's Notes assume that the charter guest/operator is experienced and competent in the safe operation of a 97,000 pound, 63 foot power boat, and knowledgeable of boating rules and regulations. These notes do not attempt to anticipate every situation or occasion that may arise, and are not a substitute for reading the Owner's Manuals and other informational materials which are located on the boat, or for exercising reasonable care and good judgment in the handling and operation of the boat. NO WARRANTY IS EXPRESSED OR IMPLIED.**

# INCEPTION Owner's Notes 2015

revised 8/18/15

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# Important Vessel Numbers

**Vessel Name** Inception  
**Vessel Official Number** 1118096  
**Hull ID Number** CBK58004G101  
**Dinghy Registration** WN 0151 RP

## Capacities

Sleeps 4/6 Two in each stateroom (plus pilothouse convertible berth if desired)  
 Fuel 1760 Gallons in four tanks separately filled  
 Fresh water 400 Gallons  
 Holding Tank 100 Gallons

## Dimensions

Length Overall 63' 3" LOA  
 Length Water Line 52' 3" LWL  
 Beam 18' 10"  
 Height above W/L 25' 8"  
 Draft 5' 3"  
 Displacement 96,830 lbs. (with half load)

## Fluids

Fuel #2 Diesel  
 Engine Oil Chevron Delo 400 Multigrade SAE 15W-40  
 Transmission Oil Chevron Delo 100 SAE 30  
 Engine Coolant John Deere Cool-Gard Pre-diluted coolant (supply on board)

## Operating Parameters (Estimated) *Actual consumption will likely be less.*

The twin John Deere 6068TFM engines are rated for 158 horsepower each at their maximum speed of 2300 RPM. They may be operated continuously at speeds up to 1900 RPM. Please keep them at 2000 or less! It is **very important** to slow the engines gradually and then idle them for 3 to 5 minutes before shutdown, this is easy as you enter harbors.

Here are the approximate fuel/RPM figures, based on Kadey-Krogen performance curves.

<b>RPM</b>	<b>Speed (kts)</b>	<b>Total Fuel Consumption Gal/Hr</b>	<b>Nautical Miles/Gal</b>	<b>Range (1584 Gal 10% Reserve)</b>
1000	5.9	1.6	3.70	5868
1200	6.6	2.4	2.78	4399
1400	7.5	3.8	1.97	3119
1600	8.2	5.4	1.53	2419
1800	8.9	7.4	1.20	1905
2000*	9.4	10.2	0.93	1466
2200	10.0	13.4	0.75	1191
2300 WOT	10.4	15.6	0.67	1062

*"Total Fuel Consumption" and "Range" assume 1584 gallons used, 176 gallon reserve, and no current/tide correction. All fuel, range and speed figures are estimates & reflect combined for both engines. No allowance is made for genset consumption. **\*DO NOT EXCEED 2000 RPM WHEN CRUISING!***

# OPERATING CHECKLISTS - *INCEPTION*

## Upon Boarding and Before Use

- Power Panels: All “White” breakers always ON, “Green” breakers ON while cruising, “Yellow” breakers use with caution, “Unmarked” breakers evaluated for use.
- Canvas removed and stowed as appropriate.

## First Thing Each Day

- Check engine oil, coolant. Check genset oil.
- Check under-engine oil pads. Okay?
- Check fuel tanks and water tank sight gauges. Open both top and bottom valves to check level and then secure.
- Check holding tank indicator. Need pumping or processing?
- Turn off anchor light if illuminated.
- Close and secure portholes and forward hatches before getting under way.

## Electronics

- Navigation Computer breaker at Inverter Bypass Panel must be “On”.
- Turn on instrument breakers at 12V and 24V DC Nav/Com panels. Instruments “On” and warmed up.
- At 12V DC Nav/Com panel, turn on following breakers:
  - GPS
  - AIS
  - GOFREE WIFIThe AIS takes a couple of minutes to initialize. It must be on first for the Coastal Explorer navigation software to recognize it.
- Ship’s computer on and Coastal Explorer navigation software running.
  - Laptop “On”.
  - Planar touchscreen LCD display “On”. Power button on lower right edge of bezel.
  - The Windows login, User : Inception, Password : sjy. Coastal Explorer icon is on the desktop. Click to launch.

## Starting Engines

- All lines clear of propellers and on deck.
- Items running on AC evaluated vis-à-vis the Inverter and Generator.
- Appropriate DC breakers “On”.
- Both Electronic Engine Control breakers “On”.
- Throttles/Shifters in “neutral/idle”.
- “MMC Port”, and “MMC Stbd” breakers “On”. Push MMC “Helm Select”. Release button, red light will stay on.
- Engine keys “On”, start engines in turn by pushing Start Buttons, warm up at idle. (See MMC instructions!).
- If engines do not turn over, see “What to Do If”.

## Leaving Dock (Only 3-4 minute engine warm up required!)

- Check around boat for any possible hazards.
- Eartec headsets for Captain and mate in pilothouse, 4<sup>th</sup> drawer, forward cabinet port side (be sure to charge first).
- Shore power switch “Off”.
- 20Kw Generator running if Bow Thruster to be used.
- Inverter “On”, breakers “On”, panel switched to 20Kw Genset (Gen1).
- Bow Thruster/Windlass breaker “On”.

- Shore power cord removed, stowed on board, cable reeled in (Cablemaster).
- Lines removed as appropriate.
- Fenders hauled aboard and stowed.
- Lines and other deck gear secure/stowed.
- Doors and hatches closed and secured as appropriate.

### Underway

- Helmsperson on watch at all times.
- 24V DC panel Stabilizers breaker must be ON. Enable at overhead helm touch panel and set to Centered or Active as conditions dictate.
- RPM under 1400 until engines warm to 140°; RPM never to exceed 2000 RPM.
- Always keep wake effects in mind.

### If Engines are to be Shutdown or Vessel will be Stopped or Reversed

- Press and hold “Center” on stabilizer control panel and confirm on bar graphs.

### Approaching Dock

- Fenders out on appropriate side.
- Eartec headsets for Captain and mate in pilothouse small drawer (be sure to charge first)
- Bow line *OUTSIDE* stanchions through hawsepipe and bloused around toward midships.
- Attach stern line to cleat lead through hawsepipe and back over rail, ready to tie to dock.
- Attach midship line to cleat and lead through hawsepipe and back over rail.
- Autopilot to Standby. Engines dead slow, wheel centered for engine-only maneuvering.
- Stabilizers in “Centered” position.
- Ensure bow thruster is active, 20Kw Generator must be running.
- Mate ready to secure stern first (in most circumstances).

### After Arriving at Dock in Marina

- Lines secure, including spring lines.
- If using Shore Power:
  - Water Heater breaker off until Inverter current settles (see “Inverters” below).
  - Other heavy AC loads also off until Inverter current settles.
- Before** connecting shore power, check that BOTH power source selection switches of the AC Panels No.1 & No.2 are OFF ... in the *power panel* and the *breaker on shore*.
- If there is 120V AC available at the dock**, the electrical panel settings should be:
  - Shore Inlet No.2 as the AC source on the 120/240V AV Distribution Panels No.1 & No.2 rotary switches.
  - The Cablemaster #2 (outboard) power cord is used with a 120V adapter (in the step storage locker under the table in the pilothouse).
  - The Dock Voltage Selector Switch (starboard side of lazarette) set to 120VAC (this is already normally done).
- If there is 240V AC available at the dock**, the electrical panel settings should be:
  - Shore Inlet No.1 as the AC source on the 120/240V AV Distribution Panels No.1 & No.2 rotary switches.
  - The Cablemaster #1 (inboard) power cord is used.
- After** the adaptor (if needed) and Shore power cord are connected, turn the shore power breaker (at the dock) “On”.
- Confirm Shore power voltage at the 120/240V AC Main panel meters.
- Set Power Selector switches for panels to Shore Power 1 or 2 and confirm on meters.
- Inverter “On”.

- Electric use monitored for current capacity of shore facilities.

**Arriving at Mooring Buoy – note that *INCEPTION* is too long to use WA State Parks mooring buoys.**

### **Mooring at Anchor**

- Stabilizers in “Centered” position.
- 20Kw Generator running, Bow Thruster/Windlass breaker “On”.
- Bow Thruster switch (joystick at starboard of helm) must be enabled to use the Windlass.
- Anchor is lowered from pulpit with foot switches while boat is backed up slowly away from anchor. *Be sure pawl is disengaged from ratchet in front of windlass.*
- Before dropping anchor, remove pin & shackle (it flips back to lock position sometimes if left on). Remember to put back on after anchoring completed.
- When desired chain length out (4:1 or 5:1 scope), windlass is stopped.
- Engines reversed at idle for “count of five” until chain pulls up virtually straight.  
*Note: The boat is not held in reverse against a taught anchor chain!*
- Attach bridle (located in port seat locker) to chain 1-2 ft forward of cleats on bow pulpit. Drop chain until bridle is 2 feet above the water and secure lines to the bow cleats so they are taut.
- Loosen chain just enough to put pressure on tie lines and slight slack on chain coming off windlass. The main pressure of the chain should be on the bridle and cleats, rather than the windlass.

### **Stopping Engines**

- Use red “Stop” button before turning key off! Allow engines to idle 3-4 minutes to cool down before turning off. Normally, time spent docking or anchoring is sufficient to cool down.

### **Generator Starting/Stopping**

- Hold “Preheat” switch for 10 seconds, then hold both “Preheat” and “Start” until it starts (20 seconds max).
- Continue to hold “Preheat” for up to 10 seconds after generator starts, then release.
- Check stern exhaust for water flow, port side for 20Kw or starboard side for 8Kw.
- After 5 minutes for warm up, turn power selector from “Off” to “Gen1” for 20Kw or “Gen2” for 8Kw.
- Stopping: Remove all loads, wait 3-5 minutes for cool-down. Turn power selector switches from “Gen” to “Off”,
- Hold “Stop” switch until stopped.

### **Overnight Checklist in Marina**

- Shore power “On”.
- Inverter “On”.

### **Overnight at Anchor**

- Run generator until batteries fully charged as shown on Link 10 Power Monitor.
- Inverter “Off” to conserve batteries.
- Anchor light “On”.
- Unneeded DC electrical items all “Off” including radios, extra lights, etc.
- Turn off Webasto heat (in most situations).
- Turn off Fresh Water Pump breaker.

### Upon Arising

- If at anchor, Inverter only "On" if necessary.
- Start generator if necessary for battery charging.
- Inverter "On" if shore power available or generator running.
- Turn on Webasto heat if necessary. Press Sun symbol on thermostats when occupied.
- Turn on Fresh Water Pump breaker (may need to press Power switch on Pump to reset)
- Go to top of this **Inception** checklist.

### Retrieving Anchor

- The 20Kw generator must be on to operate the windlass. The windlass' hydraulic power is provided by the PTO on the generator.
- Turn Bow Thruster/Windlass breaker "On" (located on the 24V DC NAV/COM panel starboard of the steering station in the Pilothouse). Press Start button on Bow Thruster control. The station must be enabled to use the Windlass.
- Turn Saltwater Pump breaker "On".
- Remove the bungee connecting the netting across the bow pulpit.
- Captain **powers** vessel forward slowly. **Never pull vessel forward with windlass.**
- Use foot switch to retract chain slightly, enough to remove the bridle. After the bridle is removed, continue to raise the anchor while rinsing the chain with hose.
- Stop when anchor shaft is parallel with pulpit. **Do not** over stress the windlass by pulling the anchor in tight against the pulpit.
- Secure the anchor with the keeper.
- Release the tension on the chain.
- Turn off spigot. Stow the hose and bridle.
- Reinstall the bungee connecting the netting across the bow pulpit.
- Turn Bow Thruster/Windlass breaker "Off".
- Turn Saltwater Pump breaker "Off".

### Raising/Lowering Dinghy

- Turn the Davit breaker (AC Panel No.1) "On". The davit requires 120V AC, use either genset or shore power, do not use inverter to power.
- The control head/cable are in a drawer port of the helm. The control head cable screws into a connector at the base of the davit. Control is self explanatory. **DO NOT ALLOW THE DAVIT TO LOWER BEYOND 30°** when lifting the dinghy.

### Before Leaving Vessel (After Use or Arrival At Dock)

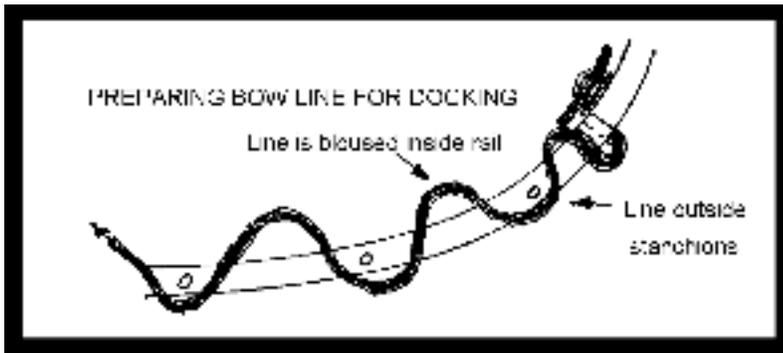
- Power panel: All breakers OFF except "White", cabin/salon lights, chargers, refrigerator.
- Webasto heat switch "Off".
- Canvas covers on in all locations as appropriate.
- Curtains closed for sunlight protection.

### 3. MANEUVERING & OPERATING SUGGESTIONS

#### Docking & Undocking

Usually it's easier to dock *bow in*, and with *Inception* it is most convenient to dock against the starboard side while using the starboard wing navigation station. Have your mate at the side rail opening, ready to step off and secure the stern line, against which you can pull to swing the bow in toward the dock. By having your mate ready to disembark when close to the dock, he/she will not have to jump to the dock, risking a turned ankle or falling overboard. It is the skipper's job to put the boat next to the dock so the mate needn't jump, but merely step off!

Approaching a dock, have fenders out as required and have the bow line already rigged, passed through its hawse pipe, and draped back on the side of the boat between the stanchions so it can be reached from the dock. *Never put a line from a cleat over a rail: the boat's weight will bend or break the rail if it pulls against the line!*



When the mate's ashore, the line can be easily reached!

If dock clearance permits, spring the boat forward so that it pulls forward on the stern line. This will bring the stern close to the dock. Let the bow line out enough so that the boat can rest against the stern and midships fenders.

#### Maneuvering In A Harbor

With its twin screws, you'll do best if you *center the rudder and steer with the engines only!* The props are so large that the boat will respond well except in high winds just with use of the propellers in forward and/or reverse. Take your time, and keep the boat running "dead slow" so that you can plan each approach. You shouldn't need to use the throttles at all. *Inception* is a big, heavy, full displacement boat and she maneuvers slowly. Be sure to think ahead.

#### Bow Thruster

*Inception* has been equipped with an ABT hydraulic 25hp bow thruster with joystick controls at the pilothouse helm, the flybridge and the starboard wing station. To operate, simply push the joystick. The 20Kw generator must be running to use the bow thruster.

#### Filling The Fuel Tanks

*Fill the forward fuel tanks only*, unless you have coordinated with San Juan Yachting ahead of time. With the large fuel tanks, you can fuel the boat moderately quickly as long as you use a small nozzle such as those found on auto gas pumps. Control the flow rate by sound, as the fill pipes make the characteristic "getting to the top of the bottle" pitch change when the fill pipes begin to fill when the tanks themselves are full. (The tank vents will gurgle before the tanks are full, so when the vents begin gurgling, slow down until you hear the fill pipes' pitch change.)

***LISTEN CAREFULLY!*** Fill the tanks ONLY until you hear the fuel reach the fill pipes. Better to under-fill them a little, than over-fill them! It's best to have a mate watch the sight gauges while fueling.

## Anchoring

Anchoring can be accomplished safely with a minimum of fuss if you are **prepared**. Or, if you are not ready, it can be stressful and dangerous for you or the boat.

Before attempting to anchor, select an anchorage with a soft bottom such as sand, mud, or gravel, if possible. Look at the charts and cruising guides for tips on good locations. Then, choose the spot in the anchorage where you have room to “swing” on the anchor without disturbing other boats. Remember, responsibility for leaving room goes to each successive boat to arrive, for the first boat has priority in the anchorage!

Here in the Northwest, because of the deep waters, all-chain rodes and small bays, we anchor a little differently than in the Gulf of Mexico or Caribbean, for example. First, except in severe weather we use anchor chain scopes of only 4-to-1 or 5-to-1. For example, in water that is 40 feet at low tide in the typical anchorage, we might use 160 feet of chain unless the weather was to be gale force or greater winds.

Second, because of the small bays and steep bottoms, we often rig a shore line from the stern of the boat to shore. The best example of this would be at Todd Inlet at Butchart Gardens: Here is a bay that can accommodate 8 - 10 boats, yet it is only about 150' wide and 200' long! Boats attach their bows to the mooring buoys or, in a few cases, anchor; and then their sterns are secured to rings provided in the steep cliffs overlooking the bay. Boats are thus perhaps only 15-20' apart, side to side.

Third, boats often will “raft” side by side in busy marinas, although this is not too common.

Anchoring safely requires two persons, one at the helm maneuvering the boat and one on the bow operating the anchor. Putting the bow of the boat over the spot where the anchor is to be placed after checking the depth on the depth sounder, the windlass foot-switches are used to lower the anchor slowly toward (but not onto) the bottom, by watching the chain markings, which are painted **every 50' on the anchor chain**.

When the anchor is about to reach bottom, the boat is backed away by putting the engines into reverse for 5 seconds: eddies from the chain indicate motion. Resume lowering the anchor while drifting backwards (watch the eddies and add another burst of reverse if necessary!) until the desired amount of chain is out. Stop paying out chain. Engage reverse for five seconds at a time until the chain starts to pull straight off the bow toward the anchor. A straight chain indicates a “set” anchor!

***NEVER** pull on the chain for more than five seconds, and never at any engine RPM other than idle! Putting the boat's weight plus its horsepower on the chain forcefully even at idle will bend the anchor and/or damage the mooring gear!*

If while checking the set, the chain rumbles and clunks, and seems to release in bursts, it means you're anchoring on a rocky bottom and the anchor is not holding. Be patient: it may not set on the first try, and you'll have to repeat the process sometimes to get a good “bight” on the bottom.

## Shore Lines

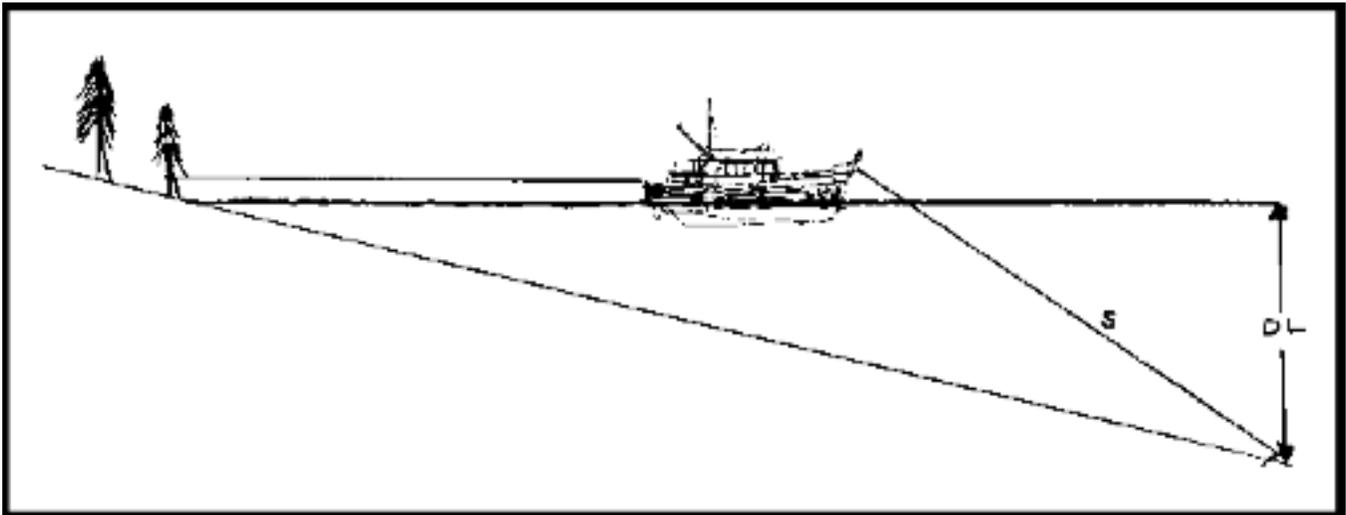
When a shore line is required, anchors are set 125 - 175 feet from shore, with the boat backing toward shore during anchor-setting. The stern line is put around a tree, and brought back to the boat.

During this process, be sure to keep clear of rocks near the shore, and allow for our Northwest tides, occasionally twelve feet, and sometimes 20 feet when further north! Check the present tide, and high and low tides before beginning anchoring: *No sense anchoring in 15 feet of water if you're at the “top” of a 15 foot tide!*

To get to the shore, you will need to have a dinghy down, and then have your mate keep the boat's stern toward shore with short bursts of reverse gear. Sometimes a helpful boater already anchored will help you by taking your line to shore for you with his dinghy, a neat "good deed" that you might reciprocate. We've met some nice boaters this way!

The shore line is in the lazarette, and is long enough to usually allow taking it to a tree, around it, and back to the boat so you don't have to go ashore to untie when leaving. With a crew member keeping the boat in position, take the dinghy to shore pulling the end of the shore line with you. Pass it **around** a tree, and pull it back to the boat if you can, since then to get away in the morning all you have to do is release the bitter end from the boat, and pull it aboard. Pull the line tight, as long as you've got over 100' total of line out: there is plenty of sag/stretch, and we want to keep the boat in its area! If necessary, put a crab pot float or fender on the line to warn others it's there.

Here is a sketch of a properly anchored boat with a shore line. In this drawing, S=Scope, which should be at least 4 x DL, the Depth at Low Tide.



## 4. ANCHORING SYSTEM

Inception is equipped with two anchors, both forward and attached to the Maxwell 3500 hydraulic windlass. The windlass is powered by the PTO on the 20Kw generator, which must be running in order to raise or lower the anchor.

The starboard anchor is a 132 lb Ultra anchor with 400' of ½" chain. The port anchor is a 140 lb Delta with 300' of ½" chain. Use the starboard, the port anchor is for backup or emergencies only. The handle for the windlass is stored in the chain locker and is used to tighten or release the clutch on either side of the Maxwell 3500 windlass.

*Example: Tighten (clockwise) the clutch on the same side of the windlass as the anchor are you using and loosen (counter-clockwise) the clutch on the opposite side.*

*Important: Observe the 'pawls' on each side of the wildcat and adjust properly both before and after using. The 'pawls' are the hinged devices that fit into notches located on the forward side of the windlass, they prevent any backward movement of the chain and wildcat.*

A 600' braided 3/8" polypropylene line for stern tying is located at the stern on a reel located in the lazarette. (Please do not cut the line; it is all needed for certain places in Desolation Sound.)

**Inception's** draft is 5 feet 3 inches. The depth displayed in the electronics is the water depth under the keel.

### Chain Markings

The anchor chains each have about 15' of nylon line at the "bitter end". The nylon line is used in case of emergency to release the anchor by cutting the line. The chain is marked with paint as follows: 50' White, 100' Red, 150' White, 200' Green, 250' White, 300' Red. The main anchor chain also has yellow polypropylene line woven through the chain links at 50 foot intervals.

### Windlass

The anchor windlass is controlled by two foot switches (up/down) in the bow, plus two remote Bow Thruster control stations, one in the Pilothouse and one on the flybridge.

### Scope and Tide Swing

Scope is the relationship of length of rode (chain, line, cable) to the depth of the water. San Juan Sailing recommends a 4:1 scope.

- Check the tide tables to know at what point in the range you are anchoring, and measure the scope for the high tide.
- Check for depth and rocks within the proposed "swing" area.

### Setting the Anchor

- The boat should be idling facing into the wind.
- Ensure that the Bow Thruster/Windlass breaker on the 24V DC Nav/Com panel is "On".
- Press the Start button at the Bow Thruster control to enable the station.
- At the bow, take the pin out of the Windlass.
- Retract the pin on the ¼" tag line holding the anchor to the anchor roller.
- Depress the down arrow foot switch to lower the anchor. Push the anchor past the anchor roller carefully so the anchor does not swing back and strike the bow of the boat.
- Let out the proper amount of rode based on scope desired. Moving the throttle in and out of reverse will provide adequate astern momentum to lay out the chain on the seabed.
- Using a combination of reverse and neutral, gently tug on the anchor until it is set.
- Verify the anchor is set by seeing the boat move forward and seeing slack in the chain.
- Using the anchor holding line with the bridle (stowed in the port bench seat locker), secure

the chain in front of the anchor roller with the chain hook and secure the lines to the bow cleats so they are taut, creating a slack loop in the chain between the anchor roller and the place where the chain hook grabs the anchor chain.

- Loosen chain just enough to put pressure on tie lines and slight slack on chain coming off windlass. The main pressure of the chain should be on the bridle and cleats, rather than the windlass.
- On the Raymarine monitor, turn the Radar to standby mode.

*Perform an “anchor watch” for the first 30 minutes, observing how the boat swings and how close it gets to other boats and objects. Provided the boat is not losing it’s position, all is well.*

### **Retrieving the Anchor**

The engine should always be idling when you are retrieving the anchor, in case it is necessary to move the boat forward momentarily by moving the throttle in and out of gear.

Remember, the 20kW generator must be running!

At the circuit breaker panels behind the helm:

- Turn “On” the Bow Thruster/Windlass breaker.
- Turn “On” the Saltwater Pump. The seacock for the saltwater pump has a blue handle and is located in the Machinery Space under the master stateroom.

At the bow:

- Use the coiled hose connected to the saltwater spigot to rinse the chain and anchor.
- Remove the bungee connecting the netting across the bow pulpit, it can get caught on the anchor when stowing the anchor.
- Depress the UP ARROW to bring up the anchor.
- Wash the chain with plenty of sea water before it comes over the roller to keep the mud off the boat. Use the waterfall technique, try to create a cascading flow of water down the chain to remove all mud and debris. Do not stow a muddy or debris filled chain.
- As the chain tightens and starts to bog down the Windlass, wait until the boat catches up, then continue. Don’t drag the boat by the anchor chain thru the water.
- 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.
- Be careful for the last couple feet to make sure the anchor is facing the proper direction.
- Reinsert the pin to secure the anchor in the bow roller.
- Install and tighten the turnbuckle tensioner.
- Release the tension on the chain slightly to take the strain off the Windlass.
- Reinstall the bungee connecting the netting across the bow pulpit.

## **5. BARBEQUE GRILL**

The Weber Q220 propane barbeque grill is located on the flybridge, the 1 lbs. propane canisters are stored in the large starboard deck box adjacent to the grill. When using the grill, when the lid is closed, the BBQ heats up rapidly and cooks quickly, so tend meat often. Operation is conventional. As a courtesy to the next guest, please use the wire brush to clean it after use. Once the grill has been cleaned and cooled down, cover the grill with the canvas cover. Extra disposable dripping pans are in the galley pantry cabinet.

## 6. BERTHS

*Inception* is ideal for 4 people, but she'll sleep a maximum of 7 - two in the forward cabin (queen bed); two in the starboard guest cabin (2 twin beds), two in the pilothouse (table converts to a double berth). In a pinch someone could also sleep on the settee in the salon.

**Converting the Pilothouse table into a Double Bed:** Loosen the adjustment screw on the table base. Push down on the table top until it is level with the settee. Pull out the table top support bars & insert the two table support legs into the holes on the underside of the starboard side support bars (these legs provide additional support for the corner). Open the table top so the edge of the table rests on the edge of the settee. Move the bottom cushions to the outside edge of the berth, then place the back cushions flat on the berth.

## 7. BILGE PUMPS & HIGH WATER ALARM

There are 5 bilge pumps located throughout the boat, one in each under sole compartment. The bilge pumps are wired directly to the ship's house batteries. There are **no** circuit breakers for the bilge pumps. The Bilge Pump and High Water Alarm control panel is located port side of the steering station in the Pilothouse. Each pump can be operated independently. Each pump has a three position toggle switch and a RED indicator light, when set to "Auto", the pumps are controlled by their float switches. When set to "Manual" the pump will run without regard to the float switch. This setting is used to drain water below the range of the float switch, and to bypass a defective float switch.

The very loud 105db High Water Alarm will sound if any of the bilge pumps are activated by their float switches. The Alarm may be momentarily muted by setting the Alarm switch to "Mute" if necessary. **The Alarm switch should be left in the "ON" position.**

## 8. DINGHY, DAVIT & OUTBOARD MOTOR

### Dinghy

*Inception* has an inflatable, hard bottom Apex 13' dinghy, with helm station, navigation lights and an electric bilge pump. The 30 HP Nissan 4 stroke engine has electric start and power tilt. It is best not to run the bilge pump while dry. There is a portable air horn and handheld Icom M34 floating VHF radio in the pilothouse for use in the dinghy.

***For safety, and compliance with U.S. rules, there should be a life jacket aboard the dinghy for each passenger aboard whenever the dinghy is at sea. In Canadian waters a sound making device (horn) is also necessary.***

*Please take special care when beaching the dinghy (refer to the dinghy beaching procedure in your charter guest book). Most of the beaches you will land at are strewn with barnacle-covered, bottom-slicing rocks. When approaching the shore, weight the dinghy aft by leaning or moving the crew toward the back of the dinghy. Offload everyone over the bow. For dock tying, there is a small line on the dinghy. If doing a beach landing, there is a long line (painter) in the bow locker. Also remember to secure the painter under a rock or tie to a large driftwood log – we have very large tidal fluctuations (so your dinghy won't float away). Don't forget to raise the outboard when the dinghy is beached!*

### Davit

*Inception* is equipped with a Nautical Structures hydraulic davit with a 1000 lbs. capacity.

**Caution: Never raise or lower the dinghy with occupants (adults or children).**

## Launching the dinghy

- a. Turn ON the circuit breaker BOAT DAVIT on the 120/240V AC Distribution Panel No.1, Port side in the Pilothouse. We suggest not using the inverter to power the davit because of the large power draw on the house batteries; instead use a generator.
- b. Plug the davit controller, located in the pilothouse port cabinet 4th drawer, into the receptacle on the forward side of the davit housing.
- c. Remove tie downs and cover from the dinghy. *Be careful! It's a long way down!*  
*Note - Before launching the dinghy, insert the two plugs into the stern. One plug screws in from the outside, the second plug is inserted under the seat next to the bilge pump.*
- d. Raise the boom by operating 'Boom Up' on the controller. Swing the boom around and lower the cable by operating 'Winch Down'. Attach the cable to the dinghy lifting bridle.
- e. Take up the cable slack using a combination of 'Winch Up', 'Boom Up' and 'Boom Down'. *The weight above the hook should be just below the boom-end pulley.*
- f. Lift the dinghy using the 'Boom Up' until it clears the chocks. *While lifting the dinghy, the boom should **never be lowered below 30°** as measured from the deck.*
- g. While holding it's bow painter, swing the dinghy around until it is over the water on Inception's port side, and lower it all the way to the water. A crew member should tend the bow painter to keep the dinghy parallel to the boat. Let out enough cable so the dinghy can be pulled back to the swim step for boarding.
- h. Release the lifting bridle from the davit hook. If the davit is to remain deployed while the dinghy is being used, the cable and hook must be secured. Tie the davit hook and weight to a rail or cleat. It is recommended that the cable be retracted and the davit placed in its stowage position.

To retrieve the dinghy, reverse the procedure, using the dinghy's painter to hold it steady and swing it around; remember to remove the plug and re-secure the davit boom. Be careful that the motor is tilted so that it doesn't damage the sundeck when the dinghy is lowered!

## Outboard Motor

The dinghy outboard motor is a 30 HP Nissan 4-stroke engine that has electric start and power tilt. This outboard uses *regular unleaded gas*, with *no oil mixed into it*. Spare motor oil is in the lazarette. There is a 6 gallon fuel tank in the bow seat storage locker of the dingy.

Check the oil regularly by unlatching the cover (latch is at the rear), lifting it off, and using the dipstick.

To start the motor,

- Lower it with the rocker switch on the shift lever end;
- Squeeze the fuel line bulb (at the boat's stern) until it feels "hard";
- Turn the key for 15 seconds at a time until it starts. (Do NOT lift the "fast idle lever")
- When the motor warms up a little, you can gradually raise the fast idle lever until the motor has warmed up a little. The lever should be down before engaging the shift.

To shut the motor off, turn the key off.

In the event the dinghy battery should be dead, there is a portable battery charger and extension cord in the engine room or lazarette.

## 9. ELECTRICAL SYSTEM

### Concepts

Each year it seems more folks are confused by the operation of electrical systems on yachts than by any other subject! Don't feel discouraged if something isn't clear: you've got company in your confusion. So let's try to cover some theory here first.

Most of the equipment on any boat is run by 24 volt DC electricity from the boat's batteries. This is true because DC should always be available: we have batteries aboard even when there is no shore power! If the batteries aren't run down, everything should work, just like in the family car.

Since the batteries are used so much, we have to replenish, or charge them. The most important way we do this is by alternators on the ship's engine(s). In most cases one engine will provide enough electricity in most every case to run everything, and still have some energy left over to add back to the battery, that is, to charge it.

Ah, but what if the engine(s) isn't running? Then, the batteries are slowly depleted until they have "run down" and there is no more electricity stored in them . . . a big problem, because then we not only can't run all the neat stuff on the boat, we can't start an engine to get more electricity.

So a good skipper and crew has "electrical power management" in mind whenever they turn an electrical gadget on or off!

It is with this in mind that we can cite a reality: If we need more electricity than the batteries alone must provide, and if a propulsion engine isn't running, we will need to get our electrical power from an alternative source! That's the most important reason why we plug the boat in to shore power or use the generator: To keep from running down the batteries. By using battery chargers getting their power from shore power or the generator, we can keep the batteries charged, or, at least, from getting too low.

In modern, luxury cruising boats, however, there is another important factor: Some of the "goodies" we like to have on board such as hair dryers and microwave ovens require ordinary household electricity. This is 120 volts AC. It is different from DC. So if we want to use these things when we're not at a dock, we must have another way to get 120 volts AC, and for this we use the generator or an inverter, an amazing high tech gadget that takes 24 volts DC from the ship's batteries and makes it into 120 volts DC!

So here's what we've got: A lot of stuff running on 24 volts DC and some running on 12 volts DC, with that electricity from the batteries. To keep the batteries from running down, we have alternators run by the engines, alternators run by the generators, and battery chargers that get their power from shore power or the generators. For the stuff that runs on 120 volts AC, we have shore power, the generator, or, for making AC out of the batteries' DC, the inverter.

### **Batteries / Xantrex Link 10 Battery Monitor**

Inception is equipped multiple banks of batteries, each bank dedicated to a specific task. The system consists of a 24V battery bank for starting each propulsion engine, a 12V battery for starting each Generator, a 24V battery bank for ship's service/house and a 24V battery bank for providing power to both the 12V DC and 24V DC NAV/COM electronic equipment and accessories.

The 24V house battery bank is made up of 6V batteries (total of twelve batteries) which are wired in series to provide a total of 24V DC, rated at 786 amp hours, of which 300 are usable. This bank is located in the amidships machinery space below the office sole. The house bank connects to the 24V DC MAIN PANEL DISCONNECT electrical panel in the pilothouse. The house bank is charged by the 24V Trace Inverter/Charger

The start batteries for the engines and generators are located in the engine room. The engine start batteries are charged by the 24V Dolphin battery charger and by a limited charge from both engine alternators. The generator start batteries are charged by the 12V Dolphin battery charger and by both generator alternators.

The battery bank for providing power to the 12V DC NAV/COM electrical panel and 24V DC NAV/COM electrical panel is located in the port side storage compartment on the flybridge. The NAV/COM battery bank is charged by the 24V DC Dolphin battery charger and by a limited charge from the engine alternators.

*For normal operations, leave all battery switches on.*

The Xantrex Link 10 Battery Monitor, located on the starboard side of the stairway leading to the pilothouse, is used to monitor the current capacity and discharge status of the house batteries. When the house batteries are discharged to 59% of capacity (indicated by 2 yellow bar LEDs) the house batteries need charging. Either hook up to shore power or start a generator. As the house batteries are recharged, their charge status will be indicated in the bar graph. The Link 10 Monitor can also display the Amps (press the 'A' button) being used and time estimate (press the 't' button) of how long the batteries will sustain that load.

### **DC Electrical System**

The DC electrical system has both 12V and 24V distribution panels. The 12V DC Nav/Com electronics panel is located port side of the steering station in the pilothouse. The 12V DC Panel Disconnect selector switch must be ON for the panel to operate. The 24V DC Main Panel electronics panel is located port side in the pilothouse. The 24V DC Main Panel Disconnect selector switch must be ON for the panel to operate.

Above the circuit breakers on each panel, are a DC voltmeter and a DC ammeter, so you can monitor the status of the equipment and accessories powered by the panel.

Just as in your home, most of the circuit breakers below these meters and main switch are true "circuit breakers": they feed power to somewhere in the boat where there is another switch which, in turn, turns the item on and off. An example of this would be the circuit breakers for the horn and electric head. If the breaker is turned on, the horn won't work unless you push the horn button, and the head won't start flushing the moment you turn the breaker on, either!

But some of the other breakers also serve as the switch for the item. An example of this would be the spreader light breaker or the overboard waste pump breaker.

### **AC Electrical System**

The AC electrical system is controlled at the two control panels in the pilothouse; 120/240V AC Distribution Panels No.1 and No.2. The AC source for each Panel is set using the Selector switch at the top of the Panel. The activities related to the AC electrical system deal mainly with three issues:

(1) Selecting the power source; (2) Controlling the load; and (3) Charging from the house batteries AC power is available from the shore or generator.

### **Connecting/Disconnecting Shore Power**

The Power Selection switches the top both 120/240V AC Distribution Panel No.1 and No.2 determine the source of AC power for the boat. These switches should be left "OFF" whenever you are connecting or disconnecting the boat to shore power. This is true so that you do not draw an arc from the plug due to the load of the boat on the connector's pins: such an arc will burn the contacts and eventually cause them to overheat when in use, creating a fire hazard.

Set the switches in the Shore Power Inlet Selector Switch panel to the appropriate settings for

your dock setup. Select the correct Dock Voltage, either 208V AC or 240V AC. You can choose to have 1 or 2 AC power cords connected to the dock, using either the Forward or Aft power cords. The Forward power cord is stored in the lazarette. The Aft power cords are on dual Glendinning Cablemaster Systems.

**If there is only 120V AC available at the dock**, you must use Inlet No.2 as the AC source. The Cablemaster #2 (outboard) power cord is used with a 120V adapter (located in the step storage locker under the table in the pilothouse). The Dock Voltage Selector Switch in the starboard side of the lazarette should be set to 120V AC, this is already normally done.

Once connected to power, monitor the AC voltmeters and ammeters to avoid overloading the circuit.

***Important Note: If the house batteries are low when you first hook up to shore power, and the inverter is turned on (as it should be), the inverter will begin charging its batteries at a very high charging rate (up to 120 amps of charging), drawing a lot of shore power current. Until this demand reduces (see “Inverter/Charger” below), you should turn “OFF” other high-current AC appliances such as the water heater.***

You can then turn on AC appliances as needed. Watch the ammeter to be sure you don't exceed the dock's available supply, typically 30 amps.

Here are some estimates of 120V AC power consumption for typical appliances:

- Water Heater 15 amps
- Hair Dryer 12 amps
- Coffee Maker 10 amps
- Inverter up to 22 amps
- TV 1.5 amps
- Microwave 12.5 amps

There is a **50 amp Shore Power circuit breaker** for each Shore Power connection on the vessel. The two circuit breakers for the Forward Shore Power connections are located in the Bow Thruster Compartment, Forward. The two circuit breakers for the Aft Shore Power connections are located in the Lazarette.

### **Inverter/Charger**

The Trace Inverter/Charger can generate a sustained 4000 watts of 120V AC (NOT 240V AC) electrical output at 60 Hz from the 24V house batteries **or** can produce a constant 120 amps of 24V DC to charge the ship's house batteries. The Trace Inverter/Charger will 'sense' when 240V AC electrical power is being supplied from either Shore Power or a Generator, and will automatically switch to charger mode. It will automatically switch back to inverter mode when 240V AC is not available.

In charger mode the Inverter/Charger is actively charging the ship's service/house batteries. This is why it is important to keep the INVERTER BATTERY CHARGER circuit breaker ON at all times to charge the ship's service/house batteries; the 24V BATT CHARGER circuit breaker ON to charge the engine start batteries and NAV/COM batteries and the 12V BATT CHARGER circuit breaker ON to charge the generator start batteries.

The inverter mode is used to provide 120 volt AC power to small appliances when there is no shore power, or you do not want to use the generator. It is wonderful, for example, to use the inverter to make a pot of coffee when the engines are running and you are underway, or to watch TV in a quiet anchorage, or use a hair dryer for a few minutes in the morning. But for long-period use of AC by large appliances, the engines or a generator must be running or you must have shore power available. For a short task, the inverter is great: no starting the generator, no noise, no fuss, the power is there. If the engines are running, use the inverter all you wish, as long as you don't try to do two big jobs at once: The inverter can only produce 4,000 watts of energy at a

time. So the inverter is only wired to only those items controlled by the 120V AC INVERTER BYPASS PANEL circuit breakers. It will not run any 240V appliance, hot water heater, or the air conditioning system. Plugged-in, portable boat heaters, particularly, should never be run by the inverter; start the generator instead!

*Remember the important note above under “Connecting/Disconnecting Shore Power”: The inverter, if on, will draw a lot of current when bulk charging, so be careful not to overload a shore power circuit. **Look at the Ammeter in the AC panel on the boat.***

In summary, the inverter/charger should be on whenever shore power is present or the generator is running, and it may also be left on when underway. When AC power is available from shore power or from the generator, the inverter/charger automatically charges the house batteries. It is a good idea to turn the inverter off at anchor (when the generator isn't running), turning it on only when you want to use something briefly, as above; in this way, you will avoid running down the house batteries just because someone left some AC appliance plugged in and forgotten. **When leaving the boat, turn OFF the inverter/charger at the control panel**, so if shore power should fail, an onboard appliance (e.g. a coffee maker) will not draw down the batteries.

The rectangular black Trace Inverter/Charger control panel is located on the starboard side of the stairway leading to the pilothouse. You can tell what the Inverter/Charger is doing by the LED status indicators on it's control panel.

#### **While away from shore power, if you want 110 AC power:**

Turn the Inverter ON at the control panel by pushing the ON/OFF MENU button to get to the 'Set Inverter' menu, then use the SET POINTS button to select 'ON' or 'SRCH', the INVERTING yellow LED will illuminate.

#### **LED Status Indicators**

**LINE TIE (yellow).** Not used.

**INVERTING (yellow).** When ON (solid), the inverter is operating (making AC power from DC battery power). When the LED is not lit, the inverter is OFF. When the INVERTING LED is blinking yellow, the inverter is in STANDBY, waiting for the external AC power to be removed or it is in idle mode, standing by until an AC appliance is turned on and more power is needed.

**AC1 IN GOOD (green).** When LED is blinking, power has been detected. When ON (solid), power is present and good. If LED starts blinking during operation, power has been dropped.

**AC2 IN GOOD (green).** When LED is blinking, power has been detected. When ON (solid), power is present and good. If LED starts blinking during operation, power has been dropped.

**BULK (yellow).** When ON (solid), the charger is on and charging. The LED will turn OFF and the FLOAT LED will illuminate when the house batteries are fully charged. When the LED is off, the charger is off. When external AC power is detected, this unit automatically begins to charge the batteries.

**FLOAT (green).** When ON (solid), indicates the house battery bank has reached the *Float Stage* of the charging process. If a generator is providing power, it should now be turned off, since the batteries are fully charged.

**ERROR (red).** When ON (solid), indicates an operating error has occurred (refer to the ERROR CAUSES menu heading for a list of possible causes). To reset the inverter, press the red ON/OFF MENU button several times.

**OVERCURRENT (red).** When ON (solid), the AC load requirement has exceeded the

inverter's maximum output of 4000 watts or 33 amps. A sustained overcurrent condition will require a manual reset by pressing the red ON/OFF MENU button several times. Momentary flashing of the LED means that the maximum output was reached and the inverter automatically reset itself. This may occur during motor startups and is okay.

**Electrical Panels**

There are multiple electrical distribution panels, all are located in the pilothouse. The circuit breakers and switches are marked for their normal operating positions as follows:

White – ON always

Green – ON for cruising.

Yellow – OFF (use with caution)

Unmarked – Use as needed (most breakers are unmarked)

<b>12V DC Nav/Com Electronics Panel (port of helm)</b>	
Meter - DC Amps (003)	Meter - DC Volts (12.3)
Rotary Switch - 12V DC Panel Disconnect	Compass
	---
	LP Gas Det Sys (white)
0 (left), 1 – selected (white)(right)	Receptacles (white)
Pt VHF (green)	---
St VHF (green)	AIS (green)
Sat TV	GOFREE WIFI (green)
Sat Phone	---
Cell	---
WiFi	---
GPS (green)	---

<b>24V DC Nav/Com Electronics Panel (stbd of helm)</b>	
Meter - DC Amps (006)	Meter - DC Volts (24.8)
Rotary Switch - 24V DC Panel Source Selector	Rotary Switch - 24V DC Voltmeter Source Selector
Nav/Com Bat (left), Off (ctr), House Bat – selected (white)	1 (left), Off (ctr), 2 - selected (right)
---	Wiper Motor (green)
---	---
Parallel Solenoid (yellow)	Engine Control (L) (green)
Horn (green)	Engine Control (R) (green)
---	Hold Tank Monitor
---	A/Pilot (green)
Defrost	Radar (green)
Fwd Spotlight	Plotter (green)
Aft Spotlight	Flybridge Instruments
Stabilizers (green)	---
Bow Thruster / Windlass	---

<b>120/240V AC Main Panels</b> (this is the right hand side panel – stacked 2x2 meters with 3 panels below)		
Meter - 240V AC (235) AC Volts	Rotary Switch - Volt/Hertz Meter Selector Switch (7 pos) – set to pos 2 Off, 1-6	Meter - Hertz (59.5) Hertz
Meter - 120/240V AC (000) AC Amperes  20Kw Genset = 5 & 3	Rotary Switch - Amperes Selector Switch (5 pos) – set to pos 2 Off, 1-4	Meter - 120/240V AC (007) AC Amperes  8Kw Genset = 6 & 4
<b>Volt/Hertz Meter Switch (legend)</b> 1. Shore 1 Dock Voltage 2. Shore 2 Dock Voltage – current setting 3. Shore 1 Output Voltage 4. Shore 2 Output Voltage 5. Genset 1 Voltage (this is the 20KW Gen) 6. Genset 2 Voltage (this is the 8KW Gen)		<b>Amperes Selector Switch (legend)</b> 1. Shore 1 Amps 2. Shore 2 Amps – current setting 3. Genset 1 Amps (this is the 20KW Gen) 4. Genset 2 Amps (this is the 8KW Gen)
<b>120/240V AC Distribution Panel No.1</b>		<b>120/240V AC Distribution Panel No.2</b>
Rotary Switch (5 pos) – set to Shore 2 Off, Shore1, Shore 2, Gen 1, Gen 2		Rotary Switch (5 pos) – set to Shore 2 Off, Shore1, Shore 2, Gen 1, Gen 2
Washer/Dryer (double)		Water Heater (double)
H2O Maker (double)		Air Condition – Salon (double)
Air Condition - Pilot House (double)		Inverter Batt Charger (double) (white)
Air Condition – Master Strm (double)		Inverter Bypass Panel (double) (white)
Air Condition - Stbd Guest SR (double)		--- (double)
Air Condition - Port Office (double)		Trash Compactor
Air Condition Cooling Pump (double)		Dishwasher (2300W max)(1.3-5.5 gal)
--- (double)		Propane Stove
		<b>120V AC Inverter Bypass Panel</b>
24V Batt Charger (double) (green)		Rotary Switch (2 pos) –set to From #2 Panel From #2 Panel (left), Inverter (right)
Engine Room Exhaust Fan (double)		Microwave 1300W/12.5A (825W)
---		Refrigerator (white)
---		Ice Maker 2.5A
---		Machinery Receptacles
---		Stbd Guest SR Receptacles
---		Port Office Receptacles
---		Galley Receptacles
---		Saloon Receptacles
12V Batt Charger		Pilot House Receptacles
Boat Davit		Master SR Receptacles
---		Freezer (Office) (white)
---		Navigation Computer (white)

<b>24V DC Main Panel</b> (left panel of main panels – right panel is listed below)	
Meter - 24V DC (24.9) DC Volts	Meter - 24V DC (002) DC Amps
<b>24V DC Main Panel Disconnect</b> (rotary switch) On (up), Off (down)	
#1 Cablemaster (yellow) - inboard	Fresh Water Pump
#2 Cablemaster (yellow) - outboard	Salt Water Pump
Diesel Transfer Pump (yellow)	Macerator Pump (yellow)
Shower Pump Fwd – master head	Vacuum Pump Fwd – master head
Shower Pump Aft – guest head	Vacuum Pump Aft – guest head
Condensate Drain Pump #1 – A/C galley & salon	Master SR Lighting
Condensate Drain Pump #2 – A/C pilothouse, staterooms & office	Stbd Guest SR Lighting
Oil Change Pump (yellow)	Port Office Lighting
--- (yellow)	Salon/Deck Lighting
---	Galley Lighting
---	Eng/Laz Lighting
---	Under Sole Lighting
---	P/H Lighting
---	Spreader Lighting
<b>Shore Power Inlet Selector Switch</b>	
Rotary Switch - Inlet No.1	Rotary Switch - Inlet No.2
Fwd (left), Aft (right – selected)	Fwd (left), Aft (right - selected)
<b>Tap Selector Switch</b>	
Rotary Switch - Inlet No.1	Rotary Switch - Inlet No.2
208V AC Dock Volts (left), 240V AC Dock Volts (right– selected)	208V AC Dock Volts (left), 240V AC Dock Volts (right– selected)

## 10. ELECTRONICS

Inception is equipped with extensive electronic equipment, including two Icom fixed VHF radios, Simrad NSS EVO2 Displays, Simrad HALO Radar, Raymarine Autopilot & Rudder Angle Indicator, Raymarine Tridata Speed & Depth Sounder, Raymarine Wind Indicator. The engines are monitored with dual Floscan 9000 Fuel Monitoring Gauges. The Simrad NSS Displays have navigational charts installed that cover Puget Sound to the Strait of Georgia. The laptop running Coastal Explorer also has NOAA + Canadian Hydrologic Survey Charts installed (C-Map). Please refer to the QuickStart Cards, Operating Guides and Reference Manuals which are on-board. Most instrumentation is duplicated on the flybridge. Each unit is provided with a dedicated or shared circuit breaker in the 12V & 24V DC Nav/Com panels, These breakers must be on for the units to be used. Then the units' own power buttons must be used.

### Autopilot ST7001+

The Raymarine Autopilot System including a control console at each helm and a remote on the flybridge. The autopilot must be on for navigation data to reach other electronics on the boat! For the unit to operate, be sure the breaker is On in the 24V DC Nav/Com Panel.

Basic operation is simple:

- STANDBY puts the pilot in the standby mode. When on, the display will show the pilot's status "Standby", and on the bottom the scale shows the current rudder position port or starboard.
- AUTO Engages the autopilot to hold the heading that existed when pressed. When engaged, "Auto" appears above the heading that was set.
- TRACK Connects the autopilot to the vessel's navigation system. "Track" appears in the display in front of the heading called for by the navigation system.
- RESP Decrease or Increase pilot's sensitivity by pressing this button then the ▲ or ▼ buttons. **DO NOT CHANGE THE RESPONSE!**
- MODE Allows you to use the autopilot for power steering; press the ▲ or ▼ buttons to select mode.
- RESM Resume the previous heading.
- (KNOB) Turn to set a new heading.

A Remote control allows the operator to conveniently operate the autopilot while not at the wheel, but on the settee. It is clipped on the console. For full details, see the Autopilot Manual.

***Maintain a careful lookout when using the autopilot! It is an aid to comfortable cruising, not a replacement for an aware helmsperson! Remember, you can disengage it quickly simply by pushing "STANDBY".***

***Note: When the autopilot is engaged the steering wheel does not work and Standby must be selected to use the wheel.***

### Depth Sounders - Speed - Distance / Wind Indicator / Rudder Angle Indicator

There are 2 independent depth transducers, one is connected to the Simrad NSS display in the pilothouse helm with a repeater on the flybridge & the 2<sup>nd</sup> depth transducer is connected to the Tridata ST60. The depth displayed is the depth BELOW THE KEEL and speed in knots, trip distance in nautical miles, water temperature, etc. The operation of this system is described in its operating manual. It is turned on by the breaker in the 24V DC Nav/Com panel. The Raymarine Wind Indicator and Rudder Angle Indicator are turned on when the Autopilot is turned on. Operation is entirely automatic.

***Because our waters are sometimes very deep, the depth sounders will not display or will stay on a high depth reading when the water's depth is beyond its capacity.***

***Remember when backing up, or crossing a "tide line", that turbulent water from the tides or boat's screws (or those of another boat) can interrupt the sounding information received by the unit. Be careful!***

***Note that our Northwest waters are rocky and depths change rapidly. You should be especially careful to study your charts, and then check them often whenever running in depths of 50 feet or less, so that you don't hit a rock! Just as our islands "pop up" to heights of 50, 100, or even thousands of feet in a very small horizontal distance, so do rocky obstacles!***

### **GPS Plotter / Electronic Charting Systems**

The Simrad NSS EVO2 Displays contain up to date electronic charts. This system makes identifying your ship's location easy.

***THE ELECTRONIC CHARTING SYSTEM IS NOT A SUBSTITUTE FOR CAREFUL STUDY OF TRADITIONAL PAPER CHARTS. You are required by maritime law to use your paper charts for navigation information, especially since electronic chart technology does not always permit full cartographic details to show. The Electronic charts are for convenience only!***

### **Dell Laptop PC / Coastal Explorer Navigation Software / Touchscreen Helm Display**

The Dell laptop computer has Coastal Explorer navigation software installed on it to aid in planning your journey and charting waypoints, predicting tides & currents, etc. The helm display is touchscreen enabled.

### **Radar**

There is a Simrad HALO radar set that works up to 10 miles. The radar image can be displayed on the Simrad screens at the helm and on the flybridge. Radar is used primarily as a device for ***collision avoidance***. To use the radar, make sure the Radar breaker on the 24V DC Nav/Com panel is On.

When you turn on the HALO Radar, it will display data on the Simrad NSS Display.

Proper and safe use of a ship's radar requires lots of practice and careful study. While you are using the boat, you can have the radar on as much as you like to get used to the way it displays images, but for detailed operating instructions we refer you to the radar's own complete manual.

***Note that charterer's insurance DOES NOT PERMIT OPERATION OF THE VESSEL IN RESTRICTED VISIBILITY. You should confine your use of the radar to familiarization and training only in weather with good visibility.***

### **AIS**

The Vesper AIS is a class B transponder. It both sends & receives AIS vessel information which is displayed on both the Simrad NSS displays & the Coastal Explorer navigation software. The AIS breaker must be On.

### **VHF Radios**

There are two Icom VHF radios in the overhead panel above the helm in the pilothouse. There is also an Icom Command Microphone starboard of the pilothouse settee. There is also a VHF radio on the flybridge. Turn the radios on by pressing the Power button. All of the VHF radios are

equipped with DSC capability for emergency communication. *The radios are designed for easy access to Channel 16, which is the hailing & emergency channel in the Northwest.*

### **TV / Stereo / CD / DVD / Satellite TV Receiver**

In the main salon, is a 42" flat screen TV. In the cabinet behind the TV, accessed from the galley, is a Bose Lifestyle stereo receiver with AM/FM tuner and a CD/DVD player. The Bose system has two zones for playback, Zone 1 is the salon, Zone 2 is the master stateroom, pilothouse & flybridge. Note that Zone 2 speakers are all on at the same time. There is a separate volume control for the flybridge, a rotary switch, located inside a panel access door on the left side of the flybridge helm station. Separate remote controls are used to determine what is played in each Zone. The remote controls are in the starboard settee cabinet drawer to the right of the TV along with an instruction card. The Sea-Tel Antenna satellite control panel is above the cabinet. The Satellite breaker (on the 12V DC Nav/Com panel) and the Sea-Tel Antenna control panel (to the right of the TV) must be ON to use the DirecTV Satellite Receiver.

## **11. EMERGENCY & SAFETY**

**Air Horn:** A Kahlenberg M-511 air horn system is controlled by the keypad on the starboard side of the steering wheel in the pilothouse. The Air Horn breaker on the 24V DC Nav/Com panel must be ON. A portable air horn is kept in the cabinet next to the helm.

**EPIRB:** A portable water-activated EPIRB emergency locator is located in a pocket of the Abandon Ship Bag, located in the lower cabinet starboard of the helm and should be taken with you if you abandon ship. (Read instructions before use.)

**Fire Extinguishers:** There are 6 fire extinguishers. They are located: behind the sliding tambourine door next to the TV in the salon, master stateroom starboard hanging locker, in the pilothouse large locker port side of the settee and one is mounted on the flybridge radar tower. Plus there is a Sea-Fire fire extinguishing system in the engine room.

**First Aid Kit:** Located in the galley port pantry cabinet next to the stairs to the pilothouse.

**Flares:** Visual day/night distress signals are located along with the life vests in the large cabinet on the port side of the helm settee.

**Flashlights:** (2) in holders; one located in the pilothouse and also in the salon. Plus one in the engine room on the workbench.

**Life Vests:** Adult inflatable vest-type life preservers (8) are located in the pilothouse, 6 in the large cabinet on the port side of the helm settee. Plus 2 additional life vests are in a storage space under the settee cushions.

**Life Sling:** A quick emergency throw sling is mounted on starboard side of the Portuguese bridge.

**Navigation Lights:** Located on the Port side of the steering station in the Pilothouse, is the Aqua Signal Panel for the navigation lights. Each of the following lights can be controlled individually from this panel:

- Anchor light
- Port running light
- Starboard running light

- Mast Head light
- Stern light

**Searchlights:** There are forward and aft ACR searchlights mounted on the mast. Controls for both searchlights are located overhead the helm station to starboard.

**Smoke/Fire Detectors:** There are linked smoke/fire detectors in the engine room, pilot house and accommodation level. If one is triggered all will sound an alarm. A carbon monoxide detector is located on the accommodation deck.

**Windshield Washer/Wiper:** The Imtra Exalto wiper control is located starboard of the helm station. The Wiper Motor breaker on the 24V DC Nav/Com panel must be ON.

## 12. ENGINES

Inception is powered by twin John Deere 6068TFM 6.8 liter turbo-charged Marine Diesel propulsion engines, rated at 154 hp @ 2300 rpm. These extraordinarily-reliable, rugged machines are the top-of-the-line, and can be expected to give you trouble-free, economical cruising.

On engine start, no long warm-up is required! Three or four minutes is sufficient, then load the engines by putting the transmissions in gear. Do not run them over 1400 RPM until the temperature gauges read at least 140° Fahrenheit. Do not run the engines for long periods with the transmissions in neutral, with no load! The engines require a regular, daily check. *Please perform this check each morning (when the engine room is cool!).*

Normal engine coolant operating temperature range is between 180°F and 202°F (82°C - 94°C). If coolant temperature rises above 221°F (105°C), reduce engine load. Unless temperature drops quickly, stop engine and determine cause before resuming operation.

Operate the engines under a lighter load and at slower than normal speed for the first 15 minutes after start-up. **DO NOT** run the engine at slow idle.

Stop the engine immediately if there are any signs of part failure. Symptoms that may be early signs of engine problems are:

- Abnormal coolant temperatures
- Excessive **black** exhaust
- Excessive fuel consumption
- Fluid leaks
- Sudden drop in oil pressure
- Sudden loss of power
- Unusual noise or vibration

### ZF Mathers Micro-Commander Controls

Inception is fitted with electronic ZF Mathers MicroCommander Propulsion controls that combine the throttle and shift in one lever. They have the following advantages: (1) They are very easy to operate, with no “drag”; (2) They prevent the operator from shifting from forward to reverse, or vice versa, too rapidly. There are three command stations; pilothouse, wing station (forward starboard side of the Portuguese bridge) and the flybridge.

To energize the engine controls, the circuit breakers labeled ENGINE CONTROL (L) and ENGINE CONTROL (R) located in the Pilothouse on the 24V DC NAV/COM Electronics Panel, Starboard side of the steering station, must be ON.

The MicroCommander is designed to **prevent engine start** until:

- Power is ON (Circuit breakers are ON).
- The transmissions are in **NEUTRAL**. (Control heads are vertical).
- A remote station is **in command**. (Depress station transfer button).

When the circuit breakers are turned ON, each Actuator is initialized and positions its respective engine throttle lever to Idle and the transmission to Neutral. A low repetition tone will be heard at all stations, indicating the System has been initialized and **NO remote state has taken command**.

**Accept command** at any station by positioning the Command Head levers into the Neutral position and depressing the station transfer button at the base of the Control Head. You will then have ONE SECOND after the red light becomes solid to position the Control Head levers to the approximate position of the previous station levers. A smooth transfer of command has been accomplished without interruption of speed. **The red lights on the Control Head will become solid** and the low repetition tone will cease, **indicating this remote station has command**.

*Note: If you HOLD the button in as you advance the lever into the forward position from neutral, the light will blink and the engine will not shift, and so you can fast-idle the engine.*

### **Starting The Engines**

The **key** start is only in the Pilothouse. The engines can be started and stopped from the Flybridge, but the key is in the Pilothouse.

Do the following BEFORE STARTING THE ENGINES for the first time each day.

***A checklist for pre-departure engine procedures is located in the engine room below the helm station.***

#### **CHECK THE OIL.**

*The oil level should be between the two marks on the dipstick. The dipsticks are located on inboard side of each engine, and the stick “pulls out” upward. Use a paper towel from the roll supplied, wipe the stick, reinsert, guiding the stick with the towel to keep from bending it, and take reading. The distance between the two marks is about 1.5 quarts. Add only enough oil to bring it up above the “add” mark, say a quart, using the oil provided on the boat. (If you need more oil, buy it! We will reimburse you.) The oil fill on each engine is a cap in the top of one valve cover on each engine. After reinserting, be sure to tighten the cap, but do not over-tighten. DO NOT OVERFILL the crankcase (above the “full” mark), as these engines will quickly waste excessive lubricant. If oil is required often, check under the engine carefully to be sure there is no oil leak, and if there is, have it corrected promptly.*

#### **CHECK THE COOLANT LEVEL.**

*The heat exchanger coolant tanks are located on the forward end of each engine, with caps on the top. Remove the cap by turning; you will have to press the cap down and turn it past the second detent to get it off. Put a finger into the tank; if it gets wet before it hits the baffle inside the tank, there is enough coolant. If coolant is needed, determine if there is any sign of a coolant leak under the engine, and if there is, do not run the engine; if no leak, add coolant to the tank from the jug of pre-mixed antifreeze/corrosion inhibitor/water supplied on the boat.*

VISUALLY INSPECT THE ROOM whenever you're in the engine room, asking yourself, “Does

everything look right?”. Look at the pads under the engines and transmissions: while some drips are normal, there shouldn't ever be substantial accumulations of any fluids!

CHECK THE SEA STRAINERS ONCE A WEEK, or immediately if either engine runs “hot”. The engine strainers are outboard of each engine. *To check a strainer, shine a flashlight through it. While some “fuzziness” from trapped thin growth is normal, you should see the light clearly on the other side; if obscured, you should clean the strainer. See below.*

CHECK THE TRANSMISSION OIL LEVEL once every two weeks, more often if a transmission shifts erratically, with the dipstick on the starboard side of each transmission. It is unlikely that any oil will need to be added. Be sure to check under the transmission for leaks! Low transmission oil is a serious matter. *With the engine idling, remove the transmission dipstick. Wipe it with a towel, reinsert it, and take a reading. If the level is below the add mark, stop the engine, add a pint of the same oil used for the engine crankcases through the plug in the top of the transmission case, and then start the engine and measure again. Do not overfill, for to do so could cause the seals to “blow out”.*

### Stopping The Engines

Stopping an engine immediately after it has been working under load can result in overheating and accelerated wear. ALWAYS allow the engine to cool before shutdown.

- Place the Control Heads in NEUTRAL.
- Run the engines for 5 minutes at 1000-1200 rpm to allow heat to be carried away. *The Engine Room Exhaust Fan may be used to help cool down the engine room and engines.*
- Depress the STOP button on the instrument panel for each engine until it stops.
- Turn key switch to OFF and remove key. By completely stopping the engine before turning the key OFF, the alarms will be tested and the tachometer will keep working until shutdown.
- Turn OFF the circuit breakers Engine Control (L) and Engine Control (R) on the 24V DC NAV/COM panel.

### Engine Room Exhaust Fan

The engine room exhaust fan blows air **out of** the engine room air space through an aluminum louvered vent in the port side, thereby bringing in outside air into the engine room. Operation of the engine room exhaust fan is **not required while underway**. However for personal comfort while working in the engine room, the fan removes stale hot air, cooling the engine room and equipment. The fan is operated by turning On the breaker Engine Room Exhaust Fan, located on the 120/240V AC Electrical Panel No.1 in the pilothouse.

### Sea Strainers & Seacocks (Raw Water Cooling)

The sea strainers on this boat are secure and reliable. They protect the engines, generators and air conditioning cooling systems from water-borne debris which might block cooling water flow through the equipment. The sea strainers should be inspected before starting engines as part of the pre-departure engine procedures.

#### Cleaning A Sea Strainer

- Close the raw water intake seacock.
- Using a spanner wrench, **remove** the cover plate.
- Grab the bronze handle of the basket, **pull** the basket out of the strainer.
- **Open** the seacock **briefly** to ensure unobstructed flow. An obstructed flow may indicate a visit under the boat is necessary to remedy.
- Clean the basket with fresh water and liquid soap.
- Replace the basket in the strainer.

- Replace the cover plate. Using a spanner wrench, tighten the cover plate.
- Open the seacock and check for leaks.

If the sea strainer was not blocked, it is likely any overheating was due to a failed impeller in the sea water pump, or the pump's belt is broken. Replace it if you know how, otherwise call the Charter company for assistance.

### Replacing A Pump Impeller

- Follow the hose from the strainer to the pump.
- Remove the back plate (opposite end from the pulley).
- The impeller, shaped like ' \* ' and it will likely have one or more broken or damaged arms (if no arm is broken, the problem isn't the impeller, consult a mechanic).
- If an arm is broken, slide the impeller out the back of the pump
- Clean out the pump chamber, trying to get all the pieces out of the water system.
- Lubricate the new impeller with hand soap or dishwashing detergent.
- Aligning the "flat" on the shaft with the matching "flat" on the impeller, and pushing the blades aside as required, slide the new impeller into the pump.
- Replace the cover with its gasket and tighten its screws or bolts securely. OPEN
- THE SEACOCK.
- Start the engine and check for proper operation.
- Be sure to make a log entry (notifying the Charter company) regarding the impeller replacement, specifying which pump was serviced.

## 13. FUEL SYSTEM

Inception has four (4) diesel fuel tanks, located in the engine room, with a total capacity of 1760 gallons. The two forward tanks each hold 640 gallons and the two aft tanks each hold 240 gallons. Each tank has its own deck fill and vent line, all located amidships, starboard side. Each deck fill is equipped with a screw cap engraved with the word "DIESEL". A sight gauge is located on each tank. Each sight gauge has a shut-off valve at the top and bottom. The two forward tanks are used to supply fuel. The Port tank supplies the port engine, the 20kW generator and Webasto diesel heater. The Starboard tank supplies fuel to the starboard engine and the 8kW generator. *The two aft tanks are for fuel storage only. The two aft tanks are normally left empty.* The fuel manifold is located in the engine room on the forward bulkhead port side, *but is used for fuel polishing and fuel transfer and should not be changed.*

### Checking the Fuel Level

- a. Using the sight gauges: each tank has a sight gauge. Each sight gauge has a shut-off valve at the top and bottom. Open each valve, allow a few moments for the level to equalize. Close all valves. The level in the sight gauge represents the level currently in the tank.
- b. Floscan: The two FloScan 9000 units in the pilothouse are used to monitor and display accurate and current consumption of fuel on each engine. The system calculates fuel consumption by subtracting fuel return from fuel flow. It displays the following:
  - GPH - the current rate that fuel is being consumed (gallons per hour)
  - Hours - the total number of the engine is **running**
  - RPM – engine rpm speed  $\pm 1\%$
  - Gallons – total fuel **consumed since last reset** (a reset switch is located next to each FloScan display and would normally be toggled at the end of fueling when the tanks are full)

## Fuel Management

Consider the following when reviewing and planning fuel needs:

- **Estimate high** on fuel consumption.
- At 6 kts. figure 1.4 GPH, at 7 kts. figure 1.9 GPH and at 8 kts. figure 2.8 GPH, **for each engine.**
- The 20Kw generator uses 1.7 GPH, while the 8Kw generator uses 0.95 GPH.
- The Webasto diesel heater uses 0.7 GPH.
- Plan on a 20% **reserve**, or a minimum of 100 gallons.
- Fill out the Fuel Log **each time the tanks are filled.**

## Filling the Fuel Tanks

The fuel tank deck fills are located amidships, starboard side in a fueling 'box' designed to contain spilled fuel. The fueling box has a drain which should be temporarily capped during the fueling process. Each tank has its own deck fill and vent line. Each deck fill is equipped with a screw cap engraved with the word "DIESEL".

***DO NOT FILL AFT FUEL TANKS unless you have coordinated with San Juan Yachting beforehand.***

### ***Before you start to fuel:***

- a. Make sure the engines and generators are shut down, the stove is off, all ignition materials have been extinguished, and everyone else is off the boat.
- b. Make sure fire extinguishers, first aid kit and clean-up materials are readily available.
- c. Place an absorbent pad (diaper) in the bottom of the fuel box after temporarily plugging the drain hole.
- d. Wet the deck area adjacent to the fuel box with a bucket or two of fresh water. This will help prevent spilled diesel fuel from staining the teak deck. Clean any fuel spill off the deck--- it is slippery and hazardous

### Fueling Procedure

1. Fill **FWD PORT** tank first, then **FWD STDB** tank.
2. Open sight gauge valve for the tank or tanks to be filled.
3. **Have someone in the Engine Room to monitor the sight gauges during the fueling process.**
4. Make sure the overflow vent is visible, open and unobstructed.
5. ***Fuel spills are the responsibility of the person operating the fueling hose.*** Fueling can be messy: have an absorbent pad, rag, and/or paper towels from the engine room to have at the ready.
6. Open the DIESEL plate with the spanner wrench/key located in the drawer in the helm.
7. Insert the nozzle into the fill valve, then start the flow. ***Do not but nozzle on automatic mode.***
8. As the tank fills, LISTEN for the sputters and WATCH the fuel vent. It will gurgle before the tank is full. Your goal is to STOP pumping BEFORE liquid fuel spurts out of the vent.
9. Have the person monitoring the sight gauges call out when the tank is nearly full.
10. Do not overfill the tanks. After the flow stops completely, remove the nozzle from the fill tube, put the nozzle into the next tank fill and repeat the procedure.
11. When fueling is completed, put the hose back on the dock, screw the fill caps back in place, and return the key to the drawer in the helm.

## Servicing the Fuel Filters

*Few things you do are as important to your safety on the water as having uncontaminated fuel*

*going to the engine!* Inception is equipped with four (4) dual RACOR fuel filters, one pair for each engine and each generator. On each dual filter assembly, there is a yellow handle RACOR valve control which allows each filter to operate separately. **The handle pointer indicates which filter is ON.** A vacuum/pressure gauge is located on each dual filter assembly. The dual filter system allows one filter at a time to be serviced, even if the engine is running

**a. Check the fuel filters for contaminants or water as part of the pre-cruising engine room check.** If there are contaminants or a separation of fluid in the bottom of the glass collection containers, they should be drained of the contaminants:

- Turn the **short pointed end** of the yellow selector lever **AWAY** from the filter with contaminants, and towards the other filter that will remain active while you are servicing the contaminated filter.
- With a collection container in place, open the black drain at the bottom of the glass container by partially turning the valve; *quickly retighten* the valve when the water or contaminants have been drained.

**b. Switch to the alternate filter and replace the clogged RACOR fuel filter if the pressure gauge reads between 7 and 10.**

The dual RACOR fuel filters have a vacuum gauge which is read when the engine is running at cruising speeds. The RACOR Company instructions say when the needle on the vacuum gauge reads between 7 to 10 inches (of vacuum) it is time to replace the filter element. The elements are changed routinely, but you never know when water or contaminants will get into the fuel tank, so be prepared to change out the filter if the vacuum gauge is reading between 7 and 10 inches! The **replacement RACOR 2-micron filters** are located in the plastic bin in the engine room marked CUMMINS MAIN ENGINE SPARE PARTS, RACOR FUEL FILTERS.

### Replacing A Fuel Filter

1. If the engine is ON, turn On the **Engine Room Exhaust Fan** circuit breaker on the 120/240V AC Main Electrical Panel No. 1 located port side in the pilothouse.
2. The filter to be changed is the one in use at the time the vacuum gauge was reading above 7. Turn the yellow RACOR handle **pointed end AWAY** from the filter to be replaced (towards the alternate filter).
3. Place a suitable collection container under the filter to be serviced.
4. Remove the lid of the filter to be replaced by turning/loosening, by hand, the brass T handle located at the top of the filter unit. Remove the filter element by holding the molded handles on the filter element and slowly pulling upward with a twisting motion.
5. Replace the black lid gasket with a new black lid gasket supplied with the new filter. Apply a coating of clean fuel or motor oil to this gasket seal prior to reassembly. Insert the new filter (with labeled end up) with a slow downward twisting motion.
6. Fill the filter unit with clean diesel fuel by pouring it on top of the filter element. Clean diesel fuel is located in a blue gallon jug in the engine room marked "Diesel Fuel".
7. Replace the red O ring on the brass T handle shaft under the lid with the new red O ring provided with the new filter element.
8. Then put the lid back on the unit and snugly tighten the brass T-handle by hand ONLY.
9. Turn the filter selection handle to bring the filter just replace back **on line**.
10. If necessary, start the engine and check for leaks. Correct any leaks with the engine off or turn the filter selection handle to take the filter **off line**.
11. Remember to replenish the jug of clean diesel fuel at the earliest opportunity.

#### Tools and Equipment Needed:

- Quart container of diesel fuel
- Collection container + absorbent disposable towels or clean rag

## 14. GENERATORS

Inception is equipped with two Northern Lights Marine Generators. One is 20Kw with Power Take Off for the hydraulic bow thruster and windlass. The other generator is an 8Kw. Both generators provide 120/240V AC at 60Hz. The AC power provided is primarily used for battery charging, heating hot water, running the washer & dryer, and running the CruisAir air conditioning units. The generator are both located in the engine room, and their oil and coolant levels are checked before each charter by the charter company staff. Access to these is by unlatching and removing the aft panel on the generator's sound-shield cabinet. More important is checking the sea strainer (see previous section) to be sure it has not accumulated substantial debris while the generator was run for extended periods, particularly at anchor.

If the DC panel gets down to 12 volts, run the generator to recharge the batteries. The Generator Panel is located in the center of the upper (overhead) electronics panel in the pilot house.

### Starting the Generator

- a. There are 2 rocker switches on the right side of the panel used to start the generator engine. Hold the top switch DOWN in the ON position for approximately 15 seconds to preheat the engine.
- b. While holding the *upper* switch in the *down* position, *lift up on the bottom switch* to start the engine. As soon as the engine starts, release the bottom switch. If the engine fails to start with the first attempt, be sure that it has stopped completely before re-engaging. *Do not crank the starter for more than 20 seconds consecutively. DO NOT CRANK THE STARTER MORE THAN 3 TIMES – THE GENERATOR COULD BE DAMAGED BY FILLING WITH WATER. If the generator fails to start, consult the Operator's Manual.*
- c. Continue to hold the top switch, Preheat, in the *down* position for 10 seconds after generator starts, then release.
- d. Let the generator run for 3-5 minutes to warm-up before adding an electrical load.
- e. After the warm-up period, turn change the Selector Switch on the 120/240V AC Distribution Panel No. 1 or Panel No. 2 to the running generator. The 20Kw genset is GEN 1 and the 8Kw genset is GEN 2 on both Panels.
- f. Select the desired circuits which you want the generator to operate and move them to the ON position.

### Monitor the generator panel

- The oil pressure must be above 15 PSI.
- The DC voltmeter should read between 11 and 15 volts.
- The water temperature must be below 180 F.
- If the gauges deviate from normal levels, shut down the generator and investigate, referring to the Owner's Manual.

### To Shut Down the Generator

- a. Remove the electrical load –Turn OFF ALL 120/240V AC equipment and appliances. Turn to OFF the Selector Switches on the 120/240V AC Distribution Panel No.1 and Panel No.2.
- b. Continue to run the generator 3 to 5 minutes with NO LOAD to cool down.
- c. At the Generator Panel, move the lower rocker switch down to the STOP position momentarily until the generator stops, then release.

## 15. GALLEY EQUIPMENT

The Galley is equipped with standard household appliances, including a 21 cubic-foot KitchenAire

side by side Refrigerator-freezer; a Viking 4 burner propane Range with oven; a GE combination Microwave-Convection oven and exhaust fan is installed over the Viking range; a Miele® Dishwasher; and a GE Trash Compactor. These are conventional units that operate in the usual manner. The Galley has a deep stainless steel single basin sink with Corian countertops. There is plenty of storage space in the cabinets and the drawers below the countertop, and the cabinets overhead. The countertops have teak trim and fiddles. A Dutch-style weather-tight door leads to the Starboard deck and provides natural ventilation to the Galley and easy access for provisioning.

### **Dishwasher**

The Miele dishwasher is provided 120V AC power by turning ON the circuit breaker labeled DISHWASHER located on the 120/240V AC Distribution Panel No. 2. The vessel must either be plugged into shore power or the Generator must be running. The dishwasher uses 2300W, about 20 Amps of AC.

The circuit breaker labeled FRESH WATER PUMP on the 24V DC Main Panel Disconnect must also be ON. The dishwasher uses about 5.5 gallons of water per use, it heats its own hot water.

### **Garbage Disposal**

This is a conventional household unit; DO NOT USE IN NO-DISCHARGE ZONES!

### **Freezer**

Inception is equipped with a Kenmore Chest Freezer, located in the office area (enclosed in a teak cabinet). The freezer uses 120V AC. The circuit breaker Freezer located on the 120V AC Inverter Bypass panel must be "On". The freezer can operate off of the inverter if necessary.

### **Icemaker**

The Raritan icemaker is located in the across from the galley lower aisle in the lower cabinet against the starboard side. The circuit breaker Ice Maker located on the 120V AC Inverter Bypass panel must be "On". The icemaker can operate off of the inverter if necessary. Also, the Fresh Water breaker must be "On" to supply fresh water to the icemaker. To stop its ice production, lift the arm.

### **Microwave**

The GE Profile Microwave/Convection Oven is a conventional unit that runs on 110V AC, it uses 1300W (about 12.5 Amps) of AC. The circuit breaker Microwave located on the 120V AC Inverter Bypass panel must be "On".

### **Refrigerator**

The KitchenAire side by side refrigerator runs on 110V AC, the circuit breaker Refrigerator located on the 120V AC Inverter Bypass panel must be "On". For ice cubes - the freezer drawer contains an icemaker which *is not connected* to the fresh water supply. Ice cube trays are provided instead.

### **Trash Compactor**

The GE Trash Compactor runs on 110V AC. The circuit breaker Trash Compactor located on the 120/240V AC Distribution Panel No.2 must be turned "On". Trash bags are stored under the lower companionway steps.

### **Range / Oven / Propane Tanks**

The boat is equipped with a Viking 4 Burner Range with Oven, operated in the conventional

way. It is designed to burn only propane gas. To use it, the valve on the propane tank must be Open (in the starboard flybridge storage locker). Turn “On” the circuit breakers PROPANE SOLENOID on the 12V DC NAV/COM panel and the STOVE on the 120/240V AC Main Panel No.2. Switch “On” the Solenoid Control switch located on the bulkhead to the left of the range.

Enable Gas Flow by pressing ‘Pressure Switch On/Off’ button on the LP gas detector panel above paper towel holder (also confirm tank valve is open in flybridge storage locker). The LED should turn green, the LP gas detector is very sensitive and can cause an couple of alarms when trying to initially use the oven. If an error or alarm occurs, reset it by pressing & holding ‘Pressure Switch On/Off’ button, then turn on oven (it will light automatically if breaker is on).

If for any reason 120V AC, **from either a genset or shore power**, is not available the electric igniters will not work. The surface burners can still be used, but will need to be lit with a match or lighter. **Do Not attempt to operate the oven.** Make sure the oven control is in the **OFF** position.

*Please note that the propane tanks and propane valves (the hand valve and the solenoid valve) are located in the propane locker on the flybridge. This is vented and isolated from the rest of the boat. Any leaks there will move down, out, and away from the boat. The tank can be turned off at night if so desired. While the propane tank normally lasts for 4 weeks or more, San Juan Yachting’s staff tops them off every 2 weeks...so you’ll have plenty for your cruise!*

## 16. HEADS & HOLDING TANK

The Master and Guest heads both have a VacuFlush freshwater toilet. The VacuFlush system provide guests with comfortable, sanitary and odor free toilet service. The toilet system works on a vacuum principle. An electric pump creates a vacuum in the vacuum tank (charges the tank) and also pumps waste to the holding tank. The heads use about a pint of fresh water with each flush.

***Note: Inception has a Y valve (located in the forward machinery space), which allows the option of flushing directly overboard when cruising in an area where sewage discharge is permitted. The Y valve is zip tied in the Holding Tank position, and must not be tampered with.***

### Using the Head

- a. At the 24V DC Main Panel in the Pilothouse, make sure the following circuit breakers are “On”:
  - Fresh Water Pump
  - Master Head Vacuum Pump
  - Guest Head Vacuum Pump
- b. Turn ON the switch on the VacuFlush Status Panel located on the front panel of the sink in each Head. Make sure the green light is ON – under normal operating conditions the red lamp will light for 1 minute after each flush until the pump recharges the vacuum to proper operating level, then the green lamp will light.
- c. To add water to the toilet before using, raise the foot pedal until desired water level is reached.
- d. Use the head. In conformity with San Juan Yachting’s policy, **DO NOT PUT ANYTHING DOWN THE HEAD THAT HAS NOT BEEN EATEN FIRST.** Please, NO tampons or other feminine products, no hair, no Kleenex, and no toilet paper!! Use the waste basket and the plastic bags located in the cabinet under the sink to dispose of these items.

***\*\*Remote cruisers have a rule: “Never put anything down a marine toilet that hasn’t***

*been eaten first.” And that, of course, **includes feminine items**. In fact, remote cruisers do not even put soiled toilet tissue down a marine head. They simply deposit soiled toilet tissue (and feminine items) in a receptacle such as a waste basket with a liner bag or a zip lock baggie, but not down the toilet. We and San Juan Yachting highly recommend you follow this rule. Since we’ve been recommending this, we’ve had almost no incidents of plugged heads!*

- e. When flushing, the push down to evacuate bowl. Let pedal valve snap closed rapidly. Please then place more water in the bowl by raising up on the foot pedal briefly to ensure a vacuum seal. If the flush lever is accidentally released before waste clears the bowl, do not attempt to flush the toilet again until the vacuum pump stops running (about 1 minute) and the red light goes out.

### **Head Problems**

The only likely head problem is a clog caused by improper use. Remember, the two head systems are completely separate except for the holding tank: If you have trouble, turn off the faulty head and use just the other head; call the charter company for assistance. Of course, if the holding tank is full, the heads cannot work! Pump the holding tank (see below) when required!

### **Cleaning the Head**

There is a toilet brush in the cabinet under the sink. Use liquid dish washing soap and water for everyday cleaning of the toilet bowl. Never use chlorine based cleaners, caustic cleaners, chemicals, drain openers, alcohol, solvents, etc. in the system.

### **Monitoring the Holding Tank**

The holding tank has a capacity of 100 gallons and should be monitored daily. The TANKWATCH monitor panel is located in the Pilothouse. The gauge will register the level of the contents of the tank: Green - empty, Yellow - Low, Amber - Mid Level, and **Red says the tank is Full — DO NOT ADD MORE.**

### **Discharging the Holding Tank**

The WASTE fitting is located on the Portuguese Bridge deck, near the wing helm station. This can be a messy job, there is a box of disposable latex gloves and clean-up rags in the engine room.

To empty the holding tank at a pump-out station or at a portable holding cart

- a. Locate the deck fitting labeled WASTE just outside the port helm door.
- b. Open the deck fitting with the key located in the helm drawer.
- c. Before handling dockside pump-out hose, **put on disposable latex gloves**.
- d. Push the pump-out nozzle into the WASTE deck fitting and hold the nozzle securely to create an airtight connection to allow the contents of the waste tank to be vacuumed out of the holding tank.
- e. Follow the instructions at the pump out station to pump out the holding tank.
- f. Rinse the waste holding tank after emptying:
  - Add a few gallons of fresh water through the WASTE deck fitting with the available fresh water hose from the dock. **(DO NOT USE INCEPTION’S WHITE FRESH WATER HOSE.)**
  - Reinsert the pump-out nozzle into the boat’s WASTE deck fitting and pump some more liquid out of the waste holding tank.
  - Repeat this procedure.
- g. When the tank has been pumped, check the Tank Level Monitor in the head to confirm your

- success; it should show a green light.
- h. Carefully remove the pump-out nozzle and place it back on the portable holding cart or the pump-out station.
  - i. Replace the deck fitting and tighten it down with the key.
  - j. Return the key to the helm drawer.
  - k. *Wipe up* any spills on the deck and *throw away* the used disposable gloves and wipe up rags.
  - l. *Wash down* the fill area on the boat with the fresh water hose.

## Discharging the Holding Tank Overboard

*This method of discharging the holding tank should only be used in strict compliance with the law. A thorough understanding of the laws and regulations of overboard discharge is mandatory before discharging waste overboard.*

**Confirm the SEACOCK IS OPEN BEFORE OPERATING MACERATOR DISCHARGE PUMP.**

- a. Open waste discharge thru-hull seacock located under the holding tank in the Forward Machinery Space.
- b. Turn ON the circuit breaker on 24V DC Main Panel Disconnect labeled 'MACERATOR PUMP'.
- c. Monitor the Holding Tank Level Monitor. When the status light turns green, the holding tank is near empty. The macerator pump has a flow rate of 4.5 gallons per minute (17.0 L). Emptying a full holding tank will take slightly more than 22 minutes.
- d. Do not run dry as the macerator pump can burn out easily.
- e. When finished, turn OFF the 'MACERATOR PUMP' breaker.
- f. Close and SECURE waste discharge thru-hull seacock prior to returning to a No-Discharge Zone. **This is a Coast Guard requirement.**

## 17. HEATING & AIR CONDITIONING SYSTEMS

**The primary heating system** is a Webasto hydronic diesel furnace. It has 10 heat exchangers zones, the main living areas controlled by 5 thermostats, while other areas have an "On/Hi/Lo" switch to regulate heat. The Webasto system requires very little power to run and can easily operate without the need of running a generator.

**The air conditioning system** is provided by the Cruisair reverse cycle cooling and heating system. The Cruisair system is also controlled by 5 thermostats. The total system has four 12,000 BTU units, one 16,000 BTU unit and two 7000 BTU units. The Cruisair system uses a lot of power and requires either a shore power connection or a generator must be running.

### Heating System

The Diesel Furnace was installed to make your chartering experience a more pleasant one. It is a Webasto hot water circulating system, considered by many the best available. The water is heated in the furnace in the lazarette, and then circulates through heat exchangers in 10 zones (the salon, galley, office, pilothouse, pilothouse window defrosters, each head, each stateroom and the aft cockpit). The 5 main living areas (salon/galley, pilothouse, office, master stateroom and guest stateroom) each have a thermostat and a "hi/lo" fan switch to control the temperature. The heads and aft cockpit heat exchangers each have a fan that can be set to "off", "low", or "high", thus controlling the relative heat that each area gets.

To use the heater, turn “On” the Webasto Heat switch, located at the top of the steps from the pilothouse to the salon in the pilothouse above the power panels, the green light will indicate on. The hot water circulating pump runs off of 120VAC, the breaker Inverter Bypass Panel must be “On”. Set the thermostats to the desired temperature – about 67°-68° seems right. The thermostats have a Day (sun symbol) and Night (moon symbol) mode. The Sun setting is used when the ship is occupied. The Night setting is for when the ship is unoccupied. The temperature setting will be displayed & may be changed using the up/down arrow buttons. To turn off the heat, turn the Webasto Heat switch to “Off”.

When the Heat Switch is On, if any area is cool enough to trigger it’s thermostat, the system will start. After a few moments you will hear a soft “clicking” as the furnace’s electric fuel pump operates. The furnace will go through a startup/warmup cycle that lasts a minute or so. After the furnace fires, and when the circulating water reaches 80 degrees, the fans in the heat exchangers turn on. From this time on, the furnace and blower will operate just as with a home system. The furnace uses very little fuel, about 2 pints an hour. DC energy consumption is around 8 amps if everything is running, so without the generator running, you may want to monitor the batteries carefully, especially if using the freezer. Keep the batteries charged! (The owners usually leave the heater “off” overnight, turning it on upon waking up in the morning; the boat will be warm in about 10-15 minutes!)

*Note: If the Diesel furnace seems to go through a start-up cycle but does not actually start, try waiting until the unit shuts down completely, switching off the switch, then turning it back on again.*

>>> WARNING <<<

*The exhaust from the furnace is on the outside of the hull, to port, just forward of the aft port transom door, and could be very hot! Be sure that a fender, dock if moored, or another boat, if rafted, is not so close as to be overheated and possibly ignite from this potentially hot blast! (The fender-holding Can-Cleats are spaced appropriately).*

### **Air Conditioning System**

**The air conditioning system** is provided by the Cruisair reverse cycle heating and cooling system. There are five Keypad/Display thermostats controlling the climate throughout the boat. They are located in the main salon, the master stateroom, the guest stateroom, the office and the pilothouse. The Cruisair system is reverse cycle, meaning it will cool and heat. On Inception, it is used only for cooling. The Webasto diesel furnace is quieter and more efficient at providing heat than the Cruisair system.

The Cruisair system uses a lot of power and requires either a shore power connection or a generator must be running. *If using shore power, remember to watch the load on your cable, not exceeding the lower of the shore box or 50 amps.*

To turn on the air conditioning system:

- a. Make the proper Selector Switch setting on the 120/240V AC Main Electrical Panel No.1 and Panel No.2 depending on the source of the AC. *See Electrical section in this Manual for details.*
- b. **Open the raw water intake seacocks.** The seacock for the galley and salon is located in the engine room. The seacock for all other areas is located in the Amidships Machinery Space below the office. *These seacocks are normally left in the “open” position when the vessel is not being used.*
- c. Turn “On” the breaker Air Condition SW Pump located on the 120/240V AC Main Electrical Panel No. 1.

- d. Turn “On” the breaker on the 24V DC Main Panel Disconnect labeled #1 Cond Drain Pump if operating any units in the pilothouse, master stateroom, guest stateroom or office.
- e. Turn “On” the breaker on the 24V DC Main Panel Disconnect labeled #2 Cond Drain Pump if operating any units in the galley or salon.
- f. Turn “On” the appropriate breaker on the 120/240V AC Main Electrical Panel No. 1 for the air conditioning units you want to operate:
  - Pilot House Air Condition
  - Master SR Air Condition
  - Guest SR Air Condition
  - Port Office Air Condition
- g. Turn “On” the breaker Air Condition Saloon on the 120/240V AC Main Electrical Panel No.2 for air conditioning in the galley and salon.
- h. **Check for seawater flow** at the overboard discharges. For the galley and salon, the overboard discharge is starboard, aft. For the other areas, the overboard discharges are located port **and** starboard, amidships. If you **do not observe** a steady water discharge flow, **immediately** shut the system down and check the seawater system.
- i. Adjust the temperature settings on the Cruisair thermostats as desired.

## 18. SPARES

Inception carries an extensive collection of spare and replacement parts. See the Inventory for their description and location. Spare engine belts, oil filters, fuel filters, and impellers are in labeled bins in the Forward Ships Machinery Space. The spare oil and coolants are also located there and in the engine room. You will also find a red tool box in the engine room.

## 19. WASHER/DRYER

Inception is equipped with a GE Spacemaker Washer/Dryer. It operates on 120V AC. To use, turn “On” the breaker Washer Dryer on the 120V AC Control Center Panel No.2. The vessel must either be plugged into shore power or the generator must be running. The Fresh Water Pump breaker on the 24V DC Main Panel Disconnect must also be “On”. If hot water will be used, see the Hot Water section. The Washer turns on by pulling the washer knob.

## 20. WATER SYSTEMS

### Water Tank

There is a 400 gallon fresh water tank on *Inception*. The tank and shutoff are in the amidships machinery space located below the office.

### Checking the Water Level

The sight gauge for checking the fresh water level are on the tank. At the top and bottom of the sight gauge are shut-off valves that must be open to read the gauge. The sight gauge is calibrated in 50 gallon increments.

### Filling the Water Tank

- Locate the deck plate marked WATER on the Portuguese Bridge, starboard side. The deck plate key to open the plate is located in the chart drawer in the helm.
- Connect the WHITE with BLUE STRIPE fresh water hose (located in the lazarette in the cockpit) to the domestic water supply at the pier. Let the water run through the hose (overboard) for a minute or two to wash any contaminated water from the hose. **DO NOT USE THE HOSE AT THE DOCK TO FILL THE WATER TANK—YOU DON’T KNOW WHERE IT HAS BEEN!**

- Fill until water comes out the vent/overflow on the hull just below the deck fill.
- Tighten the deck plate.
- Return the deck plate key to the chart drawer in the helm.

### **Water Pressure System / Fresh Water Pump**

This pump pressurizes an accumulator tank. This accumulator tank builds up water pressure so that the water pump does not need to run every time water is turned on. It shuts down when the tank is at “working pressure”. If you don’t hear the pump start up when you turn the breaker in the electrical panel “On”, it means that the system is at working pressure – you may hear the pump start again after you use a couple of gallons of fresh water (may need to press the Power switch on Pump to reset it after switching the breaker On – located under the office in the amidships machinery space) It is a good idea to turn off the Fresh Water Pump breaker whenever leaving the boat or while motoring, lest a dripping faucet cause the pump to run and waste your drinking water.

### **Watermaker**

*Inception* is also equipped with a watermaker located in the port side of the lazarette. It will produce about 18 GPH of fresh water which flows into the water tank. To use, turn on the breaker Watermaker on 120/240V Distribution No.2 panel. Go into lazarette and turn on switch on front of panel. Wait about 2 minutes for motor to warm up and turn black knob clockwise until gauge indicates 800 PSI, monitor for a few minutes to fine tune. Check fresh water flow in sight gauge to the left of the pressure knob. To turn off, back off knob to reduce pressure to zero, wait about 2 minutes and turn off main switch. Turn off breaker on electrical panel. **NOTE: The watermaker uses a lot of electricity so we always run the generator when making fresh water.**

***Water in marinas and anchorages is much more susceptible to pollution. Even a small amount of petroleum product can adversely affect the membrane. We generally recommend using only while under way.***

***If marked “Pickled” do not use until flushed and filter is installed.***

### **Deck Washdowns**

#### **Fresh Water**

There are two (2) fresh water deck washdown connections, located on the Bow and Aft decks, have a positive lock bayonet connect and disconnect feature. Push the connector into the deck fitting to connect the hose and pull out the connector to disconnect. This can be done while the fresh water system is pressurized.

#### **Salt Water (Raw Water)**

The raw water deck washdown is located at the Bow, Port side. Turn “On” the Salt Water Pump breaker on the 24V DC Main Panel. The salt water pump is self-priming and will prime within a few seconds. If there is now water flow, check to see that the raw water intake seacock in the forward machinery space is Open.

*Always turn “Off” the Salt Water Pump breaker when the pump is not in use.*

### **Hot Water**

Hot water is provided by a 30 gallon tank heated electrically and by a heat exchanger from the Webasto diesel heater. You automatically have hot water if the Webasto is running. When connected to shore power or using the generator, the water heater is electrically activated by turning ON the circuit breaker on the 120/240V AC Distribution Panel No. 2 in the Pilothouse labeled ‘WATER HEATER’. The water heater operates off of 240V AC. The water heater is

located in the amidships machinery space. The heater is insulated well enough to keep hot water overnight without power, provided you haven't wasted a lot in dishwashing!

*Please don't try to create hot water with the inverter by flipping the "Water Heater" breaker "On" without another AC power source. It will rapidly drain the house batteries and not enough water will be heated to make a difference.*

## **Shower/Sink Drain System**

### **Shower Drains**

The shower stalls in the Master Head and Guest Head are equipped with a drain/sump system. The shower water discharge is piped to an overboard discharge located above the water line.

The circuit breakers on the 24V DC Main Panel Disconnect labeled 'SHOWER PUMP AFT' and 'SHOWER PUMP FWD' need to be in the ON position for the shower drain pumps to operate.

In addition, there is a rocker switch, located in the Master Head and Guest Head, on the front of the sink, labeled 'ON/OFF'. The rocker switch should be turned ON to activate the drain/sump pump while showering, turn Off when done showering.

### **Sink Drains**

The sinks in the Galley, Master Head, and Guest Head drain by gravity directly overboard.

## **22. WHAT TO DO IF ...**

### **ANCHOR CHAIN WON'T COME OUT OF CHAIN LOCKER**

The anchor chain is continuous, secured at both ends, and cannot tangle. But sometimes a pile of chain will fall over, and one loop of chain will fall through another loop. Usually you can clear this by grasping the chain where it exits the hawse pipe from the chain locker with your hands, and pulling it up or down to "jiggle" the loop out of the chain; you may have to retrieve some chain to do this, in order to have enough slack to jiggle it! It is rare when this will not clear the jam. The other solution: Climb down into the chain locker and clear the tangle.

*Caution: Turn off the windlass breaker to protect your hands when manhandling chain!*

### **ANCHOR FOULED, CAN'T RAISE IT**

This can happen if you "pull the boat to the anchor" with the windlass. You should move the boat under power until it is over the anchor, or, even better, slightly ahead of it before hauling. Usually this will clear it. Otherwise, take a line and form a fixed, loose loop around the chain. Weight the loop, and lower it down the line until it reaches the bottom, sliding down the chain. Then, using the dinghy, take the line forward past the anchor so that you can pull the anchor out, opposite the direction its flukes are pointing. This should help you to pull the anchor free.

### **ANCHOR WINDLASS WON'T TURN**

If the 20Kw generator is running, is the Bow Thruster/Windlass circuit breaker in the 24V DC Nav/Com panel starboard of helm "On"? Is the Bow Thruster Control enabled, LED green? If the motor is running, is the clutch tight? Use the anchor windlass emergency handle stored in the bench seat storage locker. Windlasses are equipped with a shear pin to protect them: if you sheared the pin, you will have to haul the anchor by hand using the emergency handle. See the Maxwell Windlass manual for details; spare pins are in the spares kit.

### **BATTERIES (HOUSE) KEEP RUNNING DOWN**

Have you run the engines or generator enough? Is something left on (like the engine room or mast lights, too many electronics, etc.) that is too great a load for the time you were not charging? Are you using the inverter for big jobs? Use the generator or shore power. Have you had the inverter on whenever plugged in to shore power or running the generator? You must, for the house batteries to charge!

### **ENGINE OVERHEATS**

Is the drive belt for the water pump intact? Spare belts are in the engine room spares kit. Is the sea strainer clogged? See that section in these Owner's Notes. Is the impeller shot? If sea strainer is clear and belt is good, this is likely. Change the impeller (spare in spares kit) or call a mechanic.

*Do not run engine if it overheats! See Sea Strainer discussions page 28.*

### **ENGINE WON'T START**

If starter does not turn, is transmission in neutral? Try jiggling shift lever while pushing start button. Check battery, battery switches. Turn the Parallel Solenoid breaker "ON" (located in the 24V DC Nav/Com panel starboard of helm) and try again, or start generator, charge all the batteries. If starter turns, assume fuel problem: did you bump a fuel valve on the fuel tanks? Make sure all open, if one was closed, re-prime engine or call a mechanic if you can't do this (see John Deere engine manual).

### **FOG DELAYS RETURN**

Call charter company by telephone or VHF marine operator and advise for instructions.

### **HEAD WON'T FLUSH**

Is breaker on? Turn it on. Have you over-filled the holding tank? Pump it to allow more effluent to

enter it. See the “Heads” section of these Owner’s Notes. If all else fails, just use only the other head.

**HIT A FISH NET**

Engines in Neutral: don’t try to back off, you may foul the net more. Try pulling the boat back with the dinghy & outboard. Get assistance from the fisherman. *You are responsible for damage you cause to a net!*

**HIT A LOG OR ROCK**

See EMERGENCY PROCEDURES, next section.

**PROPELLER FOULED OR DAMAGED**

Best thing: have the prop checked by a diver or dive it yourself if able. Check for vibration. Try turning shaft by hand in engine room, both should be turn-able with engine in neutral. Is shaft noisy, or does it load engine? Do not use that side or call for assistance. See EMERGENCY PROCEDURES, next section.

**WATER (FRESH) WON’T FLOW**

Is there water in the tank? Is Fresh Water Pump breaker on? If you know how, check pressure switch on pump, run manually if necessary.

# EMERGENCY PROCEDURES

## Protect your lives first!

Put on life jackets

Contact the Coast Guard with an emergency "MAYDAY" call.

If adrift, prepare to anchor to keep the boat from drifting into danger.

If the boat is really sinking, consider "beaching it" if necessary.

Launch the dinghy and prepare to board if necessary. Take a handheld VHF radio, if available.

Be sure to wear life jackets!

## Then, worry about the boat!

In a true emergency, you certainly are authorized to call for immediate commercial assistance as minimally required to assure the safety of you and the boat.

It is not an emergency, however, if neither you nor the boat are at risk. For all non-emergency assistance or mechanical repairs done by others, the charter company MUST give prior approval for you to be reimbursed!

## If you think it may not be an emergency:

If you have any concern about your long-term safety, contact the Coast Guard, either normally or using an urgent "PAN" call. Tell them that you are calling to advise them about your situation, so they can keep in touch.

Be sure that the status and safety of the boat and crew is someone's responsibility while you sort out the boat's problem. For example, delegate your mate to keep a watch for hazards, or to operate the boat on course slowly while you deal with the difficulty.

Here is a checklist for solving the problem:

- (A) Isolate it;
- (B) Get the manuals;
- (C) Get parts;
- (D) If necessary, call the charter company for help.

Over the years, most problems with charter boats are caused by misuse! Holding tanks overflow because they aren't checked; heads clog because foreign matter (especially facial tissues and tampons) are put in them; engines fail because they run out of fuel, then must be "purged" to re-start. Use the boat carefully, and you'll avoid these problems.

Almost all problems that are not operator-caused, i.e., that are boat deficiencies, are caused by pumps that fail, hoses and belts that break, and seawater strainers that get clogged.

Generally, these problems are annoyances, and usually they are inconvenient, but they still *can* happen. Try to stay calm, collected, and be a professional by dealing with the problem in a businesslike, calm way. It will make everyone's day a better one!

## Hitting a Log, Rock, or Debris ----- Please Don't!

Hitting a log is a real risk in our Northern waters because logging, and "log rafts," are such a big part of our commerce.

If you hit a log:

- Did you put a hole in the boat? Idle the engines, then think: usually, you can tell just by where the noise of the hit came from. Check the bilges (don't forget the lazarette area, where the rudder posts are) after putting the engines into idle and/or neutral, if necessary.

If you did "hole" the boat, go immediately to EMERGENCY PROCEDURES on the preceding page.

- If no hole, and still idling, is the boat vibrating?

**Yes**, put each engine into neutral in turn, identify and shut down the offender. Then continue on one engine. Call the charter company after you reach the closest safe harbor.

If **No** vibration at idle, slowly accelerate one engine at a time. Is there vibration on either?

If "yes," run at idle or on only the good engine, to reach a close, safe harbor. Then contact the San Juan Yachting 1-800-670-8089.

*With a twin-screw boat, the damaged running gear can't be used after hitting an object. However, if while under way on one engine the other engine's propeller shaft rotates by itself because of water passing over it's propeller, then you must let the unused engine idle in neutral so that its transmission has lubrication, and the cutlass bearings on the damaged shaft are lubricated.*

*When running on one engine with the other idling as required, be sure that the idling engine is pumping water through its exhaust pipe.*

- If there is no vibration on either engine, you probably did no running gear damage.

Congratulations! Our diver will check your vessel's bottom upon your return, just as after every charter.