

# **OPERATING MANUAL FOR "Kelli G"**

**Version 2010**

Welcome aboard!

The Kelli G is a 1985 Nova 40. We purchased her in July, 2002. She is 43' 8" in length overall, and has a beam of 13' 9" with a draft of 3'9." "Kelli G" is a documented motor yacht displacing approximately 28,000 pounds. Her hailing port is LaConner, Washington and her Coast Guard number is 944364.

**PLEASE TAKE THE TIME TO READ THIS MANUAL AND USE IT AS A  
REFERENCE SOURCE DURING YOUR CRUISE**

"Kelli G" is a complicated piece of machinery and requires considerable knowledge and skill to operate safely and trouble free. The combination of this "User's Manual," nautical charts (with a GPS assist), Chapman's "Piloting, Seamanship and Small Boat Handling" book, "The Coastal Pilot" book, the "Operating File" and your orientation with the San Juan Yachting staff will include pertinent information needed to operate "Kelli G."

Please ask any and all questions you may have about operating "Kelli G" of the people orienting you at San Juan Yachting Charters. They expect and welcome this, so don't hesitate to be very thorough.

You will find a logbook forward of the helm station in the main salon. Your comments are not only welcome but are encouraged.

Richard L. Garbutt  
Barbara Peterson-Garbutt

## TABLE OF CONTENTS

### BOAT EXTERIOR:

FORWARD AREA .....	
Bow Anchor & Rode .....	1
Forward Ventilation Hatch .....	1
Shore Power .....	1
Fuel Fillers & Holding Tank Pump Out .....	1
BRIDGE (upper).....	
Bridge Controls & Instruments .....	2
Compass .....	2
Raymarine Chart Plotter C-120 .....	2
Raymarine Radar .....	2
VHF Radio .....	2
Raymarine Depth Sounder .....	2
Gauges .....	2
Engine Operation (see ALSO pg. 19-23) .....	3
Helm Control .....	3
Throttles & Shift Levers .....	3
Trim Tabs .....	3
Bridge Dash Lockers – Contents .....	3
Radar Antenna .....	4
SUN DECK ROOF .....	4
AFT SUN DECK .....	
Aft Stateroom Ventilation Hatch .....	4
Wet Bar and Storage .....	4
Icemaker .....	4
Horseshoe Buoy .....	4
Boat Pole .....	4
Deck Chairs & Table .....	5
Barbecue and Crab Cooker .....	5
SWIM PLATFORM/BOARDING LADDER .....	
Dinghy .....	5
Outboard Motor .....	5
Side Mount Boarding Ladder .....	6

## BOAT INTERIOR:

MAIN SALON .....	
Helm Station .....	6
Raymarine Depth Sounder .....	7
Standard Horizon VHF Radio .....	7
Raytheon Radar R21X .....	7
Raymarine Chartplotter C-70 .....	7
Instrument Panel (Includes all panel gauges, switches, engine controls) .....	7/8
Trim Tabs .....	8
Rudder Position Indicator .....	8
Electrical Panels .....	8
AC Power Source Select Knob .....	8
Heart Interface (Inverter) Master Breaker .....	9
Main Panel Switches – DC .....	10
Main Panel Switches – AC .....	10/11
Inverter .....	11
Heater Systems .....	11
Electric Systems .....	11
Diesel Furnace .....	11
AM/FM Radio/CD .....	12
TV and DVD .....	12
Main Salon Storage .....	12
GALLEY.....	
Stove .....	12
Microwave .....	13
Refrigerator .....	13
Icemaker .....	13
Cooking & Serving Ware .....	13
Toaster & Coffeemaker .....	13
Coffee Grinder & Blender .....	14
Galley Storage .....	14
Galley Sink & Potable Water .....	14
HEADS & WATER SYSTEMS .....	
Hot Water Heaters .....	15
Heads .....	15
Holding Tank .....	15
Holding Tank Evacuation .....	15

Maceerator Pump .....	16
Pump Out Station .....	16
Showers .....	16
FORWARD STATEROOM .....	
General .....	16
Ventilation Hatch .....	16
Forward Stateroom Lights .....	17
Anchor Rode Locker .....	17
AFT STATEROOM.....	
General .....	17
Ventilation Hatch .....	17
Aft Stateroom Lights .....	17
Vacuum Cleaner .....	17
ENGINES & ENGINE ROOM .....	
Engine Operation .....	18
Checking Oil Level .....	18
Checking Fuel Filters .....	18
Checking Sea Strainers .....	19
Charging Batteries .....	19
Generator .....	20
Engine Room Storage .....	20
Fuel Tanks .....	20
Starting the Engines .....	20
Stopping the Engines .....	21
DOCKING & MANEUVERING .....	
General .....	21
Getting Ready to Dock .....	22
Maneuvering .....	22
Shore Power .....	23
ANCHORING & BUOY TIE UP .....	
General .....	23
Anchor Windlass .....	24
Anchoring .....	24
Raising the Anchor .....	25
Anchor Light .....	26
CHECKLIST FOR GETTING UNDERWAY .....	
General .....	26
Engine Room .....	26

Engines at Idle .....26  
Leaving Moorage .....26

SUMMARY OF SAFETY & CONVENIENCE ISSUES .....27  
CHECKLIST WHEN LEAVING BOAT AT A DOCK OR AT ANCHOR.28  
CHECKLIST FOR RETURNING TO SQUALICUM MARINA .....28

## BOAT EXTERIOR

### FORWARD AREA

#### BOW ANCHOR AND RODE

There are 300 feet of anchor chain marked in 50-foot increments with various colored stripes. It is raised by a very powerful windlass. Power to the windlass is controlled by a switch in the forward stateroom marked, "Windlass" and by a foot switch next to the windlass for raising the anchor. Lowering is accomplished with a friction clutch located on the starboard side of the windlass and tightened or loosened with a handle located under the entry way step into the lower helm station.

**KEEP CHILDREN AWAY FROM THIS AREA WHEN POWER TO THE WINDLASS IS SWITCHED ON OR WHEN RAISING THE ANCHOR.**

See "Anchoring and Buoy Tie-up" section.

There is an emergency replacement anchor stowed under the forward bed with the rode.

#### FORWARD VENTILATION HATCH

**BE SURE THE HATCH IS LATCHED TIGHT BEFORE TRAVELING.** Climbing into a wet, cold, clammy bed after a long day of cruising is not what you want on your vacation! On cool nights condensation can form on the inside of the hatch. An absorbent cloth panel may be snapped on inside to keep the drips out of your face.

#### SHORE POWER

The power cord hook-up is midship on the starboard side. Be especially careful to keep the cord clear of any creosote piles or surfaces when hooking up to shore power. Store the coiled power cord in the starboard bridge seat locker. 15:30 and 20:30 amp adapters are available at the step at the lower helm for use at docks with limited AC power facilities.

#### FUEL FILLS, WATER FILLS & HOLDING TANK PUMPOUT DECK CAPS

There is a diesel fuel filler cap on each side deck. There are TWO water tank fills: one is on the starboard catwalk, and one at the swimstep on the port side of the transom. There is one holding tank pump out cap on the port side deck catwalk. **READ THE CAPS** to be sure you get the right ones!

## UPPER BRIDGE

### BRIDGE CONTROLS AND INSTRUMENTS

Please keep in mind that slightly submerged rocks in otherwise deep water are **EXTREMELY COMMON** and the depth sounder won't pick them up before you hit them! In these areas the depth sounder is excellent at confirming that you are, in fact, aground, but not good at warning you of impending dangers. For this reason pay close attention to your charts.

Depth sounders also perform poorly in very deep water (200' and deeper). Erratic depth sounder readings (or not reading at all) are common in deep water as the sounder increases sensitivity trying to find the bottom. It is not uncommon in deep water situations for the depth sounder to mistake thermal layers or school of fish for a bottom, resulting in unsettling moments if you aren't sure of your location on the chart. For your safety and cruising comfort always know your location on the chart and pay special attention to the charted depths and hazards. You will find the depth sounder to be the most useful during the anchoring process.

### COMPASS

Compasses are very inaccurate and differ from one another. Use bearing lines on chartplotter or hand compass.

### RAYMARINE CHART PLOTTER/RADAR

Instructions are in the "Operating File" in the "Navigation" folder. This instrument is a helpful adjunct to nautical charts but is **NOT A SUBSTITUTE** for them. In addition to indicating your approximate location it provides an accurate speed over-the-bottom adjusting for the effect of tidal currents.

**It is best not to be underway in conditions that require radar use. Please refer as well to your San Juan Yachting Charter contract on usage.**

### VHF RADIOS

Radio operating knowledge is desirable for safe travel. FCC rules require you to listen to Channel 16 while traveling. There are two VHF radios on the upper bridge. Both should be on and monitoring channel 16. The ICOM model 502 has a distress channel. It is best to know your position and contact either Vancouver Coast Guard radio or the US Coast Guard via channel 16. Use the alert Pan, Pan, Pan if you are in distress but not in immediate danger of sinking or Mayday, Mayday, Mayday if your situation is life threatening.

### GAUGES

It is important that these gauges are carefully and continuously monitored. Oil pressure should be 40 to 80 psi. It generally reads about 55 psi. Engine temperature should remain in the 130-190° F range, usually 170 to 175°. The voltmeter should read about 13 when underway.

**BE SURE TO SHUT DOWN IF THE TEMPERATURE OF EITHER ENGINE EXCEEDS 200° F OR THE OIL PRESSURE IS BELOW 40 PSI.** An alarm should sound if these limits are exceeded. If engine overheats, check in order:

- Sea water strainer
- V-belts
- Salt water pump impeller

ENGINE OPERATION - See Engines and Engine Room section.

### HELM CONTROL

At both helm stations there is an indicator that shows you the position of the rudder. This is a great aid. To enable the helm indicator, turn on "Rudder Angle Indicator" on the DC section of the electrical panel. Please turn off when not in use.

### THROTTLES AND SHIFT LEVERS

Gentle, positive movement of the throttles and shift levers is all that is required.

**NEVER SHIFT THE TRANSMISSION UNLESS THE ENGINES ARE IN IDLE (ABOUT 600 RPM). If you do you might find yourself paddling home in a 28,000 pound boat!**

**ALWAYS PAUSE FOR A MOMENT AT NEUTRAL POSITION WHEN SHIFTING FROM REVERSE TO FORWARD OR VICE VERSA.** This allows the transmission mechanism to follow your shift lever inputs without damage and prevents unusual wear and tear.

### TRIM TABS

The best technique for the initial use of the trim tabs is to first remove all trim by pushing the trim switch "bow up." After obtaining a desirable RPM and speed, gradually press "bow down" in ½-second intervals until the desired boat deck angle and optimum speed are attained. Then compensate for lateral (list) trim by introducing small inputs opposite the low side until the boat is level.

### BRIDGE DASH/ SEAT LOCKERS - Contents

- crab ring
- spare mooring lines
- extra 200 ft. line emergency anchor rode (below FWD bunk).
- potable water hose
- salon windshield cover
- propane bottles for barbecue
- sponge and bucket
- cover for bridge instruments if not in place
- propane tank
- Shore power cords (stbd seat)
- PFD's "Life Jackets" (port seat)
- Large aluminum propane bottle BBQ and Crab Cooker

### RADAR ANTENNA

Be very careful when near the radar antenna. Clear the antenna area prior to activating the radar transmitter.

### SUN DECK ROOF

This area is NOT a normal storage or passenger environment. Please do not use it.

HOWEVER, BE SURE ALL ANTENNAS ARE IN DOWN POSITION BEFORE ENTERING ANY COVERED MOORAGE. Replacing them would not only be costly but completely unnecessary if reasonable care is taken.

### AFT SUN DECK

#### AFT STATEROOM VENTILATION HATCH

This hatch is located on the port side of the deck. **BE SURE THIS HATCH IS LATCHED TIGHT BEFORE TRAVELING.** Spray from rough seas can get into the stateroom below if left open.

#### WET BAR AND SUNDECK STORAGE

The sink on the sundeck is easily fouled with debris. Seafood should preferably be cleaned off the boat somewhere, but if that is not convenient use the swim platform or the aft sun deck and thoroughly wash down deck, sides, swim platform, dinghy, etc.

#### ICEMAKER

The U-line ice maker is mounted on the aft sun deck. Turn the freezer on and off by using the "Icemaker switch" at the AC electrical panel and the "FW Pump". It does NOT operate on 12 VDC. If the unit does not have power check the GFI in the AC outlet in the aft head above sink. It may have tripped and shut down the AC circuit to the ice maker.

#### "HORSE SHOE" BUOY LIFESAVING SYSTEM

Because the water temperature of this region is about 50° or less, the danger of hypothermia can be great if exposed for even a few minutes.

The Horseshoe buoy system is mounted on the forward starboard wet bar wall of the aft deck.

#### BOAT POLE

One boat pole is located on the port side of the sun deck. It telescopes and twist locks out to 8 ft. in length. Boat poles are important for the crew to have ready when in close quarters. If the boat pole is kept in their intended storage location, they are easily available on short notice. However, attempting to stave off from objects to prevent collision is not recommended as the pole may collapse and/ or fold injuring the user. Unless the closure rates are very small, don't risk life and limb with this device. It is intended primarily as a device to pick up rather than to push.

If you use hands or feet to fend off, be sure they're not where they can get caught and crushed by the 28,000 pound "Kelli G."

### DECK CHAIRS AND TABLE

There are four folding padded chairs and four teak chairs are on board for your enjoyment and use. Please ensure they are "secured" before getting underway and shift in a seaway.

### BARBECUE AND CRAB COOKER

There is a large aluminum propane bottle under the fly bridge dash specifically for the BBQ. Please note there is permanent propane tank there also. Please use the portable aluminum one for the BBQ.

To operate the barbecue, please refer to instructions in the "Operating File" in the Salon. **ALWAYS STORE PROPANE FUEL FOR THE BARBECUE IN THE DASH LOCKER ON THE BRIDGE OR SUNDECK CABINET. Never bring propane fuel into the cabin area.**

**PLEASE DO NOT BOIL CRABS IN THE GALLEY. THE SMELL LINGERS FOR WEEKS. THE WEST MARINE BBQ ON THE AFT RAIL IS BIG ENOUGH FOR THE CRAB POT AND GETS THE WATER BOILING MUCH FASTER THAN BELOW.**

### SWIM PLATFORM

### DINGHY

We have provided you with a 11.5' Aquapro dingy with a 9.9 Honda on a Seawise Davit system.. The dinghy unit also includes two oars, and fuel tank. Be sure to include sufficient life jackets for all persons on board.

Use unleaded regular gas and DO NOT ADD OIL TO GAS, ENGINE IS 4 STROKE.

The Seawise Davit system allows one to both launch the dingy and mount the outboard without having physically lift the outboard on board. The person doing the orientation should demonstrate the proper protocol for launching the dingy. Basically, one loosens the wing nut locking the motor down, rotate the motor "forward to the 90 degree position to clear the tube, operate the winch to lower the motor with the dingy to the water, use wing nut to secure motor, release launching cable and return the cable to the winch.

Secure the dingy to the boat with a bowline, and while still attached to the boat with the snap davits, load the gas can.

**BE SURE TO RELEASE DAVIT HOOKS BEFORE STEPPING INTO THE DINGHY.**

### OUTBOARD MOTOR

To start the outboard motor:

- open vent on gas can.
- attach the fuel line to outboard, **IT ONLY GOES ON ONE WAY**
- Squeeze the bulb on the fuel line several times to get fuel into the motor.
  - Pull out the red button on the end of the throttle arm and insert the slotted key. Without this key in place, the engine will not run. The red cord attached to the key is

supposed to be clipped to the operator. If the operator falls overboard it will pull out the key and stop the motor.

- Pull out the choke control.
- Open throttle (counter clockwise) very slightly.
- Be sure gear shift is in NEUTRAL.
  - Pull starter rope until engine fires. You may have to play with the choke to keep the motor running.

**DO NOT PULL SUCH A LONG STROKE THAT YOU SLAM AGAINST THE END OF THE ROPE, AND DO NOT RELEASE THE STARTER CORD AND LET IT SNAP BACK. ALLOW IT TO REWIND GENTLY WITH YOUR HAND TO AVOID BREAKING THE REWIND MECHANISM.**

**Load your passengers with their life jackets on. Secure all lines so as to not foul the prop and you are off.**

When returning, off load your passengers, remove the gas can and rotate the outboard forward 90 degrees. Have a crewman play out the retrieve cable from the winch and secure it to the retrieve site. Exit the dingy and secure it to the snap davits. Then start to retrieve the dingy and outboard. Watch carefully as the outboard passes over the tube and adjust manually to get the motor mount to seat properly. Secure the lockdown on the davit. Once the outboard is secure, then bring the outboard to its upright position on the davit.

**SECURE ALL DINGY LINES SO AS NOT TO FOUL THE MAIN PROPS.**

**Close the tank vent on the gas can and secure it on the swim step below the ladder and the oars in the dingy.**

**NEVER FILL DINGHY FUEL TANK ON BOARD THE SUN DECK OR LIVING SPACES AT ANY TIME. DO NOT FILL THE TANK OVER 3/4 FULL AS FUEL WILL LEAK OUT WHEN THE TEMPERATURE INCREASES.**

**NEVER USE SWIM PLATFORM FOR SWIMMING WITH THE ENGINES RUNNING. IF A PROPELLER WAS ACCIDENTALLY PUT IN GEAR THE RESULTS COULD BE DISASTROUS.**

#### SIDE MOUNT BOARDING LADDER

The removable boarding ladder must ALWAYS be removed when moving the vessel. It will surely break if you engage a piling or pole on a dock during landing or departure. It is stored in a bracket above the wet bar on the sun deck.

#### MAIN SALON

#### HELM STATION

This is the most complex area of the boat. In addition to duplicating the bridge instruments, the helm station houses the electrical panels and most of their associated switches.

- RAYMARINE Depth Sounder - This is a vital instrument if you're operating at the helm station. As is true of most of the depth sounders in our waters, the effects of temperature, and salinity differences in the several layers of water reflect and refract electrical sweep pulses and will often give incorrect transient readings. Expect erratic readings occasionally in deeper waters.
- Standard Horizon VHF Radio – Turn it on and set the volume with the “Vol” switch. Set the Squelch filter to that point where the background hiss just stops. Channel 16 should be monitored anytime you are under way, and can be accessed by depressing the 16/9 button. Other channels can be selected with the up or down arrowed buttons, and weather channels can be obtained by depressing the “WX” button and then selecting the best received channel with the up or down buttons. To get back to a non-weather channel depress the “WX” button again. Check VHF folder in "Operating File."
- RAYMARINE Chartplotter C-70 GPS - See operation manual for instructions. This instrument is a helpful adjunct to the nautical charts but is NOT A SUBSTITUTE for them. In addition to indicating your approximate location, it provides an accurate speed over the bottom adjusting for the effects of tidal currents.
- RAYTHEON R21X Radar - It is best not to be underway in conditions that require radar use. Please refer to your San Juan Yachting contract on usage

## INSTRUMENT PANEL

Gauges - Water tank and fuel tank gauges are also located here. They indicate tank quantity when the normally off three-position toggle switch is momentarily displaced up or down.

Water tank gauges read forward tank, toggle up and aft tank toggle down

Port and Starboard Engine keys, start and stop buttons - Please refer to pages 20 thru 23 for correct starting and stopping procedures.

Tachometers - one for each engine. Located in the middle of the panel.

Volt Meters - to each side of the tachometers - one for each engine. These should read approximately 13 volts when underway.

Oil pressure Gauges (one for each engine) - are below the volt meters. They should read 50 to 60 psi. If the psi ever goes below 40 you have a problem and need to shut down the engines immediately until the trouble is found and corrected. More on this situation in the "Bridge" section of this manual. **If pressure drops below 6 psi a warning horn will sound. Do not continue operation of that engine!**

Temperature gauges - below the tachs. "Kelli G" operates consistently at approximately 175° F. **If the temperature reads below 160° F or above 200° F, shut down the engines until the problem has been remedied.**

Parallel Button- Concurrently depress this button during start if the engine start battery is so weak that the house battery needs to be paralleled to assist in the start.

Instrument lights, wipers, horn and - are all located on the panel. To activate the wipers and horn, you need to turn on the corresponding breakers at the DC electrical panel.

Transmission levers - to port

.

Throttle levers - to starboard.

Trim Tabs – The chrome joystick at the starboard side of the helm is turned on with a switch on the DC Panel. Moving the stick in a direction basically trims the boat in that direction. “Kelli G has no unusual lists to trim for. To resolve unusual trim or maneuver in following seas, start with the toggle full down until the trim tabs are retracted and then trim for nose position then list corrections.

Rudder Position Indicator - at both helm stations. Turn the DC switch at electrical panel labeled "Rudder Angle". Please remember to turn off when not using.

Helm Wheel - please become familiar with the number of revolutions on this wheel and how to determine when it is in dead ahead position using the rudder angle indicator.

## ELECTRICAL PANELS:

**Note: The AC master shore power breaker exists in the aft head near the window, above the counter. It has a green light denoting it is operational. Note its existence and location in case of AC failure due to inverter problems. See “inverter” notes below.**

AC Power Selector Knob - Located on the lower helm lower and port of the wheel directs electricity from "shore" or "generator" on board power or to the "Off" position when converting from one to the other source.

Heart Interface (Inverter) Master power switch- The master breaker is the metal switch to the lower starboard side of the wheel. This should always be left in the on position. If you want to activate the inverter, go the panel in the galley and use the touch pad denoted as “INV”. This enables the use of inverter power for appliances, TV, microwave, toaster, etc., when at anchor or underway. This allows the use of various appliances when not connected to shore power.

The inverter will automatically charge the batteries when connected to shore power WITHOUT activating the INV touch pad.

**Never input more than 20 amps on the “power share” touch pad. If you input more than 20 amps there is the potential for the main breaker to trip from power surges from the dock. NOTE THE MAIN BREAKER IS LOCATED IN THE AFT HEAD ABOVE THE COUNTER AND HAS A GREEN LIGHT SHOWING IT IS OPERATIONAL.**

When there is no external AC support being used **USE ONLY ONE APPLIANCE AT A TIME OR THE SYSTEM WILL OVERLOAD**. When this happens a breaker switch on the inverter under the aft galley bench seat will turn off the system. To reset locate the Heart Inverter and push in the white button marked "25." Do NOT use portable heaters when using the inverter. House/Inverter batteries are also charged by the port engine or by the shore power battery chargers.

### Main Panel Breaker Switches – DC

The DC panel comprises the upper ¾ of the switch panel. The master switch at the top allows 12 V DC to the two lines of DC Switches. The test switch allows a poor indicator readout of the House/inverter bank. (Much more accurate and reliable readings can be obtained by reading the panel readouts on the galley table side of the lower helm.)

Fwd Cabin lights – enables light switches

Salon Cabin Lights- enables light switches.

Aft Cabin Lights- enables light switches.

ER lights- turns on the engine room lights and a red indicator light in the galley ladderway.

ER Blower- turns on a fairly high DC draw fan and is **normally off** unless desired for start.

FW Pump- Provides power to the fresh water pump which is normally on unless the boat is left unattended, or the water tanks are empty. This pump is necessary for all faucets and the fresh water heads.

Macerator- normally off and only turned on to dump the contents of the holding tank overboard when and where it is legal to do so. Ensure the seacock associated with this pump is open before operating. There is no gage for the holding tank, JUST A “FULL” (RED) LIGHT UNDER THE THERMOSTAT FOR THE FORCED AIR HEAT, so by whatever means, empty the tank routinely to prevent overflow and damage to components. If using this switch, listen for the pump to go under a load and then stop when the RPM ‘s increase indicating no load.

Bilge Pump- this is an over-ride switch and will force the pump to run continuously until the switch is turned off. **Normally left off.**

Nav Lights- Turns on the red, white and green navigation lights. Note : your contract specifies no travel during the hours of darkness, or fog!!

Anchor Light- **Normally off, but turned on at sunset and off at sunrise at anchorages.**

Spreader. Lights- Normally off. Turned on when lights are needed on the sundeck or upper deck.

Wipers- allows power to the lower helm wiper panel switch.

- Horn- Provides power to the horn button at each helm panel.

- Fans and Blowers- provides power the individual fans throughout the boat.

- Refer- Powers the DC refrigerator. Leave "ON" always.

- Rudder Angle- powers the indicator at each helm.

- DC Outlet- powers the DC "cigarette lighter" sockets at each helm.

- Stereo- powers the stereo system in the starboard galley table locker.

- Depth Sounder- Powers both depth sounders.

- Sump Pump- ALWAYS LEAVE IN "ON" POSITION; OPERATION IS AUTOMATIC.

- Radar- Powers the radar units at the lower and the upper helm.

- GPS- Powers the GPS at the lower and upper helm.

- VHF- Powers all three VHF's.

- LPG- Powers the propane control panel in the galley for stove and oven use.

- Trim Tabs- enables use of the trim tab toggles at each helm.

## AC PANEL SWITCHES

The lower ¼ of the electrical panel are AC switches.

The top one is the AC Master Breaker which must be on for the other AC switches to function. An Orange light indicates "Reverse Polarity" which is a problem with the shore power source!! Disconnect from the source and find another. Generator or shore power powers the AC powered switches. AC outlets, including the microwave are powered by the inverter (which may be supported by the generator or shore power when selected.). When the generator or shore power is not on and supporting the inverter, individual items like space heaters and hair driers can rapidly drain the house inverter bank of DC reserves.

MAIN BREAKER IS IN AFT HEAD ABOVE COUNTER ON FORWARD SIDE OF WALL--BLACK BREAKER WITH GREEN LIGHT FOR ON

Refrigerator- Powers the AC icemaker.

- Outlets Fwd- Provides AC power to electrical receptacles forward. A few receptacles further receive power via “GFCI” ground fault circuit interrupt receptacles which have onboard re-settable breakers.

- Outlets Aft– Same as above except it also powers the ICEMAKER through a GFIC receptacle in the aft head.

Hot Water- powers the 10 gallon hot water tank under the aft bench seat in the galley.

- Stbd Outlet- powers a separate outlet in the galley table area.

## INVERTER

The inverter is located under the aft bench seat in the dinette, and the control panel is located on the wall above it. If items on the inverter circuit are to be powered, the press pad button “INV” must be on. If the house/inverter batteries are to be charged with either generator or shore power, the “CHG” pad must be depressed and the light on. Note: There is a time delay between the time of external power selection and inverter acceptance of several seconds... typically less than 30 seconds.

## HEATING SYSTEMS

There are two heat sources on "Kelli G"

ELECTRIC HEATERS - The two portable 120V electrical heaters are located in the forward and aft staterooms closets and can be used when on shore power or generator. Each heater has an independent thermostat on the heater. Be sure to not have stuff stacked in front of them when they are on or use them under way!

DIESEL FURNACE - The diesel furnace system heats the entire interior area with hot air outlets in both staterooms, both heads and the main salon. The thermostat is located next to the helm station side panel by the stairway into the galley. To operate, turn on the “System Heat” switch and set the temperature control to a high setting until furnace is putting out heat, then adjust temperature to the desired setting. This system is very efficient and heats up the entire vessel quickly. Please turn off the diesel furnace at the “System Heat” when leaving the boat. This system can be used when anchored or when the cabin electric heaters are not adequate while on shore power or generator.

EXHAUST; BEWARE; EXHAUST LOCATED JUST FORWARD OF PORTSIDE STEP DOWN. LOCATE IT AND AVOID HANGING FENDER OVER EXHAUST PORT. IT WILL MELT AND MAY CAUSE FIRE.

**ATTENTION:** If you start the diesel furnace, be sure to let it run for at least 20 minutes before shutting down. Running for less time can cause carbon buildup in furnace and eventually cause it to malfunction.

AM/FM Radio /CD Player - The "entertainment" center is located in the valance next to the lower helm chart plotter. The operating instructions are in the "Operating File" in the "Appliance" folder. There are speakers in the main salon. **NOTE; THERE IS PRESENTLY NO SIGNAL TO THE UPPER BRIDGE SPEAKERS FROM THE SALON ENTERTAINMENT SYSTEM.** The sundeck has its own AM/FM/CD radio and does have upper bridge sound.

### TV AND DVD (120 VAC)

The TV and DVD are on the main salon forward teak counter. The operating instructions are in the "Operating File" in the "Appliance" folder. The TV angle is adjustable with a lever lock between the TV and the DVD unit below it.

### MAIN SALON STORAGE

Entry Stairwell Cabinet - available for your use.

Forward Counter Cabinets - available for your use.

Center Port Wall Cabinet - Emergency flares, Operating File, Canadian flag, and non-skid pads, Binoculars, dividers, parallel rule, tool box and deck fitting key.

Book Rack/ chart locker aft salon - Chapman's, Coastal Pilot, and other book type publications. You will also find tide and current tables, and log book there. Charts are in the aft salon locker with access through a door near the entry to the aft stateroom.

## **GALLEY**

### STOVE

The stove is a propane powered, three-burner with an oven. There are three steps to get fuel to the stove. To use the unit be sure the tank valve is open on the tank under the bridge cowl, and "LPG" switch on the DC side of the electrical panel is on. This activates the propane switch above the galley stove top. To allow propane to the stove, turn on the switch at the port end of the shelf above the stove. A red light will show that the fuel valve is open.

Turn on a burner by pressing IN on the appropriate knob AND turning it to the left to "Light" position. On a line which has been vented, it may take several seconds for the propane to reach the burner elements.

If the burner won't light and you do not get fuel when both the "LPG" and propane panel switches are on, check the propane supply bottle in the port bridge locker and be sure the valve is open and, ideally, propane is in the tank. If all else fails, change tanks NOTE: If you are removing the tank yourself for filling, that the supply line fitting **SCREWS ON BACKWARDS!!!**

To light the oven, press in to light position. There is a pizo electrical lighting system and you should not have to use matches. Set the temperature control as desired (remove your face from in front of the oven!) and within a couple of minutes a larger pilot flame will start and then main flame will ignite.

**BE SURE THE OVEN CONTROL IS IN THE OFF POSITION when not in use. OTHERWISE THE OVEN AND GALLEY MAY SLOWLY FILL WITH PROPANE. THIS COULD RUIN YOUR WHOLE DAY!**

**ALWAYS TURN OFF PROPANE AT THE PANEL SWITCH ABOVE THE STOVE WHEN YOU ARE NOT USING THE STOVE.**

### MICROWAVE

To operate refer to the instructions in the "Operating File" in the "Appliance" folder. To use when you are not on shore power or generator, turn the Heart interface "INV" switch in the stbd galley settee area.

### REFRIGERATOR/ (12V ONLY)

A new, efficient 12V refrigerator was installed in July of 2009. Try not to open the refrigerator door any more than is necessary to lessen drain on the batteries. It can take several hours to make ice in the freezer so plan accordingly. Leave the DC switch marked "Refer" on at the electrical panel. It runs on 12V DC power only.

### ICEMAKER

The icemaker on the sundeck is powered through the "Outlets Aft" breaker on the AC panel, then through a GFIC receptacle in the aft head and to a receptacle in the sundeck cabinet. The Icemaker has an on/off switch in a recess below the icemaker door. It only runs on 110 VAC. You must have the shore, or generator or Inverter on for it to function.

### COOKING AND SERVING WARE

The galley is equipped with utensils, gear and table service sufficient to prepare and serve six to eight people. Try to store the galley gear where you find it.

### TOASTER AND COFFEE MAKER

These items are kept on the shelf above the microwave. They require the use of the Heart inverter unit to operate when you're off shore power.

### COFFEE GRINDER AND BLENDER

These items are in the cupboard below the microwave. AC power needed.

REMEMBER TO OPERATE ONLY ONE APPLIANCE AT A TIME WHEN ON THE INVERTER.

If you do happen to overload the system and the power goes off when you're on Inverter, you have tripped the safety breaker. Remove the overload. Then you can reset it by going to the Heart Inverter under the aft galley settee seat. Push the button marked "25" back in and you're in business again.

### GALLEY STORAGE

Galley counter hatch - a large garbage bag container is stowed conveniently here. Keep the container lined with disposable plastic garbage bags (extra tall kitchen size). There is also storage for canned goods on the sides of this locker which can be accessed by removing the container.

Stove drawer - look here for lids.

Over-sink cabinets - dishes and stuff.

Under sink cabinets - cleaning supplies, plastic bags, etc.

Counter drawers - stainless steel flatware, knives and cooking utensils, baking and measuring utensils. The water and fuel cap key is kept in the front of the silverware drawer. Please return it to this drawer after each use.

### GALLEY SINK AND POTABLE WATER

The water system has a conventional pressure tank and a pump that's located in the engine room. The water pump switch is on the DC side of the electrical panel. It is marked "Water Pressure." The water tanks holds about 200 gallons of water in two tanks. The forward tank has its own pump as does the aft tank. To operate just switch to which tank you are intending to use. **CONVENIENCE NOTE IT IS A LOT EASIER TO FILL THE FORWARD TANK THAN IT IS THE AFT TANK. THEREFORE, TRY TO KEEP REFILLING THE FORWARD TANK AS NEEDED AND ONLY RELY ON THE AFT TANK IF A FEMALE TYPE PERSON RUNS OUT OF WATER FROM THE FORWARD TANK WHILE ALL SOAPY. THIS TOO, COULD RUIN YOUR DAY.**

The water caps are on the port lower corner of the transom FOR AFT TANK and the starboard catwalk FOR THE FORWARD TANK.. The water cap and fuel key is kept in the galley silverware drawer.

You may estimate usage at 50 gallons of water per day, however, careful folks will use much less. It helps if the crew is instructed on how to take water conserving showers and how to use water conserving techniques while cruising. **Water cannot be obtained at every stop.**

**ALWAYS LET THE WATER RUN FOR A FEW SECONDS BEFORE FILLING THE TANK. IT WASHES OUT ANY UNSAVORY LIFE FORMS THAT MAY BE TRYING TO LIVE IN THE HOSE. COMPLETELY DRAIN THE HOSE BEFORE STOWING IT AWAY.**

**ALWAYS TASTE THE WATER BEFORE FILLING THE TANK TO PREVENT DISTASTEFUL WATER FROM CONTAMINATING THE TANK.**

**To insure that the water from any source is bacteria-free, you may wish to add about 3 teaspoons of Clorox to each 100 gallons of water. This shouldn't create a chlorine taste in the water.**

## HEADS & WATER SYSTEMS

### HOT WATER HEATERS

Potable water is heated in two ways. When cruising, the water is heated by the engine cooling water. When connected to shore power it is heated by a 120V electric element. The 10-gallon hot water heater is located under the aft galley bench seat. It must be switched on at the AC side of the electrical panel.

**IF YOU RUN OUT OF WATER AND LEAVE THE ELECTRICAL ELEMENT ON, YOU WILL BURN OUT THE ELEMENT.**

It can take up to an hour to heat 10 gallons of water with the engines running. If you are at anchor and need hot water available before cruising, run the generator for 30 to 45 minutes. If only a small amount is needed it is preferable to heat it on the stove.

### HEADS

Both heads have under sink and cabinet storage available for your use. **Always use "MARINE" biodegradable toilet paper** in the heads because it is designed for the lines and disposal system. It will dissolve to mush in about 30 minutes but regular toilet paper, Kleenex, and other products will block and stay blocked until it physically removed. This is neither a fun nor inexpensive. **Do not put items in the heads that will plug the lines.**

**KLEENEX, TAMPONS, SANITARY NAPKINS, PAPER TOWELS, HOUSEHOLD TOILET PAPER AND ANY OTHER HARD, TOUGH PAPER WILL PLUG THE HEAD AND LINES.**

Use garbage containers for these types of items.

**If you are careful the heads are very reliable. If you are not, you may have some less than pleasant memories of your cleaning activities!**

We have provided you with fresh-water push-button flushing on both heads. The DC switch labeled "FW Pump" at the electrical panel must be on for the heads to operate. **Guys, please sit, don't stand!** If you have a "solid" deposit wet the bowl before using. Remember toilet water goes into the holding tank so be efficient. The head uses fresh water from the fresh water tank.

### HOLDING TANK

The holding tank has about a **35-gallon capacity**. It is very important to be aware of how full your holding tank is. If it does overflow the effluent will go overboard at the vent on the port side. Embarrassing-and possibly costly if you are in a crowded marina. **With four people on board it takes about two days to fill the tank. Empty the tank daily to preclude a full tank. RED LIGHT AT GALLEY STEPS INDICATES "FULL"**

## **HOLDING TANK EVACUATION**

### **MACERATOR PUMP**

To evacuate the holding tank turn on the "Macerator" switch at the electrical panel while underway. CONTINUOUSLY HOLD DOWN PUSH BUTTON AT GALLEY STEPS WHILE CREW MEMBER OBSERVES DISCHARGE OVER PORT SIDE. Allow the macerator to evacuate the tank, ..... it may take about 10 minutes. NOTE: The holding tank discharge seacock is in the forward port engine room. It is normally open. DO NOT attempt to operate the pump with this valve closed.

### **PUMPOUT STATION**

Some marinas have pump out capabilities; however, they are rare. Do not count on marina waste dumps. A dockside waste dump cap is located on the port catwalk. You can open the dump cap with the water/fuel key in the galley silverware drawer.

### **SHOWERS**

THE SUMP PUMP BREAKER AT ELECTRICAL PANEL MUST ALWAYS BE LEFT ON. Both showers drain to a common sump in the forward bilge of the engine room. To conserve water you should turn off the water while soaping up and then rinse off. We have provided you with squeegees in each shower to remove excess water on the shower stalls. This keeps mildew under control and cabin humidity at a minimum.

## **FORWARD STATEROOM**

### **GENERAL**

There is one hanging locker, side wall and under bed storage, wall cabinets and drawers under the bed for your use. The First Aid Kit (one in each head) is kept in the head medicine cabinet for quick access in case of an emergency.

There are brass coat hooks located to the left as you enter the stateroom. We have found it adds a great deal to the orderliness of the boat to put coats and dry outer gear on these hooks upon entry into the main salon. **Please do not bring wet gear into the salon or staterooms.** There are hangers on the railing above the salon window on the aft deck where wet gear can be hung until dry.

### **VENTILATION HATCH**

This is located directly above the bed in the forward cabin.

### **BE SURE IT IS TIGHTLY LATCHED WHEN UNDERWAY TO PREVENT SPRAY FROM GETTING YOUR BED WET!**

If you should happen to get salt spray on the bed and bedding, please let your check-in person know so that salt can be removed. Otherwise the bedding will stay damp and eventually mildew and have to be thrown out.

### **FORWARD STATE ROOM LIGHTS**

The lighting in this stateroom is a bit frustrating! There are two banks of lights - main cabin lights and head lights. The odd thing is that the master light switches are located OUTSIDE the stateroom, BEHIND the stateroom door on the refrigerator cabinetry. Once they are on, individual lights are controlled with off/on switches at the light. You can leave the space and ensure all are off by turning off the master switches in the galley.

### ANCHOR RODE LOCKER

The cabinet above the headboard stores the anchor chain. On the panel near the door is the master DC breaker for the windlass. A red light on the panel indicates that the foot switch on the foredeck is armed and therefore dangerous if children or “whale watchers” are curious or inattentive on the foredeck. **Turn it off when not in use.**

## AFT STATEROOM

### GENERAL

There is a large hanging locker, drawers on either side of the headboard, drawers on the port side of the bed and shelves throughout the stateroom for your use. There are cabinets on the port side of the room with shelves inside for additional storage.

As in the forward stateroom, there are brass coat hooks located to the right as you enter the stateroom. These are great for dry outer gear, etc. Again, please hang any wet gear out on the aft deck until dry.

### VENTILATION HATCH

This is located above the port side console cabinetry.

## **BE SURE IT IS LATCHED TIGHTLY WHEN UNDERWAY TO PREVENT WATER FROM ENTERING THE STATEROOM.**

### AFT STATEROOM LIGHTS (much simpler than forward because it's not hidden by a door)

Main Cabin Lights – A master switch is to the port side of the stateroom entry steps and individual off/on switches are found at the individual lights

AC Reading Lights - individual switches. AC receptacle breakers on.

### VACUUM CLEANER

Stored in bottom of hanging locker in the forward or aft stateroom. Use only on shore power.

## ENGINES/ GENERATOR AND ENGINE ROOM

### ENGINE OPERATION

Diesel engines are designed to be operated under a load. Long periods of operation at slow speeds or idle can cause carbon buildup and, in some cases, fuel injector fouling. For cruising it is best to run the engines at speeds between 1700 and 2000 RPM with 1800 to 1900 being a reasonable choice. This will give you an average fuel consumption of 4 TO 6 gallons per hour, depending on weather and sea conditions. **It takes more fuel to maintain RPM's if the boat is being held back by heavy seas and strong winds.**

You can gain access to the engine room by lifting up the galley stairs and securing with the hook on the starboard side of the stairwell. Turn on the engine room lights at the electrical panel before lifting the stairs. You should not need to use the hatches in the salon floor as the carpeting removal process is onerous and only suitable for maintenance.

A red indicator light at the top of the steps shows when engine room lights are on. Of course, always turn them off when not needed.

**DO NOT GO INTO THE ENGINE ROOM WHEN THE ENGINES ARE RUNNING. KEEP CHILDREN OUT OF THE ENGINE ROOM AT ALL TIMES.**

### CHECKING OIL LEVEL AND TRANSMISSIONS

On the interior forward side of each engine you will find the oil dipsticks. Oil levels must be checked prior to each start. The proper indication on the dipstick is when the oil level is halfway between Min. and Max. Oil fill caps are on top of the chrome valve covers. AVOID adding oil to the cooling water fillers located forward of the oil filler caps! **If you add oil make sure you DO NOT overfill.** Only add oil if you are a quart or more low - **Delo 400-15 or 400-40. UNDER NO CIRCUMSTANCES USE ANY OTHER OIL. IT IS DIFFICULT TO ADD OIL IN THE CLOSE SPACE. PLEASE USE QUART BOTTLE INSTEAD OF THE HALF GALLON OR LARGER SIZES.**

**TRANSMISSIONS: US "ATF" and do not overfill.**

### CHECKING THE FUEL FILTER

The Racor fuel filters remove solid contaminants and all water. They are located on the forward bulkheads of the engine room. It is water that does the most damage to diesel engines. Check the filter sight gauges on a regular basis and especially check them during the first few hours of running after a fill up. Water will immediately show up if it is in the fuel.

**IF SIGNIFICANT AMOUNTS OF WATER SHOW UP, STOP THE ENGINES AND CALL SAN JUAN YACHTING ON THE RADIO, LANDLINE, or CELL PHONE.**

Water in the fuel will rapidly and permanently damage the fuel injectors. These fuel injectors cost \$150 a piece. Fuel is fairly clean in the summer because there is a large turnover. **We suggest you fill whenever you are at large, popular marine stations. Refilling at any and every opportunity exposes you to contamination.**

**It is best to fill the tanks before they get too far below half full to prevent condensation.**

### CHECKING SEA STRAINERS

The engines are cooled by seawater through heat exchangers. The seawater passes through the sea strainers before reaching the engine coolant. They are located aft of each engine on the starboard side of each transmission. If you cannot visually confirm the condition of the sea strainers, **close the thru-hull valve** proximate to the sea strainer. Undo the top and remove the strainers by twisting and pulling up. If there is seaweed, sediment, etc, clean off and then replace the strainers. Please use the wastebasket in the engine room for debris, don't leave it in the bilge.

**IT IS IMPORTANT TO SEAT THE STRAINERS UNTIL THEY DROP COMPLETELY DOWN AND THE HANDLE IS COMPLETELY BELOW THE LID. DO NOT LEAVE DEBRIS IN THE BILGE OR ENGINE ROOM.**

Return the sea strainer basket to the sea strainer and reconfirm that it is fully seated. If it is not it is probably offset, sitting atop a stud in the bottom of the strainer instead of in the strainer basket recess hole. Place the lid on the strainer a few turns, but not tight. Open the seacock and complete the process by initially allowing seawater to flow from the partially screwed down lid to confirm adequate flow through the seacock and supply line. Then tighten completely, checking the lid to ensure no water is leaking out. The lid must be **on securely** so that no air is sucked into the system. This could lead to engine overheating and damage. **RECHECK the thru-hull valve is open and observe strainers are free of debris and you're back in business.**

### CHARGING THE BATTERIES

There is one 8D starting battery, and six deep-cycle golf cart batteries for powering items on the boat. In addition, there is another type 27 battery reserved only for use in starting the generator. The house batteries are BIG batteries. **If they ever run down it will take SEVERAL HOURS to bring the voltage back up to normal. This is a situation you want to avoid! Battery voltage should be 13.5 - 14.5 VDC with 12.2 VDC as a MINIMUM.**

If at anchor for long periods of time periodically check the condition of the batteries. The battery test switch and gauge at top center in the electrical panel is **not the best** instrument. **The panel meters in the galley dinette, however, are the reliable and accurate source for battery voltage. If the batteries are low, run the engines, or generator with inverter charger charging long enough to bring them back into normal full charge (minimum 12.2 VDC; normal 13.5 - 14.5 VDC).**

All batteries are lead/acid batteries and should be checked periodically for fluid level. Only if the top of the plates are beginning to show should you add water. Use only distilled water and use it sparingly. Overfilling will cause the acid to boil over when the batteries are charging. There is a supply of distilled water in the engine room.

Port engine charges the "start" batteries. Starboard Engine charges the house batteries. Therefore, always start the Port engine first.

## GENERATOR

The Northern Lights Generator is located in a sound box in the aft engine room. Remove the cover to check the oil dip stick, coolant level, belt security and obvious signs of leakage.

The generator is started at a panel located on the inboard end of the lower helm. **To start the unit, make sure that the master AC source selector switch is OFF position. Depress the preheat/ override switch and keep it depressed for a minimum of 30 seconds, 45 SECONDS IS BETTER..** Then concurrently depress the start switch and the generator will start. Release the starter, then, release the override switch when the engine is stable.

NOTE: Unless the generator is warm from a previous running, the engine glow plug will not be hot enough to reliably start. I will advocate 45 seconds to ensure a proper light off. The result of not lighting off after a few bad start attempts is a potential hydraulic lock caused by cooling seawater pumped by the cranking engine which does not exhaust but back flows into the generator through the exhaust. If you have more than three no starts, drain the muffler before attempting another start. The simplest way to ensure a proper start is to depress the preheat switch for a minimum of 45 seconds

## ENGINE ROOM STORAGE

In the forward engine room are absorbent pads for use under the engines, pre-mixed coolant in plastic bottles, engine oil, funnel, distilled water in a dark blue dispenser bottle, empty plastic containers for fuel filter waste disposal, etc.

## FUEL TANKS

The fuel tanks hold about 400 gallons which is enough for 500-600 nautical miles of travel if used up completely.

The fuel caps are on both side decks parallel to the helm station. The fuel/water cap key is kept in the silverware drawer in the galley.

## **STARTING THE ENGINES**

**START PORT ENGINE FIRST** since that alternator will then recharge the starting battery.

When the engines are not in use the keys should always be in the helm station location. **This procedure needs to be followed step by step in sequence each time. Start one engine at a time.**

1. Keys should be in ignitions in "Off" position.
2. Advance Port throttle on starboard side of bridge panel to ¼ throttle forward. **DO NOT PUMP THE THROTTLES.**
3. Turn **Port key** to "On" position.

4. When buzzer sounds, press the "Start" button and hold down until the engine starts. Do not crank continuously for **more than 15 seconds** then allow at least a **minute before a second attempt**. You will hear it start and see the RPM needle jump on the tachometer. Make sure the RPM's do not exceed 1000 at start up.
5. Repeat this procedure for the other engine.
6. Check the oil pressure gauges. They should read about 50 psi.
7. Check the stern of the boat at the water line to make sure water is being ejected from both exhaust pipes.
8. Check the voltmeter gauges. They normally read about 13+.
9. Check the temperature gauges. **After 10 to 15 minutes they should read about 120°F.**

This is the starting sequence. **The engines need from 5 to 10 minutes to warm up to 120 before getting underway at slow speed. Do not move up to cruising speed until engines are up to full operating temperature - approximately 170°F.**

### STOPPING THE ENGINES

Put throttles all the way down into "Idle" position.

1. Put the transmission controls in "Neutral" position. **DO NOT TURN THE KEY OFF.**
2. **Push "Stop" button continuously for** one engine until buzzer sounds.
3. **Once the engine is completely stopped, turn key to "Off" position.**
4. Repeat for other engine.

### DOCKING AND MANEUVERING

#### GENERAL

"Kelli G" weighs 28,000 pounds and if uncontrolled it can do great damage to docks, other boats, itself or to those on board.

**USE ONLY IDLE THROTTLE POWER WHEN IN MARINAS OR CLOSE QUARTERS. PUT WHEEL IN DEAD AHEAD POSITION. WITH THROTTLE LEVERS IN IDLE, TAKE BOAT IN AND OUT OF GEAR TO KEEP MOVEMENT VERY SLOW AND CONTROLLED.**

Anticipating wind, currents and tide is very important. "Kelli G" draws just 3'9" of water and in the wind the boat surface above the water acts like a sail. Think about this when coming in or out of moorage and make it work for you, not against. The key ingredients to piloting a large boat successfully are patience, advanced planning and **SLOW MOVEMENT**.

### GETTING READY TO DOCK

1. All antennas in down position if coming into any covered moorage.
2. Fenders in position on BOTH sides with tips just trailing water. Adjust as needed for each dock and check after docking is complete.
3. Boat hook extended, out and ready to use.
4. Crew briefed and in position.
5. Docking lines out and ready for use.

This is the time to make sure everyone understands their job. Your crew should know what you intend to do and what you expect them to do. If you have briefed well, you can concentrate on maneuvering the boat and the crew will perform their jobs. Always use the boat poles or a **spare fender** to stop the boat or alter its movement. **NEVER GET HANDS OR FEET IN A POSITION WHERE THEY CAN BE PINCHED OR CRUSHED.**

### MANEUVERING

With one engine in forward thrust and one engine in reverse thrust "Kelli G" will easily turn in its own length.

One way to keep track of the way the boat will turn is by using the curve direction on the black transmission handles on the left side of the bridge panel or helm station. The boat will turn with the curve of the handle. For example, if the port transmission handle is put forward the bow will turn to starboard, in keeping with the starboard curve of the handle. If put in reverse, the stern will move to starboard.

When in position to start your landing maneuver, **center the rudder**. Refer to the rudder position instrument.

When docking idle slowly toward the dock and when ready to make the boat turn, engage the transmission handles as appropriate. Put engine in and out of gear to control your speed and turning rate.

**When docking or in close quarters use only prop thrust to steer the boat. When backing you can ONLY steer with prop thrust.** Docking a large boat to leeward or windward is an exercise in creativity! Always take the action of the currents and wind into account when planning your docking or maneuvering strategy.

**THE MOST IMPORTANT FACTORS ARE GO SLOW, BE PATIENT, PLAN AHEAD, BRIEF THE CREW AND STAY CALM. DON'T BE AFRAID TO BACK OFF AND TRY AGAIN.**

**FENDERS; PLEASE DO NOT LOCATE A FENDER NEAR OR OVER THE FURNACE EXHAUST. IT WILL BURN A WHOLE IN IT. PLEASE MAKE SURE YOU LOCATE THE EXHAUST PORT VISUALLY SO YOU AND YOUR CREW KNOWS WHERE IT IS. THE CHECK OUT PERSON CAN SHOW YOU WHERE THE EXHAUST PORT IT.**

## **SHORE POWER**

Dock shore power facilities come in basically three forms: 30 amp, 20 amp, and 15 amp service. Most US marinas and docks have 30 amp service, although some have 15 amp service.

"Kelli G" has a main power cord for 30 amp service. There are 20 amp and 15 amp adapters for the main power cord located in step storage locker at the salon door.

**With 20 or 15 amp services, you will have to be** careful about turning on the onboard equipment indiscriminately.

The shore power connection is midship on the starboard side of the cabin.

**BE SURE THE 120V SELECTOR SWITCH AT THE HELM STATION IS IN "OFF" POSITION AND THE ON-SHORE POWER BREAKER SWITCH IS IN "OFF" POSITION BEFORE CONNECTING OR DISCONNECTING THE POWER CORD.**

## **ANCHORING**

*300 feet of 5/16 hi test chain and 33lb Bruce anchor.*

### **GENERAL**

The first rule for anchoring is to review the tide and current tables before selecting a suitable anchoring site. Depths of **20 to 40 feet are best**. After you have selected your anchorage site, determine the depth by using the depth sounder, which gives you a reading of depth from the bottom of the boat. Allow for current state of tide. Next you and your crew will need to determine how much rode to release according to the following formula: (The bow is about 10 feet above the keel.)

Good weather: Depth at highest tide X 5

Bad weather: Depth at highest tide X 7

The anchor chain is marked in 50-foot segments. 50 ft orange, 100 ft white, 150 ft orange, 200 ft 2 white, 250 ft white/orange. Count to the nearest marker as the rode is being released. For example, when high tide depth would be 30', the "Good" weather amount would be to the third mark. For "Bad" weather go to the fourth mark and a little more.

BE SURE THERE IS ENOUGH DEPTH AT THE LOWEST TIDE TO ACCOMMODATE THE 3'9" DRAFT in a **360 degree full circle** OR YOU MIGHT WAKE UP AGROUND IN THE MIDDLE OF THE NIGHT!

Remember that tidal changes are very large at these latitudes, often 10 feet or more.

Anchoring in **mud or gravel bottoms** is best. The anchor does not set well on rocky bottom conditions. Actually, it may not set at all!

### ANCHOR WINDLASS

The windlass is used to raise the anchor. **Always have the engines running when using the windlass.** Its motor draws a lot of power and the engines need to be running to conserve battery power.

**ABSOLUTELY, ALWAYS KEEP CHILDREN AWAY FROM THE ANCHORING OPERATIONS.**

**KEEP YOUR HANDS, FEET, LONG HAIR AND LOOSE CLOTHING AWAY FROM THE WINDLASS.**

**NEVER PULL THE BOAT FORWARD WITH THE WINDLASS. THIS IS VERY HARD ON THE WINDLASS.**

You activate the windlass power by turning on the toggle switch labeled "Windlass" at the forward cabin bulkhead. This allows the foot switch beside the windlass to be used for raising the anchor and rode if needed.

Lowering is normally done using the windlass wrench (stored in the port bridge seat) and is needed to unlock the windlass before rode can be released. Place the wrench in one of the notches at the top of the capstan drum and turn counter clockwise to release clutch. Pull out enough slack in the chain to get the anchor off the bow roller, then retighten the clutch.

### ANCHORING

1. Determine a suitable anchoring site and the amount of rode you will need to release using the formula provided.
2. Brief the crew on their jobs, have them in position and ready to perform.
3. Slowly approach anchoring site into the wind or into the current, whichever is greater, and stop over the site.
4. Tell windlass operator on the bow to remove the safety line on the anchor, engage the winch handle in one of the three spoked arms of the clutch and ease the handle aft, pull the chain and the anchor out until it is hanging from the roller. Release the rode slowly. Back away very slowly as you're doing this so the chain doesn't pile up on the anchor and foul it.

5. As the rode is being released a crewmember will count the appropriate colored chain markers until the correct amount has been released. Each colored band denotes 50 feet of rode. Once the proper amount of rode is out tighten the clutch by rotating the winch handle forward until the winch is stopped. Use one engine intermittently in reverse idle to move the boat back as needed.
6. Put the engine in neutral periodically and let the boat maneuver astern. Watch the chain. It should go out at about a 35° angle or less and stop the boat. This sets the anchor. If you are not sure the anchor is set, put one engine in reverse idle and the anchor should hold the boat in position. If it does not hold the boat's position, repeat the process.

### RAISING THE ANCHOR

1. Start the boat engines.
2. Brief the crew on their jobs. Have them in position and ready to perform.
3. Have a bucket of salt water ready to wash off clumps of mud.
4. Turn on the toggle switch in the forward stateroom marked "Windlass."
5. Slowly and intermittently power forward. Have a crewmember simultaneously step on the windlass foot switch to raise the chain and anchor when appropriate. Wash off the rode and anchor as it is raised. Pick up slack chain only!  
**DO NOT PULL THE BOAT FORWARD WITH THE WINDLASS.**  
Cleaning the mud and debris off the rode and anchor will keep the rode locker in the forward stateroom fresher.
6. If the anchor is stuck on the bottom, bring up the rode as far as it will come and **power forward slowly**. This will eventually break it free.
7. To prevent bowsprit damage caution should be used as the anchor reaches the bowsprit. Stop raising the rode when the anchor almost reaches the roller at the bowsprit.  
**INSTRUCT THE CREW TO WATCH THAT THE ANCHOR DOES NOT START SWINGING AND HITTING THE BOW OF THE BOAT.**
8. Lift the anchor over the roller on the bowsprit and position it in the roller.
9. Apply the anchor safety line and take up excess chain with the windlass, **leaving a little slack**.
10. Turn off the windlass toggle switch in the forward stateroom. **BE SURE THIS SWITCH IS TURNED OFF WHEN YOU ARE DONE USING THE WINDLASS to avoid having someone accidentally energize the windlass.**

### ANCHOR LIGHT

When at anchor or tied up to a buoy after sunset, the Coast Guard requires that you display the anchor light. Turn on the breaker labeled "Anchor" at the electrical panel.

## CHECK LIST FOR GETTING UNDERWAY

### GENERAL

1. Brief the crewmembers thoroughly on which procedures they will be responsible for and what their position and role will be when leaving the dock or slip.
2. Check throughout the boat to be sure all doors, windows and hatches are closed, hooked or secured. All items that might tip, slide or bounce are put away.
3. Have your life jackets out or on for the deck crew.
4. Have boat pole out and ready to use.

### ENGINE ROOM - Details on pages 18-21

1. Turn on engine room lights at the electrical panel.
2. Raise galley stairs and secure with hook on stairwell.
3. Check oil levels for both engines. Add oil if needed.
4. Check sea strainers. Remove debris if necessary.
5. Check fuel filters for water or sediment. Remove contaminants if needed and dispose of waste container.
6. When finished, turn off engine room lights and close stairs.
7. Start engines using the step-by-step procedure outlined on pages 20-21.

### ENGINES AT IDLE

1. Check oil pressure gauges. They should read about 50 psi.
2. Check stern at waterline to be sure water is being ejected.
3. Check temperature gauges. After 10 to 15 minutes, they should read about 120°F.
4. Check voltmeter gauges. They should read about 13+.

NOTE: Most people operate almost entirely from the bridge. Your vision is much better from that position and it is therefore easier to handle "Kelli G" from that vantage point. Snap up the center plastic panel in front of the bridge control station to the inside before getting underway. This makes it easier to communicate with your foredeck crew. Zip it back in place when desired.

5. Turn on the VHF radio and set for Channel 16.
6. Turn on the depth sounder at the helm stations.

### LEAVING MOORAGE

1. Unhook from shore power!
2. Remove and stow all but one or two key dock lines. Be sure dinghy lines are properly stowed, dinghy painter removed and hanging on designated hook.

3. Have designated crewmember remove the last dock lines and get aboard when the boat is free. It is often possible to free the last dock lines from on board if they are looped through or around the dock cleats.
4. Remove and secure the boarding ladder if not done previously.
5. Assume the controls and ease out of dock or anchorage. Remember you are working with a 28,000 pound machine that has no brakes! Most marina slips and anchorages should be left at less than idle speed, taking the boat in and out of gear. Always take wind, current and traffic into account before leaving moorages SLOWLY.
6. Put up VHF antennas if needed. These would be in down position if leaving covered moorage.
7. Bring up fenders, and secure docklines. Excess fenders can be stowed on side decks or sun deck. Always attach lines to a railing.
8. Check all lines, especially on the aft deck to be sure they re neatly coiled.
9. Be sure the stern gate is latched and the safety cable is in place. Latch safety cables in place on side decks if not already done.
10. When out of moorage and/or close quarters, telescope down the boat poles and stow in the proper place on the aft deck.
11. Secure any canvas that was unzipped during the procedure.

### SUMMARY OF SAFETY AND CONVENIENCE ISSUES

Much of the following appears in various parts of this operating manual.

1. Please **NO SMOKING** on board "Kelli G." We and our future charterers thank you in advance for this consideration.
2. Don't enter the engine room when the engines are running.
3. Wear soft-soled shoes. Cowboy boots and high heels don't work out very well on boats.
4. Avoid creosote! It can ruin anything it gets on. If you do get any on shoes, clothing, lines, power cords or whatever, get it off as soon as possible with the paint thinner.
5. Keep children in life jackets when outside and underway.
6. Always use the depth sounder and properly scaled chart when cruising, docking or looking for anchorage. The GPS units will assist you in tracking your position, however they are not a substitute for charts.
7. The VHF radios are your only communication device with the Coast Guard and other boats. Do not depend on cell phone for primary communication, if you bring one along. VHF is your most dependable call for help when at sea. FCC regulations require you to monitor Channel 16 when underway to enable you to respond to emergency messages.
8. Store propane for the barbecue in the bridge dash locker or sun deck locker. DO NOT bring propane into the cabin area.
9. Store gas for the dinghy outboard motor in the tank inside the dinghy or on the swimstep. Ensure the tank lid and vent is closed tightly when stowed.
10. Pick your anchorage carefully. Use Chapman's "Piloting" book, nautical charts and tide tables for your best references.

11. Stow gear in the appropriate places. This will aid you greatly in finding what you need, get the inventory done efficiently at checkout time and expedite your departure. It also is a great benefit to the next charter party.
12. Avoid getting fish scales in the galley sink drain. Do your cleaning and scaling on the swimstep. You don't need a plugged sink on your vacation.
13. Use only marine toilet paper in the heads. It is designed to disintegrate almost immediately. Any other type of paper or item will plug the lines. You really don't want this job on your vacation!
14. Keep your speed at idle and below whenever you are in harbors, marinas close quarters or congested areas. This is not only a courtesy. Legally you are responsible for any damage your wake causes.
15. Monitor the marine weather stations. Get current forecasts. Use the weather channels on the VHF radios.
16. Keep the ventilation hatches and windows closed and latched when underway, but do have the overhead hatches cracked open for ventilation at night.
17. Keep all mooring lines and dinghy lines properly coiled and on line hangers, if available, to prevent them from getting hopelessly wrapped around a turning prop.
18. NEVER swim off the swim platform with the engines running.
19. Driving a boat under the influence of alcohol is a felony.

#### **CHECKLIST WHEN LEAVING THE BOAT AT A DOCK OR AT ANCHOR**

1. Ignition keys at helm station in the main salon and not removed from the boat.
2. Check throughout the boat to be sure all doors, windows and hatches are closed, hooked or secured. All items that might tip, slide or bounce are put away. If a vessel leaving a large wake passes while you are gone the boat will, because of wave dynamics, almost always lie in the trough and the subsequent rolling will scramble loose contents.
3. Pick up and clean if necessary any equipment, gear or personal items and stow out of sight.
4. If using electric heaters, turn them off and store them before departure.
5. If using the diesel heating system, switch it off.
6. Cover instrument panel.
7. Pull cabin curtains closed. Zip up and secure canvas.
8. Be sure lines and fenders are deployed properly.
9. Close cabin door tight and lock.

#### **CHECKLIST FOR RETURNING TO THE SQUALICUM MARINA**

1. Pump out holding tank and add deodorizer.
2. Refuel at the fuel dock; fuel both port and starboard tanks.
3. **LOWER ANTENNAS ON THE RADAR ARCH AND BRIDGE BEFORE ENTERING COVERED MOORAGE.** Antennas could be broken or damaged if not in down position.
4. Have dock and spring lines out and ready to be used, boat pole in position and crew ready to perform.
5. Before leaving "Kelli G" at the slip, be sure to stow all gear, utensils, equipment, etc. in their proper place to aid the SAN JUAN YACHTING staff in inventory check-in. This will expedite your departure.
6. Turn off all electronic equipment, electric heaters in staterooms and diesel furnace.

7. Leave ignition keys at the helm station in the main salon. Be sure all DC breakers are turned off at the electrical panel.
8. Brief SAN JUAN YACHTING staff on any problems you may have had, mechanical discrepancies, equipment missing or any cleaning problems they might encounter so that the following charterers can have everything ready at their arrival.

If you have any time left on your charter after reading all this, please go out and enjoy your vacation.  
CONGRATULATIONS ON YOUR DILIGENCE!

RICHARD AND BARBARA GARBUTT, March, 2010