SAFARI

OWNER'S MANUAL

The descriptions and specifications in this manual were in effect at the time of its approval for printing. Safari Motor Coaches reserves the right to change specifications or designs without notice or incurring obligation. This manual includes information on several different model options. Your motorhome may not contain every system described.

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Foreword

To our valued customers:

Congratulations and welcome to the Safari family of motorhome owners. You have made a substantial investment of time and money in selecting your coach. Now let's take the time to get to know it a little better. It could save you time as well as money.

Although we are quite sure this manual will never make the *Book of the Month Club,* (well, it's not exactly a pageburner), it has been designed to offer you a comprehensive overview of your motorhome's operational systems. By familiarizing yourself with this manual, your Owner's Supplement, and the other manuals that came with your coach; hopefully you'll be able to breeze through any minor mishaps.

This manual is not designed to be a service manual, nor should it be used as such. If you require service or need warranty assistance, please call Safari Warranty & Service or the number provided by the component manufacturer. And remember...before calling Warranty, it's always a good idea to write down the last five numbers of your (VIN) Vehicle Identification Number. This is located on a plaque next to the entry door on the exterior of the coach. Also note your coach's mileage. This will speed the process of locating your records.

Thank you - and we hope you enjoy your new Safari motorhome!

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CHAPTER 1 – VEHICLE OPERATION

OUTLINE

Your Safari coach has been designed to enhance your living and driving pleasure. The front cabin heating and air conditioning are state-of-the-art in climate comfort. Driver and passenger seating is comfortable, supports the back, and helps combat driving fatigue

WARNING: This manual is meant for reference only. Become familiar with all procedures, cautions and warnings given in the various manufacturers' manuals provided before operating your motorhome.

WARNING: Make sure there is adequate ventilation when running your coach engine or heaters.

VEHICLE OPERATION

When starting the engine, first make sure the parking brake is on and the headlights are off. Put the transmission in NEUTRAL and turn the key to the ON position. The Check Engine and Engine Preheat lights will activate. Wait until the Engine Preheat light shuts off before starting the engine. Under normal conditions, this should only take about five seconds. It will take longer when you are in colder climates. At this time, it would be a good practice to turn off the ignition and repeat this cycle before actually starting the coach.

WARNING: **When first starting your coach, you must wait until the Engine Preheat light shuts off. Do not crank the starter for more than thirty seconds at a time. If the engine fails to start, wait before cranking again.**

Check the engine oil pressure soon after starting. You should let the engine idle for three to five minutes before moving out, generally, not any longer. Idling for more than ten minutes can lead to improper fuel consumption and may cause problems with the efficiency of the engine.

NOTE: **Minimize the load on the chassis batteries by turning off all unnecessary lights and accessories before starting your coach.**

In cold weather the engine may be more difficult to start. Oil becomes thicker, making the engine crank more slowly. If you plan on traveling in cold areas (consistently below 20 degrees Fahrenheit), use oil that is recommended for colder climates.

If the chassis batteries fail to provide enough power to crank the engine fast enough, press the boost switch to connect to the house batteries for added power.

Carefully monitor all gauges while running the engine. The normal operating ranges are discussed in this section and in the engine and chassis manuals. Before shutting the engine down, allow it to idle for a few minutes to cool the combustion chamber, bearings, turbo charger and crankshaft.

WARNING: Monitor your gauges closely while driving. If any readings are not within their normal operating range, take appropriate action immediately.

Main Dashboard

The Safari dash is designed to be easy to read and easy to use. All important gauges are placed directly in front of the driver and arranged for comfortable viewing. The controls are arranged around the central instrument cluster and are well marked for quick identification. Remember, your motorhome may not be equipped with all of the switches or controls listed in this section. The descriptions here are general overviews and could differ from coach to coach. For information particular to your motorhome, please see the Owner's Supplement provided in your warranty package.

NOTE: **See your Owner's Supplement for information on your particular coach.**

Warning Lights

Warning lights will activate under certain conditions to warn you of potential problems. They include: Check Engine, Park Brake, Do Not Shift, Intake Manifold Air Heater, and Brake Service. Also, to the extreme left and right, directional turn arrows are included in this cluster.

WARNING: **On the Zanzibar, Sahara, Serengeti, Continental and Panther, if the Check Engine light activates while driving, the engine will automatically derate (operate at approximately half power with a maximum speed of 30 mph). If this happens, turn off the CRUISE CONTROL and press the RESUME/SET switch. The Check Engine light will then flash a two-digit diagnostics code that will be needed for repair if engine problems are detected. Do not shut off your engine before recording this code. (See engine manual for code details.)**

Engine Fuel Level Gauge

The fuel reading will vary when cornering, accelerating, braking, and climbing or descending hills. Depending upon which coach you've purchased, the fuel tank has a fill capacity of between 55-112 gallons.

Transmission Temperature

The transmission should normally operate between 140 and 250 degrees Fahrenheit.

WARNING: If the transmission temperature reaches 290 degrees, stop the vehicle, shift into NEUTRAL, and run the engine at 1200 rpm for two minutes or more. The temperature should drop to its normal range. If problems persist, check the transmission oil level or consult an authorized service center.

SilverLeaf VMS II

The SilverLeaf VMSII's modern diagnostics allow you to monitor your coach's overall performance. Its advanced programming and user-friendly interface track fuel economy, complete trip information and engine, transmission, and chassis maintenance. VMSII combines features such as time, alarm, and calendar functions with an innovative anti-theft device. Read the manufacturer's information included in your warranty packet for operation instructions.

In-Dash Radio

The dash radio in your coach operates much the same as the radio in your automobile. See your radio manufacturer's manual for detailed operating instructions.

Home Stereo Power Switch

This switch connects the residential stereo amplifier to the 120 VDC system..

Door Locks (Continental & Panther)

Press this switch to lock or unlock all outside bay door locks except the LP gas and Battery bays.

Engine Water Temperature

The normal operating temperature for the engine is 190 to 215 degrees Fahrenheit. Overheating can occur because of insufficient coolant or a problem in the cooling system. It can also occur in hot weather with uphill, slow or stop-and-go driving.

WARNING: Do not operate the engine over 230 degrees. If the temperature reading exceeds this level, pull over promptly and allow the engine to cool. Extended or frequent operation at this temperature will void your engine warranty.

Speedometer/Odometer/Tripometer

The speedometer indicates the forward speed of the vehicle in miles per hour. (For coaches sold in Canada, the gauge is metered in kilometers as well as miles.) The odometer tracks the total miles the coach has traveled. Before each trip, you may set the tripometer to zero. The gauge will then record the distance, in miles, that the coach has traveled.

Tachometer

The tachometer displays the engine rpm (revolutions per minute). The reading must be multiplied by 100. The engine should not be run at less than 1000 rpm for extended periods of time.

Ignition

Turn to start the engine and use accessory power. See chassis manual for details.

Battery Boost

The battery boost switch can be used to enlist additional power from the chassis batteries for extra DC power when needed in starting the engine. (See the Electrical section description for more detail.)

Air Pressure Gauge

The needle on the air pressure gauge shows the pressure in the chassis air system. An on-board air pump creates air pressure in the chassis system. The chassis air bags automatically level the coach while driving. The normal operating range of air pressure should read between 90 and 110 PSI.

Air Dump

Push the Air Dump switch to release all air from the chassis air bag system. This is important to reduce wear on the air bags when storing or parking your coach for longer periods of time. It also shortens the length the jacks will have to travel to level your coach.

WARNING:	**Never press the Air Dump switch when the coach is moving.**

Dash Fan Switches

These switches control the cabin circulation fans located on the dash at the center point of the windshield. The switches have two speeds. The first stop is low and the second stop is high speed.

Headlight/Parking Light/Dimmer Switch

Turn the parking lights on by pulling the knob to the first stop. Turn the headlights on by pulling the knob out to the furthest extension. Turn the knob to the left or right to adjust the console dimmer lights brightness level to your comfort.

Entry Step Closeout (Serengeti, Continental, and Panther)

This switch activates a power slide out floor to cover the front-entry step well for passenger comfort while traveling. This closeout feature was designed to operate with an independent air cylinder that runs off the same compressor as the air horns. This feature is optional in the Sahara.

Driving Lights

The driving lights are a separate unit from the headlights and can be turned on or off independently of them. These lights are typically used when driving conditions do not require headlights, such as an overcast day, where using the lights on the coach will increase your safety by allowing other drivers to more easily see the coach from a distance.

Dash Heat and A/C Controls

The cabin heater and air conditioning controls operate similarly to those in most automobiles. The left knob controls fan speed, the center controls amount of heat or cooling and the right controls air flow. Please refer to operating instructions included in your Owner's Supplement.

Evans Tempcon Control (Panther & Continental)

The Evans Tempcon dash heater/air conditioning unit's controls operate similarly to those found in luxury automobiles. Automatic temperature control allows you to preset the controls to a desired temperature that is automatically maintained by the system. In addition to fully automatic operation, outside air temperature can be momentarily displayed, along with ice warnings when the temperature is within 6 degrees Fahrenheit or 4 degrees Celsius of the freezing point. See the manufacturer's instructions in your warranty packet for detailed operating instructions.

Oil Pressure Gauge

Low or high oil pressure indicates possible problems with the lubrication of the engine. While idling, the gauge should read about 10 PSI and while driving it should rise to about 35 PSI. When the engine is cold, the pressure will be considerably higher due to the increased viscosity (thickness) of the oil.

WARNING: If the oil pressure drops significantly below 35 PSI while driving or 10 PSI while idling, stop the engine immediately and check the oil level.

DC Voltmeter Gauge

This gauge displays the performance of the 12 VDC chassis system, especially the batteries and alternator. With the engine off and the key switch on, it should read approximately 12 volts. With the engine running , it should be approximately 13 volts.

Parking Brake

This handle is located below the main dash. Pull out the handle to set the parking brake. Release the parking brake by pushing in the handle. In coaches equipped with an air ride suspension, allow air pressure in the chassis air bag system to build to at least 90 PSI before releasing the brake.

WARNING: Do not attempt to drive or move the coach with the parking brake set.

Side Console

Transmission Controls

The Allison World Transmission in your coach is a highly sophisticated, electronically controlled automatic transmission. A push button panel to the left of the driver's seat operates it. It operates like a typical automatic transmission, utilizing a push button control. However, unlike most automatic transmissions, this unit contains sophisticated electronics that evaluate every situation and actually "learn" the most efficient shifting pattern to compliment your driving style.

The controls consist of seven selectors located on the Side Console Panel, to the left of the driver.

1. Top - GEAR INDICATOR WINDOW.
2. Top Left - REVERSE.
3. Top Right - MODE INDICATOR (standard shift or economy shift.)
4. Middle Left - NEUTRAL.
5. Middle Right - DOWNSHIFT.
6. Bottom Left - DRIVE.
7. Bottom Right - UPSHIFT.

For normal driving, depress the button that coincides with the correct gear. Pressing the "N" puts it in NEUTRAL, "R" in REVERSE, and "D" in DRIVE. The transmission will not shift into REVERSE if the coach is moving forward. The arrows allow you to upshift or downshift while in DRIVE. The transmission automatically prevents shifts that might be damaging to the transmission.

The panel contains status lights to indicate the presence of a problem. If any of these lights are displayed, consult the chassis manual or an authorized service center immediately. The safeguards in the system may prevent certain shifts from occurring, and it will attempt to protect the transmission from further damage or problems. For detailed instructions refer to your Allison manual.

Cruise Power, Set, and Resume Switches

The CRUISE CONTROL POWER, SET and RESUME switches are to be used in operating the coach's CRUISE CONTROL. To engage the CRUISE CONTROL, follow the steps below:

1. Turn on CRUISE POWER switch.
2. When you are at the speed you wish to drive, push the CRUISE SET button.
3. The CRUISE will disengage when you apply the brakes. To return to cruising speed, press the RESUME switch.
4. If you wish to increase cruising speed while driving, press the RESUME switch and the coach will increase speed. If you wish to decelerate, press the brake pedal lightly to disengage the CRUISE CONTROL and repeat steps one and two.

NOTE: **CRUISE CONTROL will not operate while your EXHAUST BRAKE switch is on.**

FAST IDLE FEATURE

The CRUISE POWER and RESUME switches can also be used to allow the coach to idle faster after starting. This is useful to quickly warm up the engine during cold weather starts. To use this feature, start the coach and put the transmission in NEUTRAL. Press the CRUISE POWER switch to engage the fast idle. Press the RESUME switch and hold until the desired idle speed is reached. The desired idle speed can also be reached by pressing the RESUME button repeatedly to increase the speed.

Please refer to your Caterpillar Operations and Maintenance manual for full instructions on how to use the CRUISE CONTROL.

Washer/Wiper Controls

Rotate the knob clockwise to turn on windshield wipers. There are three stops. The first is intermittent, the second is slow/continuous and the third is fast/continuous. Press the knob in for washer fluid.

Mirror Controls

One control operates both side-view mirrors. The selector in the center of the knob determines which mirror is being adjusted. Slide the lever to either the LEFT or RIGHT position. Arrows are located around the selector that point in which direction to adjust the mirror: up, down, left or right.

PAC Brake or Jacobs Two-Stage Exhaust Brake Switch

The exhaust brake switch can be used to increase stopping efficiency and save the primary brakes from overuse. Exhaust brakes should be used only as a supplement to the primary brakes on your coach. Please refer to the manufacturer's manual for details on how to use the exhaust brakes.

Mirrors Heaters

The remote mirrors will be heated when this switch is turned on. Use this feature when mirrors are frosted or fogged during cold weather conditions.

Docking Lights

Some coaches are equipped with docking lights -- large lights located on either side, near the top and center of the exterior. Push this switch to activate them. There is a selector switch located above the entry door that allows you to select the PS, DS, or both docking lights.

Rear Halogen Lights

One some coaches two halogen lights are mounted on the back end of the coach to provide extra light while parking.

Levelers Control Pad

Please refer to the operating instructions in the Levelers section of this chapter.

Courtesy Lights

Push this switch to activate exterior lights along the caps of the coach. This is useful to alert passing motorists when they have safe clearance to return into the lane when passing on two-lane highways.

Rear Camera & Monitor

The television monitor and stationary rear-view camera are installed at the factory to be ready to use. The camera is mounted on the back of the coach to view a portion of the rear of the coach and the area behind. This is a very useful feature when backing up, checking a tow car and while driving to make sure no vehicles are directly behind the coach.

The television monitor is located in a concealed area under the TV cabinet above the driver. Simply turn on the power and press the spring-loaded tab. The monitor will pivot down from the cabinet for viewing. If necessary adjust the brightness and contrast. *See the instruction manual for complete information.*

Other Controls

Electric Step

WARNING: Always make sure the step is retracted before moving the coach.

The electric step is controlled by two methods: the activation of the ignition switch and by an ON/OFF switch near the doorway. The ON/OFF switch controls the 12 VDC power to the step. If the switch is on, then the step will extend and retract when the door is opened and closed. If the switch is off, the step will not move. Therefore, to lock the step in its extended position when parked, turn the switch on, open the door, and allow the step to extend, then turn off the switch.

The ignition switch overrides the ON/OFF switch. When the ignition is switched to the ON position and the door is opened the step will extend. It will automatically retract when the door is closed.

Some coaches are equipped with other safety features that help to prevent damage to the step or motor. The step mechanism does require regular lubrication and it must be kept clean. *Refer to the manufacturer's manual for details on step operation and maintenance.*

Inverter Remote Panel

This panel, located on the bedroom wall, has a remote starter for the inverter and displays inverter functions. See the Inverter section of the Electrical chapter for details of operation.

Heater Craft

This switch controls the airflow into the coach. The fans can be set to HIGH for faster heating of the coach, LOW for normal heating, or OFF when minimal or no heating is required. There are control switches located on the dining room and bedroom walls.

Levelers

Safari has installed a three-point hydraulic leveling system. This system is designed to be easy to operate, quick, reliable, and, most importantly, stable. The levelers use power provided by a 12 VDC pump. *Refer to your operations manual for operating details, troubleshooting and maintenance procedures before operating the leveling system on your coach. The following steps should be used only as a guideline after you are familiar with the procedure.*

NOTE: **The front tires should always be blocked when leveling the coach.**

NOTE: **The leveling system should be operated at least once a month or each trip to keep the system in working condition.**

NOTE: **If leveling on asphalt or soft ground, use a pad under the jack to increase stability.**

WARNING: **Do not attempt to use the jacks on unstable ground. Do not stack objects under the jacks except for wood blocks as mentioned in Step 2 of the leveling procedure. Do not raise the tires off of the ground. If the ground is too uneven for the jacks to level the coach, the coach should be moved to a different location.**

WARNING: DO NOT use the leveling system for changing tires or working under the vehicle. There is a possibility that the vehicle may move and cause injury or damage if not used properly. Use of the leveling system for any purpose other than intended may void the warranty.

WARNING: Never use the jacks to lift the vehicle off the ground. Do not allow anybody near the jacks or under the coach when operating the leveling system.

WARNING: If you are planning to use the slide out, DO NOT level the coach prior to fully extending the slide out unit.

Extending the system to level your coach.	
Step 1.	Block the front tires. Make sure your transmission is in PARK and the parking brake is set. Turn the ignition to the ACCESSORY position.
Step 2.	Check the jacks to ensure that they have a clear path to the ground. If leveling on asphalt or soft ground, place pads under the jacks. Pads should be made of wood and at least 2x8x8 inches in size.
Step 3.	Extend the jacks by pressing the rocker switches to EXTEND. Always lower the rear jacks first. While the jacks are extending, a red light will flash and a beeping alarm will sound. This will also occur if the ignition key is turned to the ON position while the jacks are extended.
Step 4.	If you plan to use the slide out unit, it is important to extend it fully before leveling the coach. Refer to the Slide Out chapter of the Safari Owner's manual for detailed instructions.
Step 6.	Press the leveling system switch to the ON position. The green light will indicate the system is ready.
Step 7	Turn off the leveling system switch and the ignition. All lights on the leveling panel should be off and the alarm should no longer sound.

NOTE: In wet, muddy, or icy weather the jacks can become covered with debris. This may cause the leveling system to function improperly. To eliminate this problem, periodically check each unit and clean any accumulation that may hinder proper operation.

Retracting the leveling system.	
Step 1.	With the slide out still extended, turn on the coach ignition and leveling system switches. Clean dirt off of the jack cylinders.
Step 2.	While it is possible to use the RETRACT-ALL switch and retract all jacks at one time, Safari recommends retracting the jacks using the individual jack switches. First, retract the front jack and then retract the two rear jacks simultaneously by pressing the rocker switches to RETRACT. This method will provide the smoothest possible retraction. The flashing red light and alarm will shut off when the jacks are within six inches of full retraction.
Step 3	Set the leveling system control switch to the OFF position.
Step 4.	Remove tire blocks and jack pads. Visually inspect the jacks to be sure they are fully retracted and then, following the directions in the Slide Out chapter of this manual, retract the slide out before moving your coach.

WARNING: Visually check to make sure all jacks are fully retracted. Do not rely on the warning light and alarm. Moving the coach with the leveling jacks extended can cause severe damage to the jacks and/or the coach.

WARNING: Never move the coach while the slide out unit is extended. This will cause severe damage to the slide out mechanism's alignment.

Coach Monitor Panel

The Coach Monitor Panel is located in the area above the dining table (front-entry) or above the entrance (mid-entry) in your Safari coach. This panel contains scan and select switches that allow you to remotely monitor battery levels, LP gas, water and holding tank levels. In the same area there are also switches to operate the water pump, generator and Hurricane system. In the same general vicinity, you will see switches for the slide out, porch light, entry step, electric awning and the DS and PS docking lights selector. (In front-entry models, some of these switches may be located over the door.)

A description of some of the most common switches and their functions follows:

LP Gas, Water and Battery Monitor Panel

This panel monitors the levels of LP Gas, battery power and fresh, black and grey water tanks. Press the ON switch to illuminate the panel. The panel displays either EMPTY, 1/3 FULL, 2/3 FULL or FULL for the LP gas, fresh water, and holding tanks. For the battery levels, the panel displays whether the house batteries are WEAK, FAIR, GOOD or CHG (charged).

The panel also has a remote starting switch for the water pump. Push this switch upward and the pump will automatically start itself.

See the LP Gas, Electrical, Plumbing and Wastewater chapters for details on readings.

Generator Hour Meter

This meter displays the total hourly usage of the generator.

Generator Stop/Start Switch

Use this switch to start and stop the generator. Depress and hold until the generator starts. To stop the generator, press the lower portion of the switch until the motor comes to a complete halt.

NOTE: **If the generator does not start within five seconds, release the button and try again. Continuous cranking can damage the generator starter.**

Hurricane Heat and Power

The Hurricane panel contains several switches. Use the system control toggle switch to turn on the system. You can adjust the Zone 1 heat to either the low or high setting. There is also a switch for the engine heat. See the Hurricane Heating section of this manual or the manufacturer's instructions included in the warranty pack for details of operation.

Docking Light Selector

There are two switches labeled PS and DS located near the entry door. After turning on the docking light switch, on the side panel in the cabin, use these switches to activate either the DS docking light or the PS docking light.

Slide Out Switch

This switch is located near the Coach Monitor Panel. Please familiarize yourself with the instructions for use of the slide out unit before operating this switch.

Electric Awning Control (Optional)

These buttons will extend or retract your patio awning. Push the down arrow button to extend the awning and the up arrow button to retract it. Push the STOP button when the awning is extended or retracted to the desired position. The awning will stop automatically when fully extended or retracted. See the Awnings section of the Appliances chapter of this manual for details of operation and maintenance.

CHAPTER 2 – TRAVELING

OUTLINE

To get full enjoyment of your motorhome, careful preparation is necessary. Good planning and preparation will lead to less potential trouble while travelling and when you reach your destination.

This chapter gives some general guidelines for traveling in your coach. It includes checklists to help you avoid forgetting those important details, tips for getting the most from your equipment, and other helpful ideas. The information is very general, for more specific descriptions of your coach and its systems, please read the appropriate sections elsewhere in the Safari and the manufacturer's manuals.

TRIP PREPARATION

Planning your vacation should begin long before you leave home. Long-term trips usually require more preparation. Planning means more than just packing.....there are many things to organize at home and in your coach.

Leaving Home

Before you leave your home for a trip in your coach, make sure that your home is prepared for your absence. You will want to be confident that your belongings will be cared for and that your house is protected against dangers such as burglary and fire.

The following checklist highlights many of the most important precautions.

- Arrange for deliveries, such as the newspaper, to be discontinued.
- Ask the post office to hold your mail.
- Arrange care for your animals and plants.
- Have the house periodically checked.
- Notify the police that you will be absent.
- Inspect your house for fire hazards.
- Burglar-proof your home as effectively as possible.
- Place valuables and important papers in a safe deposit box or fireproof safe.
- Make arrangements for your lawn to be mowed, snow shoveled and other outside maintenance taken care of.
- Always make sure that someone knows where you are and that you check in regularly.

For long-term travel you may wish to arrange for an efficient mail drop service. Organizations such as the FMCA (Family Motor Coaching Association) provide this service for a reasonable fee.

Coach Preparation

The following list highlights items that need to be checked before you travel. By doing so before you leave, you have a better chance of avoiding problems during the trip. For chassis maintenance details, please refer to the chassis manufacturer's manual and the appropriate chapter in this manual.

Coach items to check *before* traveling:

- Check the battery fluid levels - both house and chassis batteries. If low, attach a shore line to provide 120 VAC power to the coach and recharge. (See Electrical System chapter for details.)
- Check tires for cuts, punctures, weather damage or cracks in the sidewall and tread areas.
- Check for foreign objects between dual tires.
- Check the tire pressures.
- Ensure that all lug nuts are tight. This check should be performed by an approved repair facility.
- Check all fluid levels on the chassis and generator. (See chassis or generator manual for details.)
- If you have a diesel engine, clean the fuel/water separator.
- Make sure that all scheduled maintenance for your chassis has been performed.
- Check that all lights, including the driving lights, are operational.
- Adjust the mirrors.
- Check the windshield washer fluid reservoir and make sure wiper blades are clean, grease-free, and that the rubber is intact.
- Fill the water tank and make sure the waste tanks are empty. Test the pump.
- Fill the LP Gas tank. Test the appliances before leaving home.
- Test the generator.
- Make sure you have the following items in your coach: sewer connection, water fill hose, shore line power cable, and awning rod (unless you have armless awnings).
- Fill the fuel tank if necessary.
- In addition to these items, read the Before Leaving section at the end of this chapter for an additional list of items to check before driving your coach.

Storing Cargo

It is important to remember that regardless of how large your coach is, there is a limit to its storage capacity. You may want to pack as lightly as possible to allow for additional storage during your trip. It is often easier to buy things at your destination rather than to have to discard items to make room for other things.

While packing your coach, keep two things in mind: turning and braking. For optimum handling, the load will need to be evenly distributed side-to-side and front-to-back.

When loading your coach, please follow these guidelines:

- Be sure to distribute the cargo weight evenly from side-to-side and front to back. This practice will prevent both handling problems and uneven stress on the components throughout the life of the coach.
- Heavy items should be stored near the rear axle, lighter items stored toward the front.
- In order to maintain a low center of gravity and to prevent the coach from being top heavy, store light items in the overhead cabinets and heavier items near the floor. This practice will also reduce sway
- Secure loose items to prevent weight shifting that could effect the balance of your vehicle. Make sure all items are fastened down - safe from quick turns, bumps, and sudden stops.

Helpful Hint:

- Multi-purpose items, versatile clothing and periodic removal of unused cargo enables you to store more of what you usually use.

WARNING: Towing vehicles with a hitch weight in excess of 5000 lbs. should be avoided. It will place undue stress on components and cause unusual handling characteristics in your coach. It could also void your warranty. Refer to your chassis manual to find its towing capacity. If there are any questions, call a factory technician.

AT YOUR DESTINATION

Once you have arrived, it is time to enjoy the comfort your coach can provide. Local conditions, the length of time you plan to stay and type of campground determine which of the following items apply to you. *(See the appropriate chapter of this manual or manufacturer's manual for details.)*

- *Block the tires and level the coach using the hydraulic levelers.*
- *Make sure the LP Gas flow valves are open and ready for use.*
- *If in a full-service campground, hook up the shore line, sewer connection, water line, and if available, the TV cable and phone extension.*
- *Extend the awnings, especially if hot and sunny.*

Conserving Coach Resources

You can enjoy all the amenities your coach provides while camping. At the same time, you should monitor the limited resources your coach can carry. Check the levels of your water, waste tanks, LP Gas, and battery charge on a regular basis, and act accordingly.

Power

If you have a shore line, electricity will not be a concern for you, but LP Gas or diesel still may be an issue. Since the generator is either powered by LP gas or diesel, the most effective way to conserve fuel is to avoid running the generator. This requires the careful management of your 120 VAC appliances.

LP Gas Conservation

- Keep the refrigerator in automatic mode to take advantage of the 120 VAC power.
- Use the micro/convection oven rather than the gas stove whenever you are able.
- Limit use of large appliances.
- Utilize the inverter to use house batteries for a portion of your 120 VAC power.

Water Management

If you do not have a water connection you must be much more careful with your resource. Most water is used to bathe, clean items and flush waste. Appliances such as the dishwasher and washing machine also use significant amounts of water. You can conserve water by relying less on these appliances and practicing good water conservation.

The following are some ways you can conserve water.

- *Use only a small amount of water in the toilet bowl unless solid waste must be flushed.*
- *The toilet valve should not be left open for more than a moment.*
- *When showering or washing, run the water only when soaping or rinsing off.*

The Plumbing chapter details use of the water system.

Sewer

If you use your water supply wisely, it will also maximize the usage of your waste water holding tanks. Periodically check the holding tank levels and empty them only when there is a significant amount of waste, even if you have a sewer connection.

Before Leaving

Before you drive your coach after camping, there are certain procedures that you must be sure of. These are summarized in this list:

- Make sure that all awnings are retracted and locked - both on the arms and on the roller.

- Make sure that all levelers are completely retracted. Make sure all tires are unblocked.
- Make sure that the electric step is retracted.
- Unhook and stow the shore line, sewer and water lines, TV hookup, and any other connections.
- Check the refrigerator, all cupboard and appliance doors, and make sure they are latched.
- Inspect the coach and storage bays for items that are not secured or stable.
- If you have a roof rack, inspect the roof for items that are not secure.
- Make sure the door is secure.
- Make sure the roof TV antenna is cranked down.
- Follow the checklist in the Coach Preparation section of this chapter.

CHAPTER 3 – HEATING & COOLING

OUTLINE

Your coach contains several systems to maintain a comfortable living temperature, including powerful furnace and air conditioning units. While these units will maintain your comfort in most climates, do not underestimate the importance of the simplest systems - windows, vents, and fans. Proper circulation is crucial to maintaining a comfortable environment.

Temperature is not the only factor that affects your comfort. Humidity is just as important. In fact, humidity causes condensation and can damage your coach. Bathing, cooking, and even breathing increase the moisture in the atmosphere. That moisture must be released through windows and vents. Therefore, even when you are running the furnace or air conditioning, you should keep some vents or windows open. Use the fans when cooking, bathing or any time the humidity starts to rise.

COACH HEATING

Safari Motor Coaches installs two types of furnaces - LP gas or hydronic. The following is general information on both types of furnaces. For specific information related to the appliance that is installed in your coach, please read the manufacturer's manual before operating. Failure to follow the instructions may result in damage to the unit.

LP Gas Furnaces

This type of furnace utilizes LP gas to generate heat to warm your coach. A fan distributes the heat. The air is drawn into the furnace, heated, then ducted to all parts of the coach. Thermostats control room temperature.

In most coaches, two thermostats control the furnace; one in the living room and one in the bedroom. Turn the furnace switch on the thermostat to the ON position. Set the thermostat to the desired temperature. The fan will come on and the burner should light within thirty seconds. If the burner does not ignite, repeat the start up process. Occasionally, the furnace may not start on the first try. There is often air trapped in the gas line that will be removed through the start up process.

After the initial start up, the furnace will operate automatically. You can control the temperature using the thermostat. To shut the furnace off, set the thermostat to the OFF position. After about two minutes the fan will stop. Keep the furnace compartment clean at all times. Periodically check the interior and exterior vents. Do not allow them to become clogged with debris. Avoid spraying water into the vents when washing the vehicle. Do not obstruct the vented furnace access door.

Make sure you are familiar with the safety guidelines for all LP gas appliances before using the furnace. *Read through the owner's manual before operating your furnace.*

Hurricane Heating

The Hurricane hydronic heating system heats a water/antifreeze mixture and pumps it through hoses to heat exchangers that are placed throughout the coach. Hydronic systems are comprised of a diesel-fired furnace, electric heating elements and a heated water reservoir. These systems will also utilize heat generated by the engine as you are traveling.

The Hurricane heating system can be set to heat the interior of the coach and water tank, or the water tank only. There are two brass valves located next to the Hurricane system, usually found in the DS rear compartment of the outside of your coach. If both valves are turned toward the passenger side or in the WINTER position, the system is set to heat both water tank and coach. If both valves are turned toward the back or in the SUMMER position, the system will heat only the water tank. *Both valves must always be positioned in a parallel direction, otherwise the system will overheat.*

The Hurricane system has at least four heat exchangers, one each in the bedroom, bathroom, galley and front living area. (In all 37 ft. and 40 ft. models there is an additional heat exchanger in the dinette area and an additional fan control switch in the bathroom.) The fan control switches are near the Coach Monitor Panel and on the bedroom wall. Fan speeds can be set to HIGH, LOW or OFF. Use the HIGH setting to quickly heat your coach when the system is already warmed up. Use the LOW setting for most coach heating purposes after the desired temperature has already been attained in the coach. Use the OFF setting when heat is not needed.

WARNING: Always set the Hurricane control valves in a parallel position: either for summer or winter operation. Any other arrangement will cause the system to overheat and could cause serious damage and possible injury.

Table 1. Heating your coach with the Hurricane System.	
Step 1.	Turn the main remote switch to the ON position. It is located near the Coach Monitor Panel.
Step 2.	Set the thermostats slightly above the desired room temperature. Turn on the fans in the area you wish to heat. For the living area/galley, the fan switch and thermostat is on the cabinet in front of the refrigerator. In the bathroom/bedroom area, they are located on the bedroom wall. Heated air should enter the coach through the air vents. To heat the coach faster, turn the fans to the HIGH setting. Turn the fans to the LOW setting and reset thermostats to the desired temperature when the room is comfortable.
NOTE:	If your coach is not being heated at this point, check the Hurricane control box for the following: • Make sure the thermostat switch is set to FURNACE. • The control valves next to the control box should be in the WINTER position. This is done by turning both valves in a vertical or up-and-down direction. If the valves are in the SUMMER or horizontal direction, only the hot water tank will be heated by the Hurricane system. The system will take approximately fifteen minutes to heat. Turn the fans off to help the system more quickly heat to its normal operating temperature of 175-200 degrees Fahrenheit. • Make sure the master switch on the Hurricane control unit is in the ON position. Under normal circumstances this switch should always be ON and should not be changed. • Check to be sure there is diesel fuel in the tank. • Check the battery level on the Coach Monitor Panel to be sure there is sufficient charge. • On the Panther and Continental, check the switch in the Hurricane bay marked WATER HEATER and PRESSURE WASHER to make sure WATER HEATER is selected.

To stop the Hurricane heating system, turn the remote control switch to the OFF position. The heater will automatically shut itself down after completing a purge cycle.

WARNING: Do not disconnect the battery or shut off power to the Hurricane system while it is running. This will cause damage to the unit and void the manufacturer's warranty.

Hydronic units also provide hot water for galley and bath fixtures. A separate system is used so that the water/antifreeze mixture and the tap water are never intermixed. See the Plumbing section for more information on heating water.

When the Hurricane system is operating normally, the green light on the remote panel will be on. If the red light is on, it indicates a problem with the system. Periodic maintenance is necessary to keep the Hurricane system at peak operating efficiency. *Please consult your Hurricane Operation and Maintenance Guide for detailed information on troubleshooting or maintenance.*

Engine Preheat for Hurricane Heating System

The engine preheat switch is used to connect the Hurricane Hydronic Heating system tot he engine coolant system. This allows the Hurricane sytem to heat the engine before it is running. This feature is useful for cold weather starts. To engage the engine preheat feature, depress the switch on the side console. Allow approximately one to two hours to complete the process.

Water Heater

If your coach does not have a Hurricane system, it will be equipped with a water heater that uses LP gas to provide the energy to heat your water. An LP unit does not use a pilot light. Like the furnace, it has an electronic ignition, which uses a small amount of 12 VDC power.

Before starting the water heater on either source, fill the unit completely with water and open the hot water tap in any location and allow the water to flow freely for a few minutes to remove any trapped air. The LP Gas unit has two controls - an ON/OFF SWITCH and a RESET light. The switch is located near the Coach Monitor Panel. The heater has an internal thermostat that is not adjustable.

It also has a safety cutoff. If the heat in the unit exceeds 180 degrees, it automatically shuts off, and will not start again until it has cooled down and the RESET button is pressed.

> WARNING: **The heater must never be started without a full tank of water. Make sure the water pump is on and no longer pumping before starting the heater.**

Starting the tank is nearly automatic. After turning the switch on, there will be a 15-second purging cycle, after which the burner should light. The heater will automatically try three times before quitting. If the red light appears, the unit did not ignite. If it does not start after approximately one minute, turn the heater off and then on again. Several attempts may be necessary if there is air in the gas lines.

If water is left in the hot water heater during periods of storage, hydrogen gases may build-up in the tank. It is important to relieve the gases before use. To do this, open a hot water faucet and allow the water to run long enough to clear the air out of the tank. Be cautious when doing this, hydrogen is explosive - extinguish all open flames before beginning this process. Also, do not use the washer/dryer before clearing the tank, if hydrogen gas builds up in the drum, it can cause an explosion.

WARNING: If water has been in the hot water heater during periods of storage, run the hot water to clear the tank of a possible build-up of hydrogen gas. This gas can cause an explosion if it comes in contact with a spark.

Please refer to the manufacturer's manual for operating details, and maintenance and troubleshooting instructions.

COACH COOLING SYSTEMS

Most Safari coaches (with the exception of the Trek, it has one a/c unit) are equipped with front and rear air conditioning units and attic fans that will keep you comfortable in climates as varied as Death Valley National Park in California or Everglades National Park in Florida. The following sections explain how to use these systems to their maximum efficiency.

Roof Air Conditioning

The air conditioning system is 120 VAC powered and thermostatically controlled. In addition to its cooling power, you can also use it as a forceful circulation fan. The airflow is ducted through registers on the ceiling.

The system requires little maintenance. Two filters protect the cooling coils from debris and should be changed regularly. To change the filters, remove the shroud on the bottom of the intake vents, insert the new filters and replace the shroud. Do not run the unit without filters. Check the manufacturer's manual for maintenance details and specifications.

NOTE: **If the air conditioning units freeze outside due to colder temperatures, do not run the air conditioning until the unit has thawed out.**

Attic Fan

One of the most overlooked features in your coach is also one of the most important for keeping it comfortable. Powered by the 12 VDC house batteries, the attic fan is essential for controlling temperature, humidity and odors. Properly used, it can reduce your reliance on heating and air conditioning and save considerable energy in the process.

You should always run the attic fan while cooking, bathing, or sleeping to reduce humidity. It will also assist in exhausting odors from the coach. It should be run while the furnace is on to control condensation.

The fan uses much less power than the air conditioner and should be used to cool the coach. In addition, it can boost the effectiveness of your A/C unit by removing warm air from the ceiling.

Warning:	**You should also use the attic fan when heating your coach in cold weather. The coach is likely to be closed up, causing moisture to build up. Moisture and high humidity can damage the wood interior and furniture in the coach. As a result, it is very important to keep the humidity level low.**

Dash Air Conditioning & Heater

The dash of your motorhome contains an automobile-style heater and air conditioning unit. This is designed to keep the front cab area comfortable while driving, without using the main appliances. These units are intended to reduce the reliance on the main appliances, and to utilize the extra heat and power your engine produces. The system is not intended to heat or cool the living areas.

Evans Tempcon Dash Heater/AC (With Auto Temp Control)

Featured in the Panther and the Continental, this powerful in-dash system boasts automatic temperature control for cabin comfort. (This system is not intended for use in heating or cooling the entire motorhome.) Pre-set controls allow the system to automatically modulate fan speed and temperature. In addition to fully automatic operation, the system is capable of momentarily displaying the outside air temperature without affecting system operations. For more information, consult the manufacturer's manual included in your warranty packet.

CHAPTER 4 – SLIDE OUT FEATURE

OUTLINE

The slide out room in your Safari coach is designed to provide maximum interior living space, ease of use, and reliability. Safari's innovative design begins with the mechanism. The slide unit is actually integrated into the chassis. The same members that support the coach floor also hold the slide out, so there is no relative motion, or "float", between the slide out and the coach.

A dual rack-and-pinion mechanism keeps the slide out in perfect alignment. The moving force for the slide out has the same hydraulic power as your leveling system. Both the levelers and the slide out share the same electric motor to activate the hydraulic pump. The coach does not need to be running because the slide out room uses power from the chassis batteries and only DC power is needed to move it.

The Safari system is simple and effective. This overview will provide you with important information regarding operation, maintenance, and precautionary advice.

OPERATION

This is a complete step by step guide on how to properly extend and retract the slide out room. Before attempting to operate, read through this section thoroughly for a proper understanding of correct and safe operation.

WARNING: Be sure that electric shore line cord is fully retracted before operating the slide out unit.

WARNING: Always check outside the coach before using the slide out to be sure there are no obstructions that may damage or affect the operation the slide out. Do not sit on the living room sofa while the slide out is either being extended or retracted.

Slide Out Extension

1. Be sure that the transmission is in NEUTRAL and set the park brake by pulling out the park brake knob located on the driver console or lower dash area.

2. Check outside of the coach to be sure there are no obstructions and that there is adequate clearance for the unit to be extended. Always lower the jacks prior to extracting the slide out unit. This provides added stability. *Do not* level the coach prior to extending the slide out.

3. The slide out operation switches and the lock out are located near the Coach Monitor Panel. Insert the key into the slide out safety lockout switch and turn it clockwise to allow the slide out to be extended. The location of the lockout and slide out switches are in the galley or over the front-entry, near the Coach Monitor Panel.

4. Extend the slide out by pressing the slide switch to the OUT position.

5. Wait until the slide out has been fully extended before leveling the coach. See the Leveling section of the Vehicle Operation chapter of this manual for detailed instructions on how to level your coach.

Slide Out Retraction

1. Make sure the driver's seat is forward and there are no obstructions inside the coach blocking the path of the slide out unit. Check outside the coach to make sure all connections are retracted out of the way.

2. With the jacks still extended, press the slide switch until the room is completely inside the coach. The slide out will automatically stop when it has completely retracted.

3. Turn the lockout switch counter-clockwise to activate the automatic, hydraulic locking system. This will keep the slide out from extending while moving.

4. Raise the front jack and then the rear jacks after the slide out unit has been fully retracted.

WARNING: Always make sure the driver's seat is moved forward toward the dash so the slide out wall has enough clearance to retract. Failure to do so could result in damage to the slide out unit or the seat. Be sure all items on the floor are out of the path of the slide out.

NOTE: If the slide out fails to fully retract, check the following:

- ***Be sure there is nothing inside the coach that may be obstructing the movement of the room.***
- ***Check the chassis batteries for ample operating power. If the chassis batteries are drained, you may need to charge them before operating the slide mechanism. You can also connect the house battery with the chassis battery power by activating the boost switch.***
- ***Check the fuse for the slide switch. It is located inside the switch itself.***
- ***Check the lockout switch to make sure it is in the ON position***

If the slide out still does not operate, call the SMC Service Center for instructions on using the manual override feature.

CARE AND MAINTENANCE

Safari's slide mechanism is one that does not require any regular maintenance. However, here are a few suggestions that you may want to consider:

Waxing both sides and the roof of the slide out with an everyday car wax will help condition the room's seals during use. In turn, these seals will clean the sides and top of the room better.

WARNING: DO NOT store any items on the roof above the slide out. Doing so may cause damage.

It is also important to keep the roof over the slide out clean and clear of any debris. Clean the roof with water from a garden hose nozzle before bringing the slide out in. The roof cap of the slide is a single-piece fiberglass cap and is seamless. It is sloped and crowned to ensure that moisture runs off the top of the slide. In addition, the room seals are designed to squeegee off the moisture from the room, preventing most moisture from entering your coach.

CHAPTER 5 – APPLIANCES & EQUIPMENT

OUTLINE

Your coach contains a variety of appliances and equipment, ranging from the awnings to the VCR. The manufacturer's manuals for all of these items are included in the warranty package. Although we have included general information for quick reference to help you to use your appliances and equipment, please take the time to read the manufacturer's documentation to become more familiar with the proper use and maintenance of these components.

GALLEY FEATURES

The galley in your coach contains a full suite of cooking and cleaning appliances and equipment. Every coach has a range top, micro/convection oven and refrigerator. Some coaches may have a dishwasher, washer/dryer and icemaker. The appliances are all very similarly to models found in homes, but there are some things to consider when using them on the road.

Unless you are camping with full hookups - sewer, water, and electricity - your coach is limited by its capacity to provide power and store water and waste. Regularly check these resources and the LP gas tank at the Coach Monitor Panel. It can be very difficult to cook and clean without LP gas and a full wastewater holding tank!

Range Tops

Your motorhome is equipped with an LP gas range. Before using the range, acquaint yourself with the safety precautions described in the LP Gas chapter. LP gas has a distinctive garlic-like odor. If you smell gas in your coach, you should open the doors and windows, exit the coach and shut off the main gas supply valves from the tank.

Before attempting to light or operate your range, please *refer to the manufacturer's instruction and warranty manual for more specific information related to your range.*

WARNING: Do not use the range without turning on the ceiling exhaust fan. To ensure against possible ignition of clothing or any other combustible materials, the user should always adjust the flame size so that it does not exceed beyond the edge of the cooking utensil. Flammable liquids or materials should not be stored in cabinet areas around the cooking appliance.

WARNING: A gas range is not, nor should it ever be used, as a space heater.

WARNING: Do not leave the burners or pilot lights lit while traveling or refueling your vehicle at a service station.

Your range should only be cleaned with a soft cloth and a warm soap and water solution. A non-abrasive cleanser may be used -- never use abrasive or corrosive chemicals. If a spill occurs on the stainless steel, clean it promptly or the metal will become discolored and the stain difficult to remove.

Gaggenau™ Range Top

To ignite a burner, depress the knob and turn counter-clockwise to the HIGH setting. Keep the switch depressed for 5-10 seconds after lighting to ensure that the safety ignition procedure is completed. Repeat the procedure again if the unit fails to stay lit. Adjust the size of the flame by rotating the knob. To switch the burner off, turn the knob to the OFF position. The top cover must be open when the main burner is in operation.

For increased safety, the Gaggenau range has a thermo-electric ignition safety device to prevent unburned gas from escaping. For specific information on how to operate and care for your range top, *refer to the Gaggenau operations manual.*

If the range does not operate, check the breaker switch and the gas supply. Call your nearest Gaggenau service center if problems still exist.

WARNING: Do not operate the range top if you suspect there might be a gas leak. Have it serviced immediately by an authorized repair center.

Seaward™ Range Top

To ignite the burners, push in the knob and turn counter-clockwise to the IGNITE position. Hold the knob in until the spark ignites the gas and until the thermocoupler is heated (5-10 seconds). This will activate the safety magnet and keep the burner lit. Release the knob and set to the desired setting. Turn the knob clockwise to turn it off.

Each LP gas cylinder has a manually operated shut-off valve threaded directly into the cylinder outlet and a safety device to prevent unburned gas from escaping. If a leak is ever detected, make sure that a qualified technician fixes the system before operating again.

Regular cleaning with a soft cloth and a warm detergent solution is generally enough to keep the top of your range clean. To avoid burns, allow time for it to cool before cleaning. *For detailed information and maintenance, refer to your Seaward manual.*

Refrigerator

Before attempting to operate the refrigerator in your coach, please refer to the instruction and warranty manual in the warranty pack.

Your refrigerator is capable of running on either 120 VAC power or LP gas. It can be manually set or run in an automatic mode. In automatic mode, it will use 120 VAC power when available; otherwise it will automatically switch to LP gas. It will not draw power from the batteries. Using AC power when connected to a shore line will save LP gas for other purposes.

Three switches control the refrigerator. One switch controls the thermostat, another the humidity, and a third controls the mode of operation. To start the refrigerator, turn the thermostat to its coldest setting. Then push the mode switch to GAS. The red X will appear. The X should disappear within ten seconds. If there is air in the gas lines it may take up to twenty seconds. If the X is still displayed after twenty seconds, turn the switch off and try again. After starting, set the thermostat to the desired temperature.

If the burner does not light after a few tries, let the unit sit for several minutes. Gas may have built up in the unit, presenting a safety hazard. See the LP Gas chapter of this manual for explanations as to why the gas system may malfunction.

If you have trouble operating the refrigerator with LP gas, check to make sure that the main supply has been turned on and that the valve on the refrigerator is in the ON position.

NOTE: **If the system has not been used for some time or if the supply tanks have just been refilled, air may be trapped in the LP Gas supply line. To purge this air, reset the ON/OFF switch three or four times with the mode switch selecting GAS.**

Keep your refrigerator clean using mild soap. Defrost the freezer occasionally to remove accumulated frost. Use baking soda to control odors. Check the condition of the burner regularly, even if you rarely use the gas mode. Full instructions are given in the manual.

WARNING: Do not store anything in the refrigerator vent/access area. Restricted airflow may damage components and void the warranty.

Micro/Convection Oven

The oven in your coach combines the power and convenience of microwave and convection ovens. It acts as an 800 watt microwave oven or a 1350 watt conventional electric oven and operates on 120 VAC power. It is operated the same as a household microwave or electric oven.

The oven has safety interlocks to prevent its use with the door open, and screens to prevent microwave leakage. These safety features should be kept in good condition - never attempt to bypass the safety interlocks or allow debris or residue to accumulate on the door or oven face. If the oven is damaged, do not use it.

An owner's manual is included in the warranty package. Be sure to read all of the instructions and precautions supplied with the oven before using it. The manual also contains an excellent summary guide.

The oven should only be adjusted or repaired by qualified service personnel. Check your owner's manual for maintenance tips and service locations. As with all appliances or electronic components, be sure to register your oven with the manufacturer.

Dishwasher

A dishwasher is optional on some models. Its operation is very similar to dishwashers for home use. The full operating guide is provided in the warranty package.

If you coach is equipped with both a dishwasher and washer/dryer, power to the dishwasher is directed through a selection switch in the galley that prevents both appliances from operating simultaneously. A water cut-off valve is located under the galley sink.

Icemaker

Many coaches feature an icemaker. The icemaker can draw power from the shore line, generator or inverter. There is a water cutoff valve under the galley sink. (Locations may vary).

Since the icemaker can run off the inverter, left unattended, it could drain the house batteries. If you wish to minimize battery or generator use, you should run the icemaker as little as possible. One way to do this is to run the icemaker only long enough to make the amount of ice you plan to use and then turn it off. The icemaker should remain cold enough to keep the ice frozen through the day.

USING AN ICEMAKER:

- Never use an ice pick, knife or other sharp instrument inside the icemaker. These items may damage the interior of the icemaker.
- Never use hot air blowers to speed melting of ice or frost as you may damage plastic components and unit insulation.
- Always keep the lower front panel free of obstructions. Blockage in this area will interfere with free air movement in and out of the icemaker.

Refer to the manufacturer's manual for details and maintenance information.

Washer/Dryer

A ventless washer/dryer combination unit is optional on many models. This appliance is an extraordinary convenience - combining both the washer and the dryer in the same compact unit. For the best drying performance from this system, split the load when it goes into the drying mode or open the drum and separate the clothing for better drying. Please refer to the manufacturer's manual for detailed operating instructions.

If a dishwasher is also installed, then power to these two appliances is directed through a switch in the galley. This switch allows only one of the two to be operated at a time.

The washer/dryer operates on 120 VAC power through a circuit not connected to the inverter. Therefore, you must be connected to a shore line power or the generator must be running. The washer/dryer drains directly into the sewer connection so you must be connected to a sewer line to operate.

WARNING: Do not attempt to use the washer/dryer without being hooked up to a sewer line. Water will back up into the coach and could cause extensive damage.

Sinks

Your galley features a deep, stainless steel double sink, Genovese or Fountainhead countertop/sinks. Genovese and Fountainhead are covered in the following section.

To maintain your stainless steel sink:

- After each use, rinse and wipe the sink dry.
- Never use steel wool. The steel particles left in the sink can rust and become unsightly.
- Clean the sink with a mild, non-abrasive cleanser. Rub the sink along the grain of the metal. Do not use caustic or corrosive cleansers.
- The manufacturer does not recommend using a rubber mat in the sink. These mats can cause cleaning problems.

Genovese and Fountainhead Countertops & Sinks

Genovese and Fountainhead surfaces are nonporous so they can be easily cleaned with a damp cloth and ordinary soap or household ammonia. Genovese and Fountainhead not only look great but they are very easy to care for. Minor scratches and scrapes are also easy to repair.

To maintain your Genovese and Fountainhead Countertops:

- After use, wipe off all countertops.
- Use non-abrasive, non-corrosive cleaners.
- Do not put hot pots or pans directly on the countertop.
- Scratches can easily be buffed out with a wet scouring pad. (Specifically for Fountainhead countertops and sinks, refer to the Fountainhead brochure for details.)

SAFETY FEATURES

Engines, generators, and water heaters all emit exhausts that could possibly enter your coach. While unlikely, these systems may also develop leaks of diesel or propane gas. For your safety, the following items are standard on every Safari coach:

Smoke Alarms

Your coach is equipped with a smoke alarm that has been mounted on the ceiling of the galley area. The smoke alarm, like in your home, should be tested weekly and at the beginning of a trip to make sure it is operating properly. *Refer to the manufacturer's manual for details and maintenance.*

WARNING: Alarms should be tested weekly in order to assure proper operation. Test smoke detector operation before each trip, and at least once a week during use. Please refer to the manufacturer's manual for battery replacement and maintenance.

Propane Detector

The propane detector is mounted near the floor in the galley. Its purpose is to detect propane gas leaks, but it is sensitive to other gases, such as those found in hair spray, perfumes, alcohol, or odors produced by some cooking spices.

The propane detector is operating at all times when the coach 12 VDC system is on, unless the Coach Power switch is shut off. On some models, there is a power switch on the detector itself. When first turned on, the detector will beep while in its warm-up mode. It will then begin monitoring the immediate environment for combustible vapors. The detector is operational when the green light is on.

WARNING **If LP gas is detected, the red indicator light will flash and a pulsating alarm will sound until the gas has dissipated or until the mute button is pressed. If the alarm sounds, you should open the door and windows and evacuate the coach until the alarm stops. After the alarm has stopped, be sure to check the LP gas tank, lines, and appliances for leaks.**

Carbon Monoxide Detector

Carbon monoxide (CO) is an odorless, invisible gas that is an exhaust product from the engine, heaters, or furnace. *It can be lethal.* Your coach is designed to keep all exhausts from entering the interior. However, if CO exhausts do enter your coach somehow, such as the result of not closing the bed above the engine compartment, the detector will alert you of a potential problem.

The CO detector is mounted on the ceiling in the bedroom. There are no switches to allow the unit to be accidentally turned off, so the CO detector will provide reliable protection by alerting you of the build up of potentially dangerous levels of gas on a continuous basis.

CO Detector Operation			
Green light	*Red light*	*Sound*	*Operation*
ON	OFF	None	Normal operation.
ON	Flashing	2 beeps per second	CO gas detected. Shut off engine and appliances. Evacuate the coach.
ON	Flashing	1 beep per 16-seconds	Test mode. Wait one minute then press test button to end test cycle.
OFF	OFF	None	No power. Check the power source.
OFF	ON	None	Detector failure. See manual.

NOTE: **As with the LP Gas detector, you should check the CO detector weekly and at the beginning and end of each trip.**

NOTE: **The CO detector is also sensitive to other gases such as those found in hair spray, perfumes, alcohol, or odors produced by some cooking spices.**

WARNING: **If there is constant beeping and the green and red lights are flashing, CO gas has been detected. Shut off appliances, coach engine, and water heater. Evacuate the coach and call the fire department. Have any problems corrected before restarting any appliances or the coach.**

Fire Extinguisher

Each coach is equipped with a fire extinguisher located in front of the passenger seat. Be sure to learn correct operation of the fire extinguisher before an emergency arises. In order to keep the fire extinguisher in a safe and operable condition, inspect it regularly, having it recharged as needed. *Please refer to the manufacturer's manual for details.*

ENTERTAINMENT

The coach contains several entertainment features. They are the same kind of video and audio equipment found in many homes and basic operation should be familiar to most everyone. The manuals for this equipment are contained in the warranty package. Please refer to the manufacturer's manuals for the operation, maintenance and repair information.

Television

All Safari coaches are equipped with televisions. The Trek has one TV and all Class A coaches have two TVs; one in the front and one in the bedroom. The televisions can use either an antenna or a cable hookup. Broadcast signals are picked up using a power-boosted antenna. There is a cable hookup located in the service center on the driver side of the coach. An adapter provided with your coach allows either a coaxial cable or a two conductor wire to be attached.

If you are using the antenna, turn on the power boost. The boost draws 12 volt power to amplify the antenna signal. It is controlled by a small switch in the overhead cabinetry in the front of the coach. Since this does draw a small amount of house battery power, remember to turn it off when not in use.

NOTE: If you are using the cable hookup, you must leave the antenna boost switch in the OFF position. Remember to lower the TV antenna before driving.

Satellite Dish (Optional)

Your coach may be equipped with a Sony Digital Satellite Receiver and Datron Mobile Satellite Television System. Together, these components allow you to access up to 200 different video and audio channels while listening through the Bose speaker system.

The receiver and satellite antenna control units are located in the overhead cabinet in front of the passenger seat. The signal from the receiver is sent to the VCR and from the VCR to the television for video and the stereo receiver for audio. No adjustments need to be made to the VCR to view programs. The system is preset and the television should be tuned to channel three as with normal VCR use.

To maximize your reception, park in a location that has an unobstructed view of the southern sky. Level your coach before "peaking" (locating the strongest signal from the satellite) your receiver. This will expedite the process and you will not have to re-peak the receiver after leveling.

For details on how to operate your satellite system and receiver, refer to the Sony and Datron operating guides.

NOTE: **Before you can use the Sony Digital Satellite Receiver, you must first activate your programming service. You will need to remove the access card from the backside of the receiver. You should also write down the model and serial numbers that are located on the bottom of the receiver. The receiver can be pulled out of its location by hand without the use of tools. There is extra cable attached so the unit can be pulled out enough for access. In some coaches the straps must be removed from the receiver before it is pulled out. When you have the card and numbers, call the number listed in the Sony operating instructions.**

Video Cassette Recorder (VCR)

With the exception of the Trek and the Class C, VCRs are a standard feature on all Safari coaches. The VCR is installed at the factory to be ready for use. The VCR is set for viewing on channel three of the television. This switch is on the back of the VCR. Make sure that both the VCR and TV are powered on for use.

Please refer to the manufacturer's manual for detailed instructions and maintenance.

Stereo Systems

Most Safari motorhomes are equipped with a full-feature residential stereo system. Regardless of your coach's floor plan, Bose cube speakers have been installed for the finest sound quality available. Standard on the Panther, Continental, Serengeti, and Sahara models and optional on the Zanzibar, is the Bose Home Theater surround sound system. This system provides the coach with an entertainment system that is as good or better than those found in most homes. Use the remote control or direct access. To operate this system, please refer to the Bose manuals for further details of operation and maintenance.

To operate the Bose Home Theater surround sound system, be sure that the main cabin's stereo switch is in the ON position. This switch supplies 120 VAC power to the residential system's amplifier.

The Bose Wave Radio in the bedrooms of the Panther and Continental motorhomes is wired to accept sound from the residential stereo amplifier located in the PS overhead cabinet in the cabin. Tune in sound from stereo, CD, TV, and VCR programs being run in the front of the coach. This feature is also an option for the Serengeti and Sahara models.

Safari coaches without the Bose systems have a Panasonic or Delco dash sound system wired to the automotive speaker system.

Again, please refer to the manufacturer's manuals for details of operation and maintenance.

Phone Jacks

The phone jacks in your coach are standard extension jacks, compatible with almost all phone equipment. Typically, your coach has two phone jacks, one in the bedroom and one in the front living area by the sofa or table.

AWNINGS

Awnings are standard on many Safari products and are a popular option on other models. Awnings are much more than an attractive window dressing. When properly used, they are vital for keeping your coach cool and comfortable in warm weather.

Awnings can have a profound effect on the temperature of your coach. In hot, sunny weather they can greatly reduce the need for air conditioning. Instead of running the roof air conditioners, extend all awnings fully, open the door and/or windows and use the attic fan to expel the warm air. In many conditions this will be more comfortable than air conditioning. Remember that it is much easier to keep a coach cool than it is to cool a coach.

The awning manufacturer's manual in your warranty pack contains detailed instructions for usage, maintenance, troubleshooting, and warranty information. Please read it before using your awnings.

Washing your awnings will help keep them in their best condition and ensure that they will last for as long as you own your coach. On a monthly basis, loosen hardened dirt and dust with a medium-bristled brush and then thoroughly rinse both the top and bottom with a hose. Wash both sides of the awning with a mild soap solution, scrubbing with the brush. Rinse thoroughly and allow them to dry.

Armed Awnings

Most Safari coaches are equipped with awnings. Armed awnings are used on all windows and are an option for the large patio awning. These awnings operate similarly to pull-down blinds found in the home.

This section discusses the use of armed awnings. To open, grasp the loop on the pull strap and pull it down to extend the awning. Hook the loop onto the window strap hanger when in place.

To close, remove the loop from the window strap hanger. Slowly allow the awning to roll up by feeding the pull strap upward and diagonally. This will prevent the strap from binding up and creating a bulge in the fabric. The awning is now ready for travel with no locking required.

WARNING: Do not release strap when closing the awning. The awning is under tension and may snap back against the vehicle.

WARNING: Do not use the awnings in windy weather - a strong, gusty wind can destroy the awnings and damage your coach.

On some coaches, armless awnings are an option. For detailed use and maintenance instructions, please refer to the manufacturer's manual provided in your warranty pack.

Girard B-25 Awnings

On some Safari coaches, the large patio awning is a lateral arm type awning. These awnings are easy to use and care for. There are two types of Girard awnings - motorized and crank.

The crank awning is extended manually. To extend or retract the awning, insert the end of the hand crank into the receiver and turn it a quarter of a rotation clockwise. Then let the handle drop about a half inch - at this time, you should feel the handle lodge into the receiver. The awning is now ready to extend or retract.

To open the awning, rotate the handle counter-clockwise. To close the awning, rotate the handle clockwise. When extension or retraction is complete, push up on the handle and turn the crank counter-clockwise a quarter turn. This will release the crank handle from its housing.

A single switch operates the motorized awning. The switch is located above the entry door. It has an up arrow, a stop, and a down arrow on it. To extend the awning, push the down arrow. To retract the awning, push the up arrow. You do not need to hold the button down once it has been activated. To stop the awning at any point, push the STOP button.

WARNING: The awning motor is not intended for continuous use. If it is used excessively, it will automatically shut off until it has cooled down.

Some motorized awnings are equipped with a wind sensor. If your awning is, there will be a sensor cup on the roof of your coach. In the event that high winds hit the sensor cup, the awning will automatically retract, as long as it has a 120 VAC power source.

WARNING: Your coach patio awning is designed as a sun shade and not made for use as rain protection. It may be used in light rain, but do not allow water to pool in the center of the awning. It can cause severe damage to the awning.

Refer to the Girard B-25 Owners Manual for operation details and maintenance.

Awning Maintenance

The acrylic fabric of your awning is synthetic and cannot support mildew or other plant growth. However, mildew can form on dirt accumulated on the awning.

It is important to keep your awnings clean. Generally speaking, you should clean your awnings at least once per month, more often if in a dusty area with occasional rain. The following table highlights cleaning instructions. *Refer to the awning manufacturer's operating instructions for detailed cleaning instructions and maintenance.*

NOTE: **Your awning can be rolled up wet, if necessary, but be sure to open and dry it as soon as possible.**

Awning cleaning directions.	
Girard Awnings.	The acrylic fabric of the awning needs to be cleaned regularly to remove the accumulation of dirt. First, brush off any loose dirt. Then hose the fabric off and clean with a cloth and a mild solution of natural soap and lukewarm water (under 100 degrees F). Rinse thoroughly to remove soap and allow it to air dry. If you need to retract the awning while it is wet, extend it at the earliest opportunity to continue drying.
A&E Systems	Clean awnings with A&E Canopy Clean. After cleaning treat with Acrylife.

WARNING: Never use strong detergents or stain removers on your awning. They can destroy the water-repellent properties of the fabric.

The awnings have moving parts guiding the fabric. These parts should be periodically lubricated to resist corrosion and ensure ease of operation. Refer to the manufacturer's operating instructions for details.

CHAPTER 6 – WASTEWATER SYSTEM

OUTLINE

The wastewater holding system makes your coach a completely self-contained camping unit. You can use appliances (except washer/dryer) and fixtures without a sewer hook-up while storing the waste until it is convenient to dispose of it. The system is designed to be trouble-free and to minimize odors.

The system has two holding tanks - a "black water" tank for toilet waste, and a "grey water" tank for appliances and drains. Both tanks drain through the same coupling. Your coach also includes a flexible hose and adapter for draining.

The following diagram illustrates the general organization of the system. The actual location of each component varies according to the model of the coach.

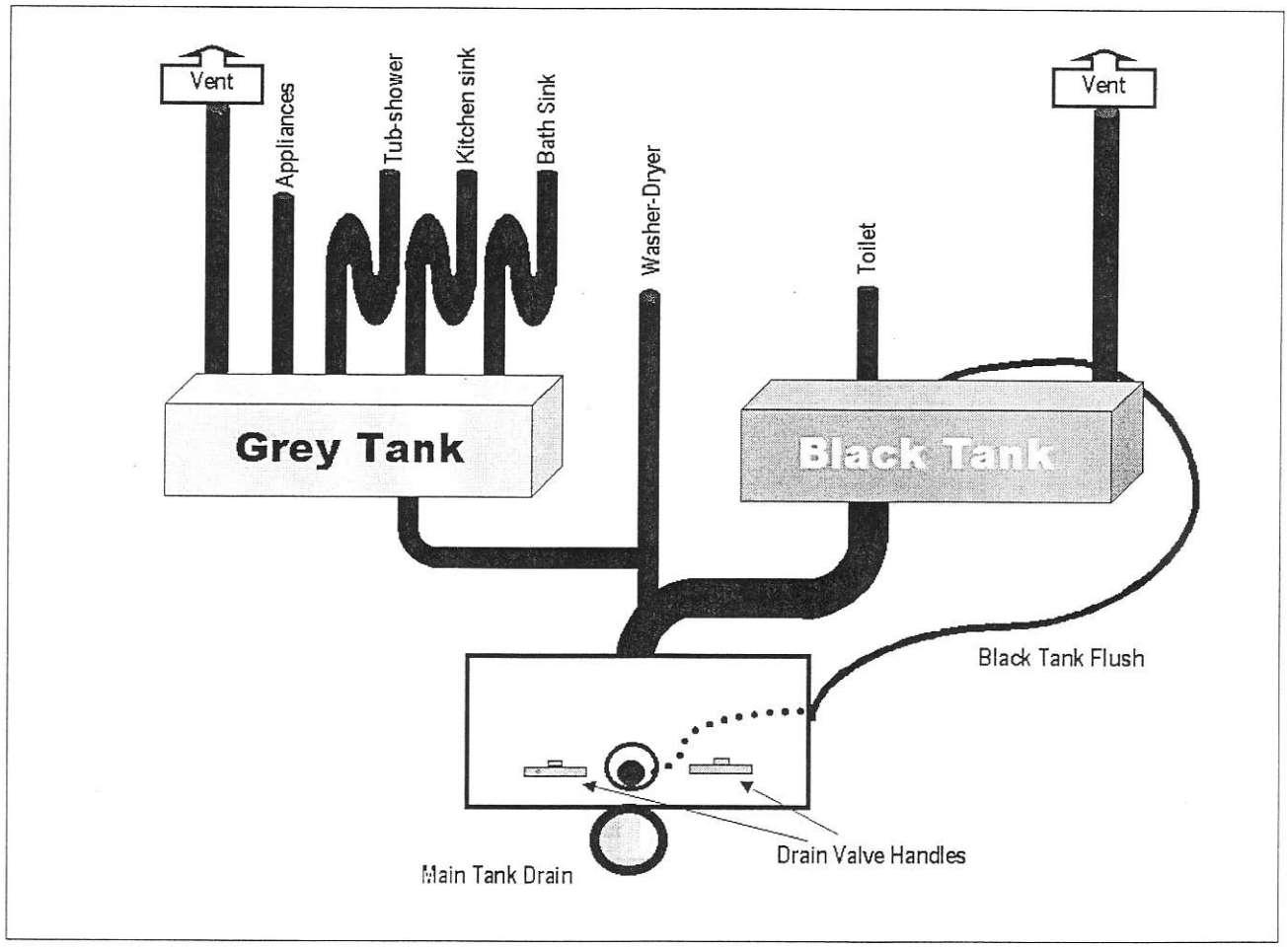

Figure 1 - Waste System (Generalized)

Holding Tanks

The holding tanks in your coach are made of high-density polyethylene. They will not rust and are resistant to most forms of corrosion. The tanks are designed to last as long as your coach does.

The "grey water" tank is used to hold wastewater from the galley sink, shower, and appliances. Those drains should not be used to dispose of solid waste, although small amounts of food or similar debris will not harm the system. You should not use the drains to dispose of any caustic or corrosive liquids.

WARNING: Do not dispose of any petroleum product, ammonia, alcohol, or acetone through your drains. These liquids may harm the tank, valve parts, tank fittings or drain hoses.

It is a good idea to use a grease-cutting soap in your galley sink. This will help prevent grease build-up in the grey water tank, and will also help to keep the sensor probes clean. A build-up on the sensor probes could cause the tank monitor to read improperly.

The "black water" or solid wastes tank stores the output of the toilet and bathroom sink (in most floor plans). It has a larger drain and is located closer to the dump valve to facilitate dumping solid waste. A certain amount of liquid must be in the black water tank for it to drain properly. That is why water from the bathroom sink has been designed to drain into it. Never introduce anything into the system that will not dissolve and could prevent the black water tank from draining.

The tank levels can be viewed using the Coach Monitor Panel. Check the levels frequently to avoid an overflowing tank. Monitor readings can be altered by the chemical contents of the tanks, movement, or the coach not being level.

WARNING: Never dispose of standard household facial tissue or toilet paper through your toilet. They are often dyed, embossed or otherwise treated and will not dissolve. Always use soluble RV tissue available from most RV supply stores.

Odor Control

Odor can be a problem with your tanks. Be sure to clean your tanks regularly and use an approved tank deodorizer to help keep odors under control.

Before each trip, and after draining, add approximately one gallon of water to your black water tank through the toilet. The water helps liquify any remaining solids and reduces odor buiid-up.
Then flush an approved chemical solution or liquid tank deodorant into the tank. These products are available at most RV supply stores.

Clean the tanks after every trip. The grey water tank generally requires only an occasional rinsing. Do this by running clean water from the shower or galley sink to fill and then drain the tank. If an odor develops in the grey water system, fill the tank with a solution of water and baking soda. Let the solution sit for at least an hour and then drain it.

The black tank requires more attention. To aid in cleaning the black tank, most coaches have been equipped with a black tank flush system. Each time your tanks are dumped, flush the black tank for three to five minutes with the holding tank valves open. After every trip, fill the tank with clean water and drive the coach for several miles. The driving agitates the water and helps dissolve the remaining solids. Then drain the tank again.

If your tanks or plumbing lines ever sustain damage, take your coach to an approved service center. It is possible to repair tanks and lines without removing the tanks from the coach.

Sewer Connection

The tanks are drained through a single fitting located below the service center. The operation requires a flex hose that is supplied with your coach. Cover the drain coupling with the cap when the hose is not in place.

There are many publications that list dumping stations where you can empty your tanks. Most state and commercial campgrounds and many service stations have a dumping station.

Draining the Tanks

To drain the holding tanks, first remove the coupling seal cap from the drain fitting. Attach the flex hose to the drain by inserting the hose adapter into the coupling and turning it clockwise to lock it into place. Attach the other end of the hose to the sewer line. Then drain the tanks - first the black, then the grey. Each tank is drained by pulling out the valve handle located in the exterior water system compartment.

NOTE: **Always drain the black tank first and follow with the grey tank. This will help to flush any solids left in the line after draining the black tank.**

NOTE: **When your have completed draining your holding tanks, make sure both valves are closed. Always keep the coupling seal tightly fastened.**

WARNING: **Never empty the wastewater holding tanks directly on the ground. It is illegal and can be punishable by fines or imprisonment.**

Using A Sewer Line

When you are parked at a campground with sewer facilities, you can keep the system hooked up to the sewer continuously. While you can keep the hose in place, it is better to keep the valves closed and dump the tanks every few days after a substantial amount of waste has accumulated.

If you have a washer/dryer installed in your coach, there is a third outlet to the drain coupling. The washer/dryer does not drain into either tank. Instead, its wastewater flows directly to the sewer coupling. Therefore, you must be hooked up to a sewer line to use this appliance.

WARNING: Do not use the washer/dryer unless you are hooked up to a sewer line. The washer/dryer is not connected to a holding tank and will overflow into the coach.

CHAPTER 7 – ELECTRICAL SYSTEM

OUTLINE

The electrical system in your Safari motor coach provides maximum power with a minimum amount of effort and maintenance from the owner. Any appliance you would use in your home can be used in your coach within the amperage limits of the system. There are also features in place to prevent such problems as battery drain and circuit overload.

Electrical System Operations

Your coach has five main sources of electrical power: the generator, the shore line connection, inverter, chassis batteries and coach batteries. All sources are independent of each other, but can be combined in a variety of ways to provide the most efficient electrical supply to the coach and to charge the batteries.

Your coach uses two types of power: 120 volt alternating current (VAC) and 12 volt direct current (VDC). Homes in North America use 120 VAC power, while 12 VDC is most commonly used in automobiles. In your coach, most of the appliances and lights you would find in a home use 120 VAC. Power (120 VAC) to the coach is distributed through a main circuit breaker box located on the PS in the overhead cabinet in the bedroom. This power is separated into two main paths.

Engine starting and control, dash lights, pumps, fans, and chassis functions use 12 VDC. Batteries similar to those in automobiles provide this power source. When the generator is running or shore line power is present, these batteries are charged by the alternator while the engine is running and assisted by the battery charger.

Your coach is also equipped with an inverter that will convert 12 VDC power into 120 VAC power for use when the two primary sources -- shore power or the generator -- are not available. This inverter also will convert 120 VAC power to 12 VDC power to charge the batteries.

More information on operation of the generator, inverter, and the 12 VDC system is detailed later in this chapter. Please become familiar with your electrical system for your safety and to maximize its efficiency. Detailed manuals from the manufacturers of the generator and inverter are included with your manual package.

WARNING: Do not connect the shore line to any source other than a RV approved outlet. Connecting your shore line to 30 amp outlets such as dryer or welder outlets in the home or well pumps on a farm will cause extreme damage to the electrical system of your coach and may cause severe injury.

120 VAC SYSTEM

The 120 VAC system consists of the shore power, generator and inverter. The shore line connection is the primary source for power. The shore line or the generator powers all 120 VAC items in your coach. In the event no power is available from the shore line or generator, the inverter will provide power to the system for such items as the television, VCR, or sound system. The system is protected from overloads by a set of system breakers and fuses.

The 120 VAC shore line system works via a power transfer switch. From this transfer switch, power is routed to the entire 120 VAC system. The inverter circuit is powered up through relays in the inverter itself, which then furnish 120 VAC power to the two circuits.

The system will take power from the most appropriate source automatically. The inverter remote switch must be on for the inverter to furnish power to the 120 VAC system. When dry camping, it is wise to only turn on the inverter when it is needed. Leaving the inverter on at all times will result in drained batteries.

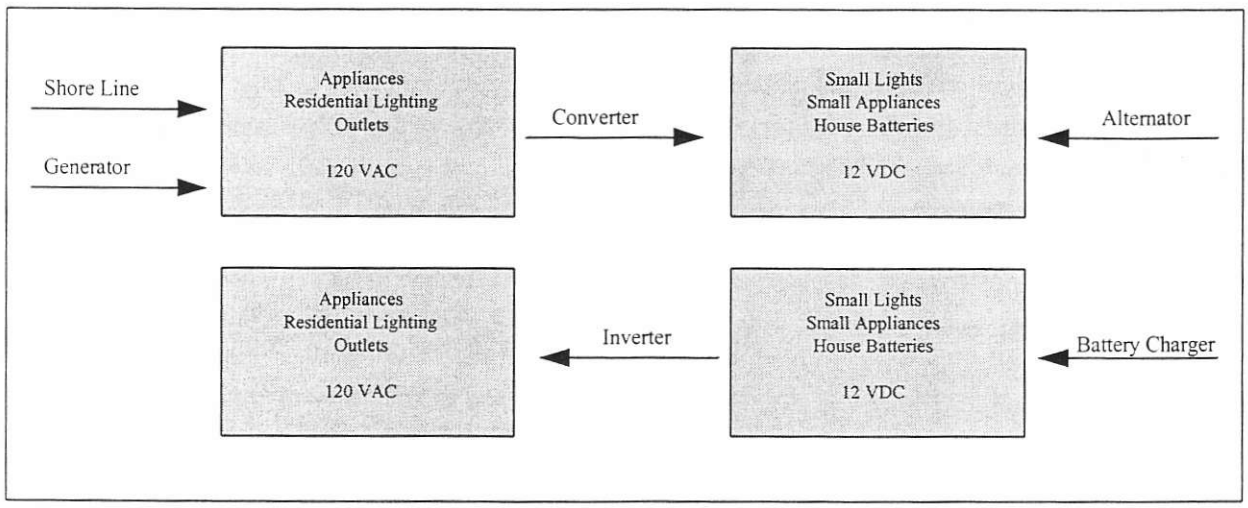

Figure 2 Simplified Electrical System

WARNING: Modifying the circuitry in your motorhome may void the warranties of the coach and any appliances on that circuit. Never work on a live circuit. Never bypass breakers or fuses.

Circuit Breakers and G.F.C.I.

The 120 VAC system has two important safety mechanisms. First, a set of circuit breakers prevents any circuit from being overloaded. A breaker can be tripped as the result of a short circuit, a faulty appliance, or too many appliances being run on the same circuit. The system is divided into several separate circuits which decrease the load on each and allow other circuits to operate in the event one becomes inoperable.

WARNING: A circuit without a breaker presents a serious safety hazard. Never attempt to bypass the circuit breakers for any reason. Doing so will void the warranty both of your coach and any appliance on the circuit.

The main breaker panel is labeled with the appliances and outlets on each circuit. The inverter contains its own circuit breaker (and also a sub panel on 2000 watt units), so power from it is not channeled through the main panel. The RESET switches are located on the inverter in the same bay with the 50 amp shore line. If the inverter is not producing power, check the breaker on the inverter. (Also check the sub-inverter panel located in the overhead in the bedroom or the sub panel may also be located in the bottom of the bathroom sundries cabinet.)

G.F.C.I. refers to Ground Fault Circuit Interrupt. This is a safety feature that halts power through a circuit if a short or other malfunction is detected. This is an important mechanism, designed to help prevent electrocution injuries. The G.F.C.I. works in a manner similar to a circuit breaker. If a fault is detected in the circuit, a switch inside the G.F.C.I. is tripped, halting power flow. The circuit will not operate again until the switch is reset in the G.F.C.I. receptacle.

WARNING: G.F.C.I. circuits are designed to prevent electrical shock, not overloads. They do not replace circuit breakers.

NOTE: Several outlets as well as coach lighting may be connected to the G.F.C.I. circuit. Therefore, if a set of interior lights are not working or if an appliance is not operating, check the nearest G.F.C.I. RESET switch to see if it has been tripped.

Generator

Depending on the coach, the generator runs on LP gas or diesel. Both types of generator provide a very efficient source of 120 VAC power.

The following section contains only an overview - please refer to the manufacturer's manual in the warranty pack for full specifications, instructions, and maintenance requirements on the generator.

You can start your generator by using one of two generator switches. One is located on the Coach Monitor Panel. The other switch is located on the generator itself. Press the START button and hold it until the generator starts. A delay of up to five seconds is normal. To stop the generator, press the lower portion of the switch until it comes to a complete halt.

NOTE: **If the generator does not start, release the button and try again. Continuous cranking can damage the generator starter.**

Do not neglect maintenance of the generator. A full schedule is provided in the generator manual. An hour meter is mounted on the Coach Monitor Panel for your convenience. If you are operating in dirty or dusty conditions you should accelerate the schedule accordingly. Monitor the generator for signs of problems, such as odd noises, power loss, and overheating. If any such signs appear, have the generator serviced promptly.

WARNING: **Never use your generator as an emergency power source for a residence, or any other facility connected to an electric utility service. Using the coach generator to provide power to any building on an electric utility energy grid may allow electricity to flow back to the utility lines. This would present an extreme hazard to any technician working to restore power.**

WARNING: **Never store anything in the generator compartment. Using this area for storage presents a fire hazard, and may prevent the correct operation of the generator.**

Power Transfer Switch

An automatic power transfer switch connects the coach to available external power. In most models, this switch is located in the bay on the driver's side behind the rear wheels, The switch is located in the storage bay, in front of the holding tanks on the Panther. If 120 VAC power is not present from the external power source, the transfer switch will select generator power approximately 40 seconds after the generator starts producing electricity. Generator power will always have priority over shore power when it is present.

Inverter

The inverter is located in the compartment behind the driver's side rear wheel. It transforms 12 VDC into 120 VAC power usable by the major appliances. With the inverter, appliances can utilize power stored in the house batteries without using power from the generator or shore line. The remote inverter panel is located on the bedroom wall. Not all circuits are connected to the inverter and so not all appliances can be run without the generator or shore line. (See Table 1 earlier in this section.)

The inverter has its own internal breakers; therefore, power from the inverter is not channeled through the circuit breaker panel. If power is not reaching appliances served by the inverter, you should reset the inverter by pressing the RESET button fully.

The power for the inverter comes from the house batteries, and you should keep an eye on the battery level as you use your appliances. The battery level can be checked using the Coach Monitor Panel.

Your coach is equipped with a 1000, 1500, or 2000 watt inverter. These inverters are ample for most purposes. With the 2000 watt inverter, the microwave can be run off of the inverter circuit (non-CSA coaches only) although it is not recommended. The microwave oven requires either shore line or generator power to operate with a 1000-1500 watt inverter.

NOTE: **Power provided by the inverter is intended for your convenience. It should be used sparingly so that it doesn't drain the batteries.**

WARNING: Never store liquids or flammable material near the Automatic Transfer switch or the inverter.

12 VDC SYSTEM

The 12 VDC coach system provides power for a variety of applications. Many coach lights, fans, the water pump, and other coach accessories use 12 VDC. In addition, 12 VDC power is used to ignite the Hurricane heating system or furnace, power its fans, and run the indicator lights in the refrigerator and the Coach Monitor Panel. The 12 VDC system also can provide temporary power for the 120 VAC appliances with use of the inverter.

The 12 VDC system is divided into two sections. The "chassis" section powers the engine, running lights, dash accessories, radio and generator. It includes the "chassis" batteries and alternator. (Bose Stereo option uses 120 VAC power for amplification.)

The "house" section powers the 12 VDC interior lighting, ceiling fans, refrigerator, furnace, water heater, Coach Monitor Panel, and water pump. This section includes the set of "house" batteries. It also provides power to the inverter.

A boost switch connects the two systems. This allows the house system to supplement the chassis system and also prevents the chassis battery from being drained by house demands. This is more fully discussed in the next section.

Chassis System

When the coach is hooked up to either shore line or generator power, a battery charger works in conjunction with the inverter/charger to maintain the chassis batteries' charge. The chassis electrical system is enhanced by Safari in several ways. The system provides power for starting the engine and also powers the leveler pump and generator. It is recharged by the

alternator and, in some instances, solar cells and protected by a 250 amp fuse.

Solar Cells (Not Included On All Models)

The solar cells provide up to five watts of power during the daytime to assist in charging the chassis batteries. This helps to maintain the battery charge even when parked for extended periods. All solar cells produce a slight drain during the night. In your coach, the drain is virtually immeasurable.

NOTE: **Solar Cells will not be immediately operational following extended periods of inside storage. After exposure to the sun, solar cells will begin the trickle-charge process**

Isolator

Power from the alternator is channeled through an isolator. This device allows the alternator to simultaneously charge the chassis and house system, while still keeping the two systems separate. When the isolator is used, draining the house batteries will not affect the chassis batteries, and vice-versa. With a small amount of care, at least one battery system will always be charged.

Boost Switch

If the chassis batteries lose their charge and become unable to start the engine, it is possible to apply the house system to the task. A boost switch, located on the driver's console, connects the two systems. By activating the switch, the starter can get power from the house batteries and converter. The boost switch should only be activated for the time that the power is needed.

NOTE: **To start the engine when both the chassis and house batteries have lost their charge, connect the shore line to an approved RV outlet and activate the boost switch. Do not start your coach until there is enough charge in the battery system. This will be indicated on the remote panel when the amp charge has dropped from its starting level.**

House System

The house 12 VDC system provides the power for all 12 VDC accessories with the exception of the engine starter, leveler pump, generator, and automotive functions. The system includes four batteries that are designed to preserve their power, even after repeated drains and charges, as long as the battery is properly maintained. This battery type is known as a "deep cycle" battery. The system is routed through the fuse panel located over the bed in the rear of the coach.

The house system is charged by several sources. The alternator charges the system through the isolator when the engine is running. As mentioned above, the isolator keeps the house system separate from the chassis system, preventing the chassis battery from being drained by the house appliances. The converter provides power from a 120 VAC source, either the generator or shore line. It operates automatically according to the presence of 120 VAC power. The 20 watt or 70 watt solar panel located on the roof of the coach assists in charging the house batteries during the day, when direct sunlight is present, via a solar regulator located under the bed.

The house battery system provides power directly to the inverter. It serves the circuits that connect to the interior and lighting. These include the ceiling fans, furnace or Hurricane heating system, water heater, water pump, cargo lights, and refrigerator. They are connected directly to the house batteries through a 250 amp fuse located under the bed and in a panel located near the bedroom door. A circuit breaker panel is located next to the 120 VAC breaker in the bedroom overhead cabinet. The house battery system is also connected to the chassis system through the boost switch.

The main circuit breaker panel is separated from the batteries by a fuse and a relay. The switch to control the relay is mounted on the firewall near the coach entry. The fuse is located under the bed.

The strength of the batteries can be checked using the Coach Monitor Panel. The monitor can only give a general indication of the charge level of the battery, but is an important tool for your power management.

With four ways to recharge your batteries (shore line, generator, alternator, solar cells), you have plenty of options to assist your power management. One factor to remember is that recharging time is greatly affected by the load. The less drain from lighting and accessories, the faster the batteries will recover.

Fuses

Fuses offer a simple and effective method of protecting the 12 VDC lines from overloads. By burning out during an overload, they stop the current and end the hazard the overloaded circuit might present to the appliances and to the coach. Fuses are an important safety feature, and should never be bypassed.

If power no longer flows to a particular 12 VDC appliance or circuit, the fuse should be one of the first items to check. A fuse can be checked visually, but an ohmmeter will detect whether the fuse still conducts electricity if you are in doubt. If the fuse is blown, there may be a problem in the system. Check the appliances on the circuit for signs of damage or defects and check the wiring for possible shorts.

NOTE: **When replacing a fuse, always use a fuse of the same amperage rating -- never higher.**

TV Antenna System

Your coach is equipped with an amplified TV booster. It is located in the overhead cabinet above the driver's seat. The path from the antenna can be followed down to the antenna booster switch. The antenna booster switch will light RED, indicating that the booster is in operation.

This switch also controls whether the system is sending signals to the VCR from the antenna or a cable connection. When the switch is on, the antenna is being selected. A shore cable is in use when the switch is off.

There is a third television outlet located in the basement storage for outdoor program viewing. Like the bedroom outlet, this line is tapped off of the living room television line. Therefore, different channels cannot be viewed on the coach's televisions at the same time.

The output of the booster switch is wired to the input of the VCR, then from the output of the VCR to the TV splitter, which supplies signals to all outlets. This system allows you to view from antenna, cable, or VCR on all three television connections.

NOTE: **Turn the antenna boost switch off when not in use. It will continue to draw power from the batteries even when the television is off.**

Coach Support System

The coach support system's Coach Monitor Panel will keep you updated on your support systems. This panel is located above the dinette in front-entry models and over the entry door on mid-entry models. The Coach Monitor Panel will assist you in overseeing fluid levels in each holding tank and the LP gas tank, and also checking the charge level of the coach batteries.

To operate, depress and hold the selected function switch located on the panel. The panel will display "pump" when the water pump switch is engaged. The coach batteries supply the power for the Coach Monitor Panel. If the monitor does not display any readings, make sure the coach batteries are properly charged.

There is an hour meter near this panel that monitors the run time of the generator. This meter displays the amount of time the generator has been running (for maintenance purposes.) This meter will only display while the generator is operating.

NOTE: **More information on the Coach Monitor Panel is provided in Chapter One of this manual.**

WARNING: **The coach batteries will drain much faster when not using external shore line or generator power. It is wise to conserve energy when your motor coach is using only inverter power.**

CHAPTER 8 – PLUMBING

OUTLINE

Your coach contains a full freshwater plumbing system capable of operating as a self-contained unit or for making use of a pressurized water source. For camping away from amenities, the system has a specially designed pump system that provides constant flow even at low volumes. When a pressurized water source is available, the pump and tank can be bypassed and the system will draw from the source.

OPERATION

Your Safari coach has an outer compartment where all of the water flow is controlled. This system includes several manifold valves, black tank flush, city water inlet, and many other features. The diagram below shows components of the system:

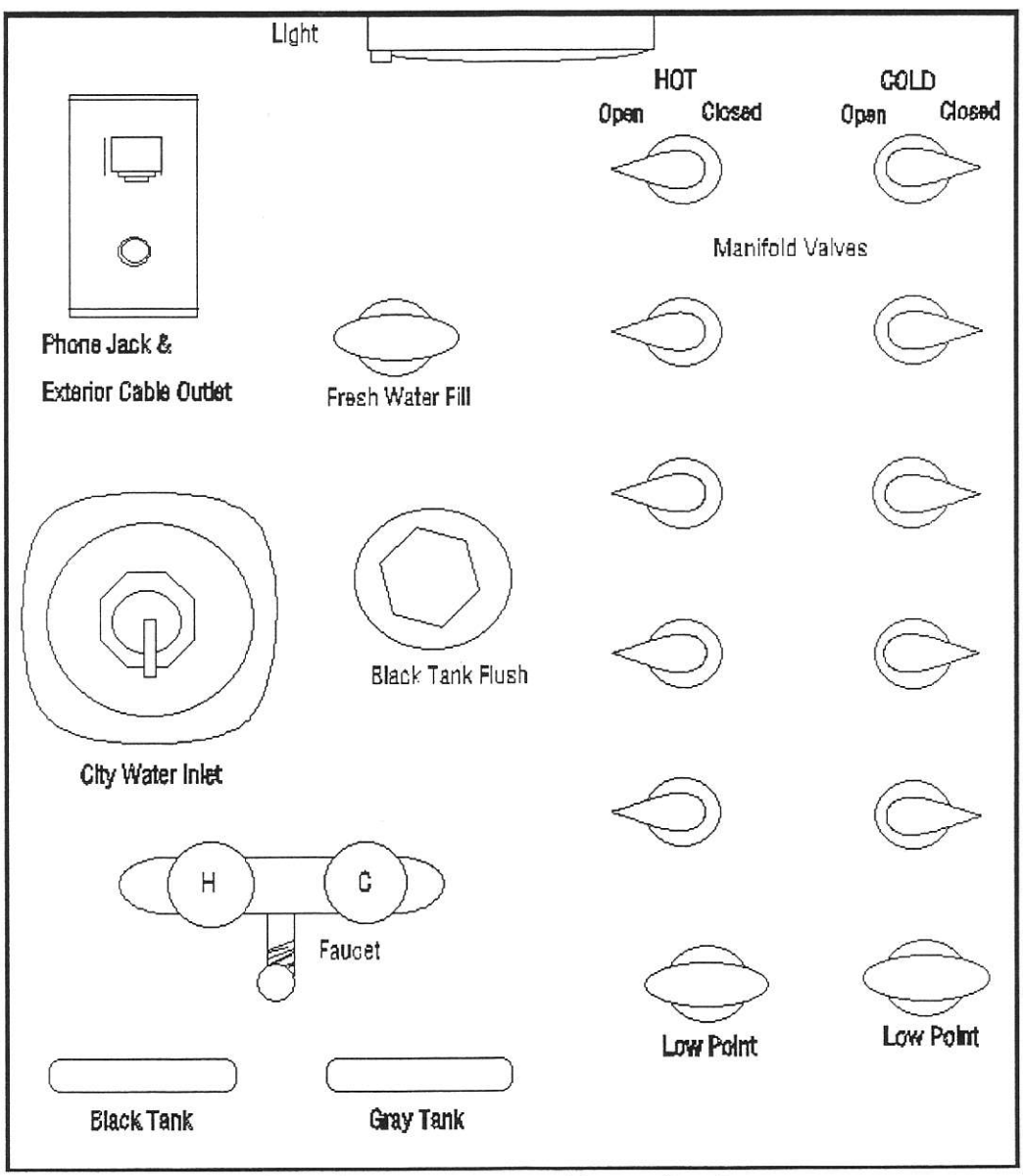

Figure 3: Example of Fresh Water System (Generalized)

The Fresh Water Fill selector valve, near the fill connection, controls whether the outside water source is filling the tank or going directly into the system. When the tank has been filled, the switch should be set to the OFF position to prevent overflow. Regardless of the connection, the water heater or hydronic heating system supplies all hot water.

Using A Connection

To use an outside water source, you must first switch the Fresh Water Fill selector valve located just above the fill spout to the OFF position. When the valve is closed, water flows directly into the coach system. The selector should be ON only to fill the water tank or when using the water tank to provide water. (See next section for details.)

Remove the plug from the fill spout and screw on the hose from the water source. The hose should be clean and rated "for potable water" (fit for drinking). Avoid cheap plastic hoses - they often taint the water with an unpleasant taste. Once the outside water source is applied, the water system is pressurized and is ready for use without any other pump. Water pressure in the system is regulated to a maximum pressure of 50 pounds per square inch (PSI). The regulator is located in the water fill.

NOTE **In some rare instances, the water pressure of a locality may be very high. Inquire locally before using the connection. Pressure over 125 PSI may damage the regulator and the plumbing system.**

NOTE: **Periodically check the city water tap plug for tightness. This plug protects your water system from particles and contamination. It should be replaced immediately if lost.**

Using While Disconnected

Your coach is not dependent on connection to an outside water source. The system is fully capable of self-contained use for extended periods of time. Two things make this possible: the large fresh water tank, and the automatic water pump.

Filling the Tank

Filling the tank requires a pressurized source of drinking water. The following is a step-by-step description of the process:

Step 1.	Connect to an outside water source. Use only a clean hose labeled "for potable water" only.
Step 2.	Open the Fresh Water Fill selector switch.
Step 3.	Turn on the outside water source.
Step 4.	Open all faucets; both the hot and cold.
Step 5.	Allow time for the water heater tank to fill and then shut off each faucet as the flow becomes steady and free of air. With the water heater tank filled and all air expelled from the system, close off the last faucet. The pump will automatically shut down.
Step 6.	Shut off the outside water source.
Step 7.	Close the Fresh Water Fill selector switch or turn the electronic control to the OFF position.
Step 8.	Disconnect the outside water source.

The tank has an overflow spill. When water is emerging from this spill, the tank is full. The water system will hold little or no pressure if the selector valve is left open. Keep the overflow vent pipes from the water tank free from mud and other debris.

You can determine water level via the monitor inside your coach. You must turn the panel on to get an LED reading on the water level. The angle of the coach can directly affect this reading.

NOTE: **Always use clean, potable water. The water system contains a pre-filter to prevent damage to the pump and heater; however, these filters cannot make drinking water from an inadequate source.**

NOTE: **Using the external water connection will not fill the freshwater tank unless the Fresh Water Fill selector valve is open. To allow external water directly into the coach water system, the selector valve must be closed.**

The Water Pump

Your coach features an automatic, self-priming water pump. It is specifically designed to provide consistent pressure even at the low volumes common in a motorhome. The pump uses 12 VDC power.

NOTE: **Do not use any showerhead other than the one installed at the factory.**

The pump automatically starts and stops to provide constant pressure as faucets are opened and closed and appliances are used. The manufacturer determines pump settings. Do not change these settings - doing so will void the pump warranty.

The power switch for the pump is located in the panel with the generator and water heater controls inside your coach.

The pump should be turned off when storing the coach and when using an outside water source through the City Water Inlet.

If the system has not been used for a period of time, air collects in the pipes and prevents pressurizing. The air must be expelled. With the pump on, open every faucet. Close each faucet as water flow becomes steady. Allow time for the water heater tank to fill as well. Do not close the last faucet until the heater is full and the flow is free of air. The pump should then shut off automatically until you again open a faucet.

Turn off the pump if you are going to be away from your coach for an extended period of time, Remember to turn it on again when you return. You will not need to prime the pump or perform any other action to restart the system.

WATER PUMP USAGE	
Use	**Switch should be:**
Outside, pressurized water source	Off
Coach storage	Off
Camping without outside water source	On

Cold Weather Use

The entire freshwater system, including the tank and lines directly from the tank, is located within the insulated and heated areas of your coach. Freezing should not be a factor under normal conditions. However, there are some guidelines that should be followed when operating your coach in extremely cold weather.

The water lines are hidden in closets and cupboards. Make sure that warm air can get to those areas. Keep the doors ajar, and keep the air in the coach circulating adequately.

Do not put anything in those cabinet areas that will prevent warm air from reaching the pipes. Keep the interior of the coach warm.

The tank and some plumbing lines are located in the basement, which is insulated and heated. The forced air furnace and Hurricane systems all supply heat to the basement when the temperature nears the freezing level. The Hurricane system is preset at the factory. The furnace has an adjustable slide-gate on the bottom of the plenum that can be adjusted or closed. In the closed position, heat will not circulate to the basement and freezing can easily occur in cold weather.

Toilet

The toilet in your coach is a self-flushing marine model. It is designed to use as little water as possible, while flushing cleanly and controlling odors. It differs from a home toilet in several ways and there are guidelines to follow for best results.

The inlet to the toilet is connected directly to the fresh water system. A valve behind the toilet allows the water supply to be cut off if necessary. Normally, the flush lever controls water flow. Raising the lever allows water to flow into the bowl.

When flushing liquids, the small amount of water released on flushing is generally enough to rinse the bowl. When flushing solid waste, raise the lever sufficiently to allow enough water to enter the bowl to carry the solids. After flushing, a small amount of water should remain in the bowl.

Pushing the flush lever down opens the ball valve and flushes the toilet. Don't hold the lever down any longer than necessary - it wastes water and allows odors to escape from the holding tank.

WARNING: Only items that will dissolve should be disposed of through the holding tanks. Do not flush paper towels, facial tissue, sanitary napkins, or any similar product. Always use soluble toilet tissue, available at RV supply stores

Clean the toilet regularly with a mild bathroom cleaner. Do not use scouring powder, highly concentrated or acidic cleansers. These chemicals may damage the seals and the finish of the bowl. Do not dispose of anything through the toilet that might be abrasive, caustic, or corrosive.

The toilet is generally a simple and trouble-free device. Some of the more common problems that can occur and possible solutions are listed in the Troubleshooting section. *Consult the manufacturers' operation manual for detailed instructions.*

Shower & Tub

Regardless of whether you have a shower or a tub/shower combination, the operation is the same. You can use the showerhead in the fixed position by leaving it on its holder or detach it from the clip for use as a personal hand shower.

Do not use any showerhead other than the one installed at the factory. There is a volume-control valve located on the showerhead. This is .not the shut-off valve. It can be used to shut off the water flow temporarily and to control the volume of water being used. The water should be shut off at the faucet when the shower is over.

To conserve water, preset the temperature at the faucet. Push the volume control on the showerhead to the OFF position. Then divert the water from the faucet to the showerhead. When you are ready to shower, push the volume control to the ON position and use the control as a tool to save water.

The tub/shower is a gel-coated fiberglass similar to the type found in many homes. (In the Panther and Continental the tub/shower is constructed of Genovese Granicoat.) The tub/shower should be cleaned with a non-abrasive tub and tile cleaner. Use of scouring powder will damage the surface.

WARNING: After using the shower, always turn off the water at the faucet. Keep the shower drain plug locked when traveling.

MAINTENANCE

The water system uses roto-molded plastic water tanks and vinyl tubing, which deliver non-toxic, non-metallic, pleasant tasting drinking water. It is immune to corrosion and rust. To keep your water in drinkable condition, the components must be kept pure and clean. Never introduce anything into the system but clean, potable water (except as noted below for cleaning.)

Flush the freshwater tank as often as possible. The tank has a drain valve located in the basement. Fill the tank partially, then open the valve and let it drain. Continue running water into the tank for a time with the drain open. Then close the drain.

At least once per year, fill the tank completely with a solution of baking soda and water, After fifteen or more minutes drain the tank. Follow this by flushing the tank with clean water.

The pump and pipes require no maintenance, but they should be periodically inspected for leaks or other problems.

Never store the coach with water in the tank. Always drain it completely. The tank, lines, pump, and water heater all need to be drained. To drain the lines, open all the faucets, the shower flow valve, and the low-point drain valve. Give the system plenty of time to drain. Close all valves and faucets when draining has completed to keep debris out of the system.

Every appliance that uses water should also be drained before storage. Most appliances can be drained by using them. For example, use the dishwasher or washer/dryer for a full cycle with the water valves closed. The icemaker can be run until no more ice is made.

The water heater must be drained manually. This appliance is accessible through an exterior access door. Remove the plug and open the pop-off valve. Allow the tank plenty of time to drain. If your coach is equipped with the Hurricane system, refer to the manufacturer's manual for instructions.

We recommend blowing the lines dry with compressed air. First make sure that all the valves are open, and apply the air pressure to the water fill spout, using an air chuck. Do this twice, with the selector valve both open and closed. Make sure that the air pressure is not over 35 PSI. Use a water trap or similar device on the air compressor to prevent the water tank from receiving air tank contaminants such as compressor oil or polluted, condensed water.

NOTE: **Periodically check the overflow pipe of the water tank to ensure it is not clogged with debris. Mud, road materials and even insects can close the vent and may over-pressurize the tank when it is filled.**

TROUBLESHOOTING

Occasionally, problems can occur to prevent the water system from functioning properly. For each problem, a number of possible solutions are offered here:

Water Pump

Problem: The pump does not activate.

Check the power switch on the Coach Monitor Panel.

Check the house battery power level, and the availability of 12 VDC power.

Check the pump fuse in the 12 VDC fuse panel located over the bed.

If in cold weather, inspect the pump head to see if it is frozen. If so, thaw with a light bulb or other safe heat source.

Problem: Pump runs, but water does not appear.

Check the water level in the tank using the Coach Monitor Panel.

Check the "Fresh Water Fill" valve near the City Water Inlet. It should be closed.

Check for air leaks near the pump inlet.

Check for a plugged inlet line. Remove the output line from the pump. If no water appears there, the problem is in the inlet -- otherwise the problem is deeper in the output lines.

Problem: Pump runs, but water sputters.

Check the water level in the tank.

Check for an air leak in the input lines to the pump.

Check the in-line filter for evidence of leakage.

Problem: Pump "cycles" - turns rapidly on and off when a faucet is opened.

Nothing is wrong. The pump is designed to cycle in order to maintain even pressure.

Problem: Pump cycles, but all faucets are closed.

Check for leaky faucets.

Check the toilet valve for leakage.

Check the low-point drain valves to make sure they are closed.

Make sure the Fresh Water Fill selector valve is closed.

Check the water lines for leaks. Fix any leak promptly, no matter how small.

Check the water tank level. If the water supply reaches a low level, the pump will run until the switch is turned off or water is added to the tank.

Place a plug in the output line near the pump, and then turn the pump on. It should stop after a few seconds. If not, there is an internal leak in the pump, and it must be replaced.

If the problem cannot be resolved, you can use the pump switch to manually control the system until repairs are possible.

Toilet

Problem: Water will not stay in the bowl.

Tighten the clamp ring-adjusting nut.

Check the ball valve and underside of the seal for dirt and foreign materials. If necessary, replace seals, flush ball, and half-clamps.

Problem: Water does not shut off after flushing. Toilet overflows.

Disassemble and clean the water valve.

If the valve is defective, replace it.

If the spring is defective, replace the spring, cam, and plate with a new spring cartridge.

Problem: Water leaks from the water valve.

Tighten the bottom cap, inlet fitting, and outlet hose clamp.

If necessary, replace the water valve.

Problem: Water leaks from bottom of toilet base.

Tighten the toilet mounting bolts.

Replace the rubber seal between floor flange and the base.

Replace the base assembly or floor flange.

Problem: Water leaks from the rear of toilet bowl.

Tighten the hose connections.

Tighten the vacuum breaker-to-bowl connection.

Replace the vacuum breaker assembly.

Replace the toilet bowl

Problem: Foot pedal is difficult to operate or rotating hemisphere sticks.

Apply light film of silicone spray to the blade of the rotating hemisphere.

CARE & CLEANING

The sinks, counter tops, and tub/shower fixtures are simple to care for. Use a mild soap/water combination to clean their surfaces. A commercial glass cleaner can be used on the glass shower door.

The tub/shower fixture is a gel-coated fiberglass similar to the type found in many homes. (In the Panther and Continental the tub/shower is constructed of Genovese Granicoat.) It should be cleaned with a non-abrasive tub and tile cleaner. Use of scouring powder will damage the surface.

Clean the toilet regularly with a mild bathroom cleaner. Do not use scouring powder, highly concentrated or acidic cleansers. These chemicals may damage the seals and the finish of the bowl. Do not dispose of anything through the toilet that might be abrasive, caustic, or corrosive.

NOTE: **The sinks, tubs and shower basins in Safari coaches are made of stainless steel, fiberglass, or other composite materials. For specific information on care see the manufacturer's operations manuals or the Appliance section of this manual.**

CHAPTER 9 – LP GAS

OUTLINE

Liquid Propane Gas, or "LP gas", is an extremely clean and efficient fuel. It is safe, economical, and provides modern living conveniences no matter where you travel. It burns cleanly and packs a tremendous amount of energy in a small container. It is an ideal fuel for RV appliances and is often used in cooking, heating, generator power, and refrigeration.

LP gas is an invisible, odorless gas. For storage, it is compressed until it becomes liquid. It can be purchased at many service stations and from dealers in residential fuels. It is comparatively inexpensive and easy to find. It is not the same as natural gas, and natural gas should never be used as a substitute.

Since LP gas is normally odorless and invisible, a chemical is added to give it a distinctive garlic-like smell. Learn this odor and make sure every person staying in the coach is familiar with it.

LP gas is heavier than air. Thus, if it is released into the atmosphere it will settle to the ground. In a closed area it can linger for hours, rather than dissipate. It burns readily and yields a great deal of energy. The improper use and handling of LP gas always presents a hazard.

WARNING: Avoid inhaling LP gas. LP gas is potentially lethal.

WARNING: LP gas is extremely flammable. If you smell LP gas, do not strike a match or start a flame. Extinguish cigarettes or any open flames. Ventilate the area thoroughly, until no odor remains. Identify the source of the gas as quickly as possible.

COACH USE

LP gas is stored as pressurized liquid in your tank. This pressure ranges from 40-200 lbs. per square inch, depending on external temperature. Before it can be used as a fuel it has to return to its gaseous state. In your coach, special valve systems called *regulators* serve to supply gaseous fuel to the appliances, while the tank supply remains a compressed liquid. The regulator reduces the pressure to less than one pound. When the liquid gas hits the atmosphere, it expands to many times its original volume and turns into a gas vapor. This vapor is used for cooking, heating, and refrigerating goods.

Not all LP gas is the same. There are two main components of LP gas, propane and butane, and they can be blended in any proportion. Butane is the less volatile, and cannot be used in temperatures below freezing. Propane can be used in temperatures well below zero degrees Fahrenheit. If you plan on camping in cold weather, be sure to use gas containing a high proportion of propane.

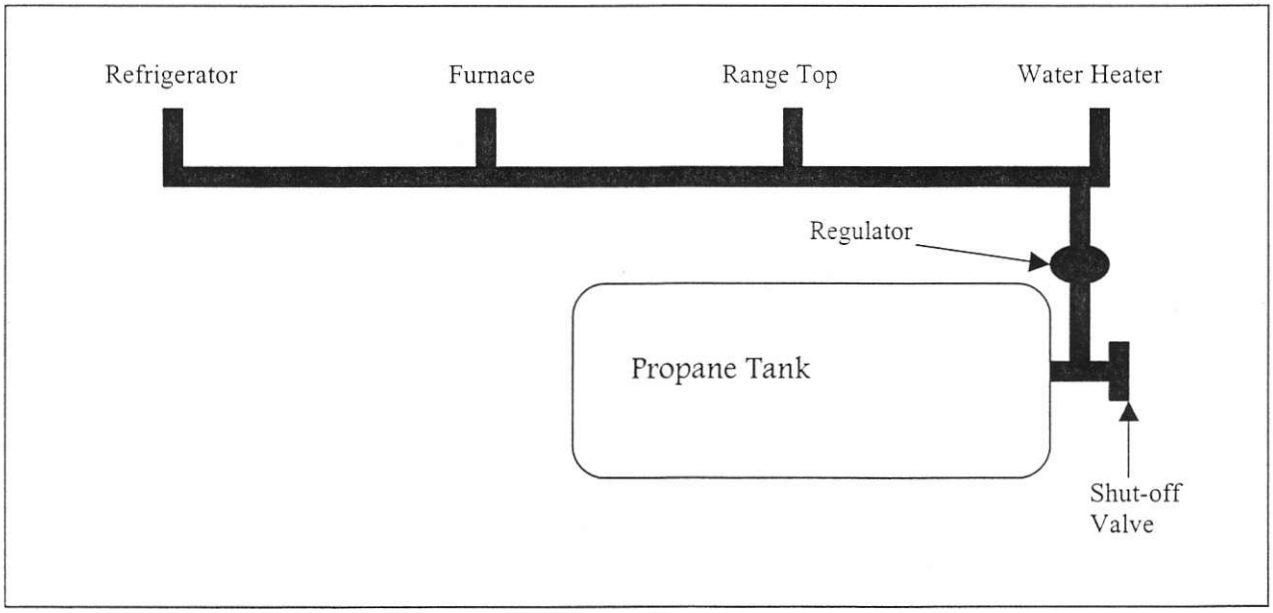

Figure 4 Example LP Gas System (Generalized)

SAFETY PRECAUTIONS

If LP gas is mishandled or if the system is not maintained properly, the results can be disastrous. Always follow the safety precautions listed below and keep your system in perfect working order. Do not tamper with the LP gas system, pressure regulators or appliances. Check with the factory before drilling holes or attaching objects to walls or floors as gas lines may be seriously damaged.

A qualified technician should do any repairs, alterations, modifications, or additions. Whenever the piping has been opened, it must be checked for leaks. Periodically have the LP gas supplier check the system for possible gas leaks or missing/damaged parts. Practice safety at all times. If you have questions about the operation of your appliances or LP gas system, contact your local LP gas dealer or RV service center.

WARNING: If you smell the garlic-like odor of LP gas in your coach, immediately do the following:

- **Extinguish any open flames.**
- **Open all windows.**
- **Do not operate any electrical switches - including the fan.**
- **Turn off the vapor valves on the LP gas tank.**
- **Leave the coach. Do not return until the gas has dissipated. Remember that the gas will linger near the ground.**
- **Call a service center, dealer, or gas supplier. Have the system checked and the leak corrected before using again.**
- **If the odor is outside the coach, most of the same procedures apply. Shut off the gas supply at the tank and get assistance.**

NOTE: Whenever using the gas range, turn on the exhaust fan or open the overhead vent to allow fumes to escape, and open nearby windows. Never use portable cooking equipment, such as wood or charcoal grills or gas camping stoves, in your coach. Such equipment is a fire and safety hazard.

THE LP GAS TANK

The LP gas tank is usually located in a compartment behind the front tires on the driver's side of the coach. (In the Trek, it can be found on the passenger's side. The Trek Vortec gas-powered unit uses a different gas generator.) The tank has four valves - a fill valve, a pressure-relief valve, a vapor valve and a liquid valve that connect to the generator. It also has a gauge that indicates the current amount of fuel in the tank. The fill and pressure-relief valves are used only when filling the tank, and should not be handled any other time. The vapor valve controls the supply of gas to the appliances.

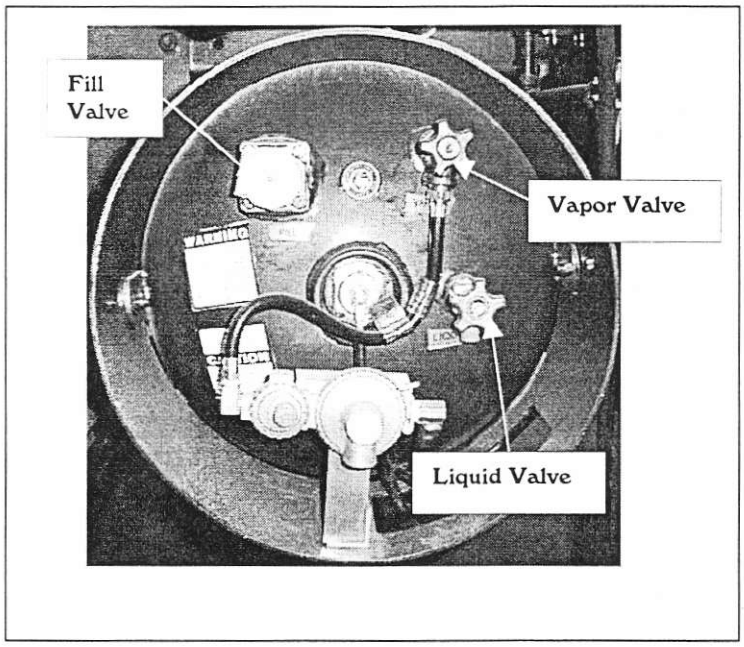

Figure 5 Example LP Gas Tank

NOTE: Do not replace the tank furnished with your unit without first checking with the factory.

WARNING: Never store LP gas tanks inside your coach or in storage compartments. All tanks have a pressure-relief valve that may release gas into the atmosphere. Tanks should be kept only in well-vented areas and only be used by the person filling the tank.

Filling Procedure

Before filling the tank, make sure that all pilot lights are off, and that the engine and generator are not running. The vehicle should be level. The technician filling your tank should be trained in the full procedure.

To allow for heat expansion, the tank can only be filled to 80% of its capacity. Manufacturers of LP gas tanks are required to install a relief valve that will stop flow into the tank at 80% capacity. A tank that is overfilled can cause system freeze-ups, uncontrolled gas flow, and possibly fire or explosion.

WARNING: Before filling the tank, make sure that all pilot lights are off and the engine and generator are not running. The LP gas tank can only be filled to 80% of its capacity. A tank that is overfilled can cause system freeze-ups, uncontrolled gas flow, and possibly fire or explosion.

NOTE: The fill valve is spring-loaded and will close automatically. Do not disconnect any of the LP gas hoses as moisture can enter the system and cause it to malfunction.

Vapor Valves

The vapor valve controls the flow of gas to the appliances. A regulator is mounted on the main line to the appliances. The liquid valve controls the flow to the generator and is absent from coaches with diesel- powered generators. Both valves should be closed when filling the tank. They should also be closed when the appliances are not going to be used for an extended period of time to prevent moisture from collecting inside.

When opening the vapor valves, always follow this procedure: slowly open the valve until vapor fills the line. Open completely, then close it one-quarter turn. There is an excess flow check valve that stops the flow if you open the valve too quickly. By closing the valve slightly, it is easier to tell whether the valve is open or closed.

If only a small amount of gas flows into the line, close the valve completely and try the procedure again.

WARNING: Never use a wrench or pliers on any of the LP gas tank valves. They are designed to close completely by hand. If tools are necessary to stop the flow, the valve needs to be repaired or replaced.

Regulators

The regulators control the flow of gaseous fuel to the appliances. They are mounted by the vapor valves on the tank. You should inspect them every time the tank is filled.

Each regulator has a protective cover. Make sure that the cover is in place and that the regulator vent is not blocked. The regulator vent should face downward, and should be free of mud, ice, insects, or other debris.

WARNING: **Only trained service personnel should install or service LP gas equipment. Replacement equipment must meet specifications set by the factory. Consult with the Service and Warranty department before installing new equipment.**

Moisture in the system can cause the regulators to "freeze up" and block the gas flow. Therefore, it is important that moisture never be allowed to enter the system - even in minute quantities. If moisture does enter the tank, the system must be purged.

Other problems can cause the flow to cease, as well. If the 80% valve malfunctions, overfilling the tank will cause liquid fuel to pass through the regulator. The pressure will become irregular and the appliances will function improperly or not at all. It can also cause the regulator and gas lines to become frosty. If any of these conditions exist, have the system serviced immediately.

NOTE: **If the generator is diesel, the tank will only have one regulator and vapor valve.**

MAINTENANCE & TROUBLESHOOTING

Proper maintenance is essential for the safe operation of your system. Do not allow the system to fall into disrepair.

LP gas is not corrosive, so you generally don't need to worry about the inside of your tank and gas lines. However, the exterior of these components should be maintained. The following procedures will help keep your system functioning properly:

- Inspect the lines and fittings regularly for signs of corrosion or dents.
- Periodically check for leaks. To check a fitting, apply very soapy water and look for bubbles. Make sure to do this before and after long or rough trips. *Do not use any product with ammonia, chlorine, or other corrosive chemicals.* The tank should be protected from rust by a periodic application of good paint.

WARNING: Do not use a match when checking for leaks in the LP gas system.

Many common problems have simple solutions. Some of these are listed below. If you are unable to solve a problem, take your coach to a service center, dealer, or fuel supplier to be inspected by trained personnel. *The LP gas system should only be serviced by qualified, trained technicians.*

The following problems and solutions are some of the more common ones that may be encountered. Practice safety at all times. If you have questions about the operation of your appliances or LP gas system, contact your local LP gas dealer or an approved service center.

Problem: Gas flow is very slight.

Close the vapor valve and slowly reopen. The excess flow check valve constricts gas flow if it is opened too quickly.

Problem: Gas does not seem to reach appliances. Generator will not run; pilot lights will not light.

Check the gas level in the tank.

Check to make sure LP detector is on.

Check to make sure that the vapor valves are open. Close them and open again, following the procedure above.

Check for debris or corrosion on the regulators. If any is apparent, take the coach to a service center for repair.

The problem may require a trained technician. Moisture in the tank may have "frozen" the regulator, and requires purging. Take your coach to a service center.

Problem: Gas flow is inconsistent.

Check for debris or corrosion on the regulators. If any is apparent, take the coach to a service center for repair.

Although unlikely, an overfilled tank could cause this problem.

Moisture or a faulty regulator can cause this problem. Take your system to a service center.

WARNING: Do not attempt repairs on your own. A trained technician should complete all repairs.

CHAPTER 10 – MAINTENANCE

OUTLINE

Every Safari coach is designed to be the highest quality, most durable product on the market. Your coach will provide years of superior use with proper maintenance. Regular attention is essential to the enjoyment of your investment.

In addition to the information presented in this manual, all appliances and equipment have manufacturer's manuals in your warranty package. Engine and chassis maintenance is detailed in the chassis manual. Please refer to these manuals to learn operating details, troubleshooting and maintenance procedures.

EXTERIOR MAINTENANCE

The exterior of your coach is designed and constructed to be a durable, protective shield for the interior. It protects your coach from the environment and prevents water from entering your coach and damaging its contents. It is attractive, easy to maintain and time spent cleaning and inspecting is minimal.

After every trip you should wash the exterior of your coach. Use mild soap and water - never an abrasive cleanser. Be careful not to spray water directly into louvers and vents. While you are washing the coach, check for damage to the skin, caps, skirts, and moldings.

If you use a tar or road oil remover, make sure that the product is safe for painted surfaces.

WARNING: In the first thirty days that you own your coach, do not use an automatic wash. Stiff brushes or sponges may damage the surface. Do not wax or polish the coach for the first sixty days.

Some coaches are coated with a very durable polyurethane paint and acrylic urethane clear coat. No wax is necessary. For the first six months to a year all that the coach will need is to be washed occasionally. After that, you may wish to polish the coach every other year to keep it looking it's best. Use a good polishing compound, not a wax.

Some coaches are finished with a polished gel-coat. These coaches need to be washed with a good car wash and a soft mitt. Then, at least four times a year, it should be waxed with a good boat wax for maximum protection. Do not use any wax that contains petroleum distillates.

When cleaning the exterior, do not neglect the exposed metal. Usually all that is necessary is the same soap and water solution used on the rest of the coach.

Do not use chrome polish on any metal except chrome, and never use steam, caustic soap, or auto polish on the aluminum parts. On aluminum you may use a tire sidewall cleaner, but rinse thoroughly with clean water.

Moisture enters locks, hinges and crank handles and then may freeze. As the temperature drops, oil and grease begin to thicken, making operation difficult. Eliminate such problems by using powdered graphite for lubrication instead of a petroleum lubricant. Squirt the powder into locks, hinges, and cranks and then wipe away the excess.

The window tracks should be inspected and cleaned along with the rest of the coach. If the windows do not open easily, clean the tracks with water and a small stiff brush. You can lubricate the tracks with a silicone lubricant.

Pressure Washer

The Continental and the Panther are equipped with pressure washers. There are two outlets, one located in the front, driver's side bay and the other in the rear, passenger side bay. The following steps detail how to use the pressure washer.

1. Connect outside water source to City Water Inlet in water service bay. (See Plumbing chapter for details.)
2. Connect power cord located in engine compartment to 120 volt power source.
3. Connect pressure washer hose into pressure water outlet.
4. Pressure washer is now ready to use. Remember to disconnect power cord and hose when you are finished.

Inspection

While cleaning your coach you should also inspect the exterior for damage and leaks. Any flaw that might allow moisture to penetrate the exterior should be repaired promptly. Fixing a leak is generally much cheaper than fixing the damage the leak can cause.

Almost all leaks occur at seams, such as around the windows, skirts, or caps. All of these must be carefully inspected for signs of problems. Look for bent moldings and flanges, missing or loose screws and rivets, and sealant that has cracked, peeled, or separated.

Check each of the following areas for problems:

- ✓ *On the roof, where the caps meet the roof skin, and around vents and air conditioners.*
- ✓ *On the walls, where wall skin meets the skirts, roof, cap, and other skin pieces.*
- ✓ *Around every window, vent, utility door, and entry door.*
- ✓ *Inspect the waste holding tank piping and termination.*
- ✓ *The cargo areas. (Designed to resist water, but they are not waterproof.)*

INTERIOR MAINTENANCE

The interior of your coach will benefit from regular care. For the most part, maintaining the interior of your coach is much like maintaining a home. Most products needed for cleaning can be purchased at a grocery store. *When using stain removers, always test an inconspicuous area first.*

Cabinetry

Wooden surfaces should be cleaned with non-abrasive wood cleaners. Occasionally, you may wish to apply a liquid spray wax. Humidity is the greatest enemy of wood. Your coach has cabinets made of solid hardwoods that are resistant to humidity damage. However, when storing your coach in a humid climate, use a dehumidifier to help safeguard the wood.

Countertops

Genovese and Fountainhead counters are built to be durable and beautiful. To prevent scratching, all counter tops should be cleaned with a non-abrasive cleanser. *Do not put hot pots or pans directly on any counter top.* Scratches in Genovese or Fountainhead can be removed by careful buffing. The proper buffing materials can be purchased in home centers and cabinet supplies shops.

Furniture

Your upholstery can usually be cleaned with mild soap and water. Vinyl can be cleaned with vinyl cleaner. When using a stain or spot remover, place a cloth on the underside of the fabric wherever possible. This way, if color bleeds, it will bleed into the cloth rather than into the fabric. *For stubborn stains, consult a professional cleaning service.*

For UltraLeather and UltraSuede, daily care requires only wiping off the dust and dirt with a soft, dry cloth. Occasionally, UltraSuede needs light brushing with a medium-bristle brush. These synthetic materials are durable, stain resistant and require very little care. Spots are easily lifted with a mild detergent - for tough spots a mild cleaning fluid may be necessary. *For information on specific types of stains and their removal, see the manufacturer's instructions.*

Bathroom Fixtures

The tub, sink, and toilet in the bathroom have either a gel coat or a Genovese finish. These can be cleaned with a liquid cleanser. *Do not use scouring powder, it will scratch the surface.* Brass fixtures can be wiped with a clean, dry cloth to prevent water spotting. Shower glass enclosures can be cleaned with glass cleaner when needed.

Dash & Plastics

Your dash is covered with vinyl. Vinyl should be wiped down with a damp sponge and if needed, a diluted household cleaner.

Plastic surfaces, like those on your stereo unit or VCR, need special care to prevent scratching. Use a good quality plastic polish. Follow the instructions on the container. For everyday dusting, wipe with a clean, dry cloth. *Never use paper towels to wipe the surface, as they are abrasive and will scratch the finish.*

Walls & Ceilings

The vinyl wall and ceiling coverings should be wiped down with a sponge dampened with a mild soap/water solution. Use only a minimum amount of water to avoid water spotting. *Never apply or spray full strength cleaner directly onto the surface.* It could damage the fabric.

Doors & Hinges

If the bedroom door panels become hard to slide, lubricate both the upper and lower tracks using a silicon auto wax or lubricant that will not leave a residue. You can use furniture polish as well.

If the cabinet doors are out of adjustment, it is easy to realign them by adjusting the hinges. The special Euro-style hinges are not screwed into the wood of the cabinetry; instead they are more like a clamp that can be adjusted by loosening the hinge with the single screw, aligning the door as necessary and tightening the screw.

Carpet

Top-quality, residential, stain-resistant carpet is used in all Safari coaches. Clean them as you would carpets in your own home. Normal vacuuming is sufficient on a day-to-day. Consult a professional carpet cleaner to shampoo the carpets. If stains occur, clean immediately by blotting the area with soap and water. If the stain persists, consult a professional carpet service or your carpet manufacturer listed in Appendix A.

Tile & Grout

The tile flooring in your coach is easy to care for. Simply sweep dirt and wash with a solution of mild soap and water. Do not use abrasive or caustic cleaners on the tiling.

Wood Floors

Clean the wood floors in your coach by vacuuming or sweeping when dirty. Use a damp sponge mop to wipe away dust and spills. Once or twice per year, use a non-abrasive floor cleaner with a damp sponge mop to dress coat the floor and return its natural luster.

WARNING: Always make sure to ventilate the coach by running the roof fans or opening doors or windows when using any cleaners, polish or lubricants inside the coach.

CHASSIS MAINTENANCE

With the exception of the Trek (Chevy P-32), all class A Safari coaches are built on a Magnum chassis. The class C is built on either a Chevrolet or Ford chassis. Regardless of the manufacturer, chassis manuals are included in your warranty package. This section outlines the enhancements Safari has provided and highlights important topics from the chassis manufacturer's manual. It is not a replacement. Read the manual provided by the manufacturer, and keep it handy for reference and for service information.

A full service schedule is included in the chassis manual. This guide should be kept with the coach and reviewed regularly. The schedule includes daily and weekly vehicle checks and routine maintenance every 6,000 miles.

Daily inspections:

- Check fuel/water separator.
- Check coolant level.
- Check transmission fluid level.
- Check engine oil level.
- Check tires for pressure and unusual damage.

Weekly inspections:

- Check belts for proper tension.
- Check power steering fluid.
- Check engine fan.
- Check batteries.
- Check brake master cylinder fluid level.

Every 6,000 miles:

- Check air intake system for damage
- Check steering box for leakage.
- Check hydraulic fluid reservoir level, and inspect lines.
- Check air filter minder. If red, replace air cleaner.
- Check rear axle lubricant level.
- Lubricate front axle king pins, steering linkage, drive shaft, U-joints, and slip yoke.

Regular scheduled maintenance should be followed at 12,000, 18,000, 42,000, and 100,000- mile intervals. Please refer to your chassis manual.

Generator

Whether LP Gas- or Diesel-powered, your generator contains a complete engine, which has the same kind of maintenance requirements as any engine. This includes lubrication, inspection of coolant level, and other procedures listed in the generator manual. The Coach Monitor Panel includes a clock that displays the hours of usage for the generator. Monitor the clock, and *perform the maintenance operations required by the schedule in the manual.*

LP Gas

Never neglect your LP Gas system. Regularly trace the lines and look for flat or kinked spots. It is wise to inspect and test the system before and after long or rough trips. Make sure that cargo cannot crush or damage the lines. Finally, turn the gas on and check each fitting for leaks. Wipe each fitting with very soapy water and look for bubbles. Read the chapter on LP Gas for further instruction.

Battery Care

Batteries also require maintenance on a regular basis. Your coach has two sets of batteries - one set for the house 120 VAC requirements, and one set for the engine. Remember to check both sets regularly. Identify each battery cable to be positive or negative before making any connection. Always connect the negative ground cable last.

Make sure that each battery is clean and dry, and that all connections are tight and free from corrosion and oxidation. You should remove the cables from the terminals and clean both the cables and the posts with a battery brush on a monthly basis. A light application of petroleum jelly or mineral grease will help reduce corrosion and oxidation. Check that each battery has the proper electrolyte level, and if necessary add distilled water. Never add sulfuric acid or other electrolyte to the battery - it is the water that evaporates not the electrolyte. Finally, make sure that the batteries are charged, especially before storing the unit.

Fuel

The engine is designed to run on Grade 2 or 2-D climatized diesel fuel. Diesel fuel is rated by 'cetane' number. This should be no less than 40. In cold climates or high elevations this rating should be 45 or higher.

A separator located in the service bay removes water in the fuel. This should be checked daily, and drained when necessary. A clear bowl allows you to see how much water has been collected. A small knob on the bottom allows you to drain the water until the bowl contains pure fuel. The separator also contains a filter that should be changed regularly.

Tires

While you are inspecting the rest of the exterior, you should also pay attention to the tires. Tires are crucial for safe and comfortable driving, and also can indicate problems with the suspension. At least monthly, and certainly before any long trip, they should be inspected.

WARNING: The most common cause of tire failure is improper inflation. A plate in the interior of your coach lists the correct pressures. Check the pressure of each tire and add or remove air until it is somewhat below the recommended pressure. This should be done while the tires are cold. Driving will warm the tires and increase the tire pressure to the recommended level.

Check the tread of each tire. If the tread has worn to less than 1/16", have the tire replaced promptly. Check for abnormal wear patterns. The tire should wear evenly across. If the wear is not even it can indicate improper balancing, alignment, inflation, or bearing wear. Take your coach to a service center for maintenance.

If there is any damage to the tire, such as cuts, bulges, or peeling tread, replace the tire immediately. Remove any rocks lodged in the tread. Check for loose lug bolts.

Even standing still, your tires can age and wear. Your tires have two major enemies - sunlight and unchanging weight. The ultraviolet rays in sunlight age the tire and cause dry-rot of the tire walls. Unchanging weight creates weakened flat spots. If your coach will sit for any length of time, cover the tires with cloth or cardboard. Use jacks or levelers to reduce the load on the tires when practical. Rotating the tires to a different position periodically is also recommended to avoid a flat condition on the tires. When replacing tires, always select a tire of the same size and specifications.

The front end of your coach was professionally aligned prior to leaving the factory. Remember, cargo loaded into your coach affects wheel alignment. Therefore, before your first trip, you should load your coach - complete with all the fluids, diesel, propane, food and gear you will need - and then have the coach realigned. GVWR (gross vehicle weight rating) and GCWR, (gross combined weight rating), plus the distribution of the load, make a difference in the alignment of your coach. Tire tread worn lopsided indicates realignment needs. Do not ignore these signs. Have an approved service center check your vehicle once each season for alignment and tire balance.

WARNING: Special equipment is required to change the tires on your coach. Only a qualified professional should change tires. The lug nuts are tightened to over 450 ft-lb. of torque - far more than any standard torque wrench provides. After a tire has been installed, have the lug torque checked at approximately fifty miles and again after 500 miles.

World Transmission

The Allison World Transmission in your coach is a highly sophisticated, electronically controlled automatic transmission. There is a push-button panel to the left of the driver's seat. It is operated like a typical automatic transmission only with a push button control. However, unlike most automatic transmissions, this unit contains sophisticated electronics that evaluate every situation and actually "learn" the most efficient shifting pattern to match your driving.

For normal driving simply press the button for the mode corresponding with the proper gear. Pressing the "N" puts it in NEUTRAL, "R" in REVERSE, and "D" in DRIVE. The transmission will not shift into REVERSE if the coach is moving forward. The arrows allow you to upshift or downshift while in DRIVE. The transmission automatically prevents shifts that might be damaging.

The same panel contains status lights to indicate the presence of a problem. If any of these lights are lit, consult the chassis manual or an authorized service center immediately. The safeguards in the system may prevent certain shifts from occurring, and it will attempt to protect the transmission from further damage or problems. For CRUISE CONTROL instructions consult your engine manual.

Coolant

Your coach has a coolant expansion tank mounted above the engine. Access the coolant tank through the rear grill. It is through this tank that you should check the coolant level and add more liquid if necessary. A sight glass on the tank lets you determine whether the level is sufficient without opening the tank. If no liquid appears in the window, then you should add coolant.

To add coolant, first open the tank and add the coolant to nearly fill the tank. Replace the cap on the tank, and then close the bleeder valves.

WARNING: Do not add coolant through the fill on the radiator. Hot liquid or vapor can escape and cause severe burns or injury when opening the radiator. Always add coolant through the expansion tank above the engine.

CHAPTER 11 – STORAGE

OUTLINE

We generally think of our garages and storage areas as havens for our coaches - free from the stress and strains of use. We expect the coach to emerge from storage in perfect condition and ready for the next adventure.

This is possible. You can store your coach for long periods of time and retrieve it in a condition similar to when you left it. However, it requires preparation and knowledge of the problems long-term storage presents. Your coach will face humidity, temperature changes and the erosive effects of time. If stored outdoors, these effects will be magnified -- plus it will face wind, rain, snow, and sunlight. Most likely it will not be inspected regularly or as well maintained as when it is in active use.

To keep your coach in proper condition you must make preparations. The first thing to consider is the storage area itself. Obviously an inside area is preferable to any outside storage. In larger communities there are commercial storage areas available for rent. Regardless of the price, it is definitely worth the investment for the preservation of your coach.

A heat source is also valuable since it will help control condensation and prevent mildew.

Make sure that you inspect the coach regularly. Many of the problems that occur during storage are easily fixed if caught early. Follow the same inspection routine you use when on the road. Be sure to be alert for leaks, water damage, and mildew. You will also want to run the engine briefly, along with the dash and roof air conditioners, and generator.

Properly prepare your coach for storage. Full directions are given in this chapter. Many service centers will prepare your coach for a reasonable fee.

WARNING: **Your warranty does not cover damage due to neglect or natural causes during storage. You are responsible for maintenance of your coach during storage.**

STORAGE PREPARATION

The following sections detail, by system, the procedures needed to prepare your coach for long-term storage.

Plumbing

The most important system to prepare is your plumbing. Even if freezing temperatures are not expected, we still strongly recommend you prepare for the worst.

There are two ways to winterize your plumbing: drain the system completely, or add a potable (fit for drinking) anti-freeze. Draining is easier and more reliable for almost all situations.

> WARNING: **Use only potable anti-freeze approved for use in RV water systems. Never use automotive, windshield, or any other non-potable anti-freeze.**

To drain your system, start with the water tank. Open the tank drain valve and leave it open. When empty, start the water pump and open several faucets. Run the pump until no more water comes out. In coaches not equipped with the Hurricane Hydronic Heating System, be sure to shut off the water heater. The switch is usually on the cabinet face under the galley sink.

Open the low-point drain valves and all hot and cold faucets in the water system service bay. Open the shower flow valve (on the showerhead) and place the showerhead on the shower floor to drain. Drain the water heater by removing the drain plug. Allow the water to drain completely with all hot water faucets open. Care must be taken to avoid hot water burns.

Make sure to drain every appliance that uses water: dishwasher, icemaker, and washer/dryer. Operate the dishwasher and washing machine at least one cycle with the water supply shut off. Drain the icemaker water line from the access panel outside the coach near the refrigerator. Open the flush valve on the toilet and leave it open. See the manufacturers' manuals for details.

Finally, if possible you should blow the lines out with compressed air. Insert a compressed air source - no more than 35 PSI - to the city fill connection. Be sure to use a water trap or similar device to prevent entry of contaminants from the air tank into the water system. Make sure that all faucets and valves, including the toilet, are open. No special adapter is necessary. However, you may wish to purchase an air chuck for this purpose, available from most RV stores.

Wastewater System

Preparing the waste systems has two goals - damage prevention and odor control. Empty the tanks, as you would normally, at a dump station. The black holding tank is cleaned by flushing it out with a garden hose attached to the flush fitting. The grey water holding tanks can be flushed by turning on your faucets. One method to rinse both black and grey holding tanks is to fill them at least 1/2 full with clean water and one cup Trisodium Phosphate. Drive the vehicle a few miles to agitate and dissolve any residual solids and then drain the tanks completely.

Every sink, shower, and equipment drain should be flushed with a hot soapy water solution, then rinsed. A cup of potable RV anti-freeze should be added to each "P" trap in each sink and shower. The tanks should be rinsed. If possible, add a chemical deodorant to the black waste tank and allow it to stand for several days. Then completely drain and rinse each tank.

The sewer termination assembly should be cleaned. The knife valves should be lubricated with light oil. The toilet valve should also be lubricated.

Other Systems

Before storing your coach for extended periods of time, add an algaecide to the diesel fuel system.

Your LP Gas system requires virtually no maintenance. Simply turn the flow valves off. Do not attempt to drain the system.

The generator requires the same type of attention as any engine. A full schedule of maintenance requirements is given in the generator manual.

Your roof air conditioners should be operated occasionally to ensure the compressor seals remain lubricated. The dash air should be turned on for a few minutes while the engine is running.

There is a "Coach Power" switch on your stairwell that shuts off 12 VDC power from the house batteries. By setting this switch to the OFF position, you can avoid draining these batteries. Be sure all batteries are fully charged before long-term storage.

If the coach is stored for a short period (two weeks or less) plug it into external power. This will retain a full charge on the coach batteries. For extended periods, disconnect the cables on the batteries.

WARNING: Be sure all batteries are fully charged before long-term storage.

Moisture Problems

One of the most common and expensive problems that can arise during storage is moisture damage. When in storage, leaks can go undetected, condensation can collect, and temperature extremes can increase moisture damage. Your entire coach is vulnerable. Fabrics can become mildewed.

Cabinetry can swell and split. Walls, if penetrated, can rot and warp. Any of these problems can be expensive to repair and are not covered by your warranty. Fortunately, moisture problems can easily be prevented with just a little foresight. There are three factors that cause or contribute to moisture problems. All of these are best controlled if you keep your coach indoors.

WARNING: Outdoor storage of a coach is not recommended for long-periods of time.

Water's first path of entry is a leak. Leaks obviously open the walls and interior to penetration by rain, snow, or dew. Therefore, inspect the coach for leaks before storing it, and check it periodically during storage.

Temperature fluctuations increase the amount of condensation and make wood more vulnerable to damage. Below freezing temperatures are particularly hard on your coach. Therefore you should strive to maintain a constant temperature in your coach. *Do not attempt to use the coach furnace for this purpose.*

Humidity is the source of condensation. The primary defense against humidity is circulation. If you are storing your coach in a climate-controlled area, open all the doors, cabinets, closets, and drawers to allow air to move freely through these confined spaces. Slightly open at least two windows so air can move through the coach. Inspect the coach regularly for signs of condensation.

After Storage

When you are ready to take your first trip after storage, your coach will be ready and in proper condition for your travels with minimal preparation. See the Travel chapter for details.

CHAPTER 12 – SERVICE & WARRANTY

OUTLINE

Safari Motor Coaches wants to make sure you receive a quality unit that will serve you with a minimum of problems; however, your coach contains thousands of components, assembled by hundreds of technicians, with countless procedures. These components are subjected to conditions far harsher than any found in stationary housing. They face quality assurance procedures that test vibration, dust, and extremes in temperature and humidity. Occasionally, some problems will arise. If they do, your coach is backed by the quality of SMC Corporation.

SMC has a full service program designed to take care of you and your coach. The cornerstone is the Service and Warranty department, and its fully equipped service center. In addition to working on your coach, they can give technical advice over the phone and arrange for service by other centers across the country. They take pride in serving you.

To get the most from our service system, there are a number of things you should know. This chapter outlines our procedures and gives many recommendations for you to follow when something happens to you on the road.

NOTE: **Please fill out <u>all</u> of the warranty registrations that come with your coach, especially the Safari Motor Coach registration form. We cannot authorize any service under warranty without the registration, nor can most of our vendors.**

OBTAINING SERVICE

If your coach needs service when you are home or on the road, there are SMC Authorized Service Centers located across North America. If an appliance in your coach needs service, the SMC service center will also act in your behalf to make or arrange for repairs on most of the appliances under warranty. See the Appliances section of this chapter for details. There is a listing at the end of this chapter of the manufacturers' service and warranty phone numbers in case you wish to contact the manufacturer directly.

SMC Service Center

SMC Corporation supports three fully equipped Factory Service Centers for both warranty and non-warranty service. One is located near corporate headquarters in Harrisburg, Oregon. There is another on the west coast in Bend, Oregon, and one the east coast in Dover, Florida. These centers work by appointment only. You can make an appointment by calling the numbers listed at the end of this chapter.

The Factory Service Centers are very popular, especially during the summer. Please call well in advance for service. Drop-ins cannot be accommodated.

The Service Centers also provide service at major rallies across the country. Crews from the factory provide as much service as possible in the limited time allowed. This service is free, but there is a charge for parts out of warranty.

Technical Support

SMC Technical Support is a valuable source of advice and information for you and for technicians working on your coach. If another service center needs specific information on a product, they can obtain it by calling our factory technicians. The technicians are not a replacement for your manuals, but they will answer any questions not covered in these books.

Owners that are attempting modifications to their coach should consult SMC Technical Support prior to making any changes as this may result in a loss of warranty coverage.

Road Service

If you have problems with your coach during the warranty period, your first option is your dealer. However, your dealer is not the only service center available to you. Any authorized service center can work on your coach during the warranty period if it is prearranged.

WARNING: If your coach requires service somewhere other than your dealer, call SMC Technical Support before work commences. They will make arrangements with the service center for reimbursement of the cost and exchange of parts, if necessary. Work that is not prearranged may be denied coverage under your warranty.

Most defective parts must be returned to the SMC Warranty Department to be reimbursed. The part should be shipped with a copy of the invoice for the new part. SMC needs the part to determine the nature of the problem. Without it, we cannot reimburse you or the service center. Please consult with SMC Technical Support before discarding any part.

Most service centers require appointments for maintenance and most repairs. Plan service in advance whenever possible in order to encounter fewer problems.

Appliances

Each of the appliances in your coach, including the generator, water heater, furnace, air conditioners and galley appliances, has a warranty provided by its manufacturer. The first step in ensuring quality warranty service for these items is to fill out every warranty card in your pack and send them to the manufacturers.

Please note that SMC does not warrant the various appliances in our coaches. These are each covered by their own manufacturers' warranties. However, if the warranty for an appliance that requires repair is in effect, the service center will act in your behalf to repair or replace it with no cost to you. Claims on items not covered by warranty should be handled through the appropriate manufacturer. This includes labor for replacement.

While SMC will assist you with warranty work, the following items must be handled through the manufacturer: generator, tires, batteries, stereo components, televisions, VCRs and microwaves.

Many manufacturers have authorized service centers located across North America and these generally offer the easiest and best service. To find one of these centers, consult the literature provided or call the manufacturer directly. A listing of manufacturer's phone numbers is located at the end of this chapter.

A second option is to employ a reputable service center. The key to efficient service is to contact the manufacturer *before* having the service performed. In most cases, the manufacturer will work with the service center to take care of your problem.

WHERE TO CALL

The following chart lists the service numbers of many of the companies with products in your coach. This is the best place to start for support on their products.

Make sure that you call the correct manufacturer. Look for the manufacturer's label on the appliance and look up the correct company on the list. A toll-free number is listed where available. If you are unable to find the number for the correct manufacturer, call the Safari service center.

Manufacturers Customer Service Numbers		
Product	**Manufacturer**	**Service Numbers**
Air Conditioner - Dash	Acme	800-552-2263
Air Conditioner - Roof	Duo-Therm	800-544-4881
Antenna	Winegard	319-754-0600
Aqua-Hot	Vehicle Systems	800-685-4298
Awnings	A&E	800-544-4881
	Girard	800-382-8442
	Carefree	800-441-6186
Camera	Intec	714-859-3800
	Motion Analysis	800-935-3440
Carpet	Catalina (Trek/Sahara)	800-421-6723
	Fabrica (Ser'ti, Cont'al)	800-854-0357
	LaSalle (Basements)	503-620-3551
	Monsanto	800-633-3208
Chassis	Magnum	800-344-6332
	Chevy	810-492-1980
	Ford	800-245-7343
Dishwasher	White-Westinghouse	800-277-1828
Electric Step	Kwikee	541-836-2126
Engine	Caterpillar	800-447-4986
Fire Extinguisher	BRK	708-851-7330
Fuel Filter	Winn	800-235-2851
Furnace	Hurricane	800-925-6260
	Suburban	615-775-2131

Manufacturers Customer Service Numbers		
Product	**Manufacturer**	**Service Numbers**
Furniture	Homestyle	800-574-0574
	Villa	714-535-7272
Generator	Onan	800-888-6626
Hurricane	Rixen Enterprises Ltd.	800-925-6260
Inverter	Heart	800-446-6180
	Pro-Sine	604-420-1585
Levelers	RVA	619-746-5732
LP Gas Tank	Brunner Engineering	800-753-8265
Microwave Oven	Sharp	800-237-4277
	General Electric	800-626-2000
Range	Seaward	310-699-7997
	Gaggenau	615-643-4556
	Atwood/Wedgewood	800-825-4328
Refrigerator	Norcold	800-543-1219
	Dometic	800-544-4881
Solar Panel	Siemens	805-482-6800
Stereo	Delco	800-428-0501
	Bose	800-367-4008
	Pioneer	800-334-8251
	Panasonic/TCL Sales	800-334-8251
Television and VCR	Sony	800-342-5721
	Quasar	201-348-9090
	Panasonic	800-545-2672
	Samsung	800-334-8251
Tires	Toyo	800-678-6332
	Goodyear	800-321-2136
Toilet	SeaLand	800-321-9886
	Thetford	800-354-4135
Transmission	Allison World	317-242-0236
Vent	Fantastic	800-521-0298
Washer/Dryer	Splendide/Westland Sales	800-356-0766 (Oregon Only) 503-655-2563 (Outside Oregon)
Water Heater	Suburban	615-775-2131
SMC Service Center West Coast	425 N 3rd St Harrisburg, OR 97446	800-344-6332
SMC Service Center West Coast	62955 Boyd Acres, Suite B Bend, OR 97701	800-344-6332 541-317-3669
SMC Service Center East Coast	10333 Woodberry Brandon, FL 33511	800-344-6332 813-657-0678
Safari Motor Coaches	Technical Advisors, Warranty Claims, and Parts	800-843-2967 or fax 541-995-1182

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