

GULF STREAM COACH MOTOR HOME OWNER'S MANUAL

Congratulations!

You are the proud owner of a new GULF STREAM COACH, INC. motor home, a remarkable recreational vehicle that has been engineered, tested and built in the State of Indiana.

Many thousands of individuals have preceded you onto the highways of America, Canada and Mexico in GULF STREAM vehicles, enjoying the beauty of nature and the companionship of good people.

It's been our experience that if a customer plans well, follows the basic rules of the road and adhere to regular compulsory maintenance and other Owner's Manual recommendations for the recreational vehicle and its equipment, then it will provide years of RVing.

That's why we've included this Owner's Manual in your Owner's Packet along with the individual instruction booklets for the chassis, appliances, equipment along with Operator's Manuals from the various manufacturers who made these products that are a part of your recreational vehicle.

Please read and refer to this Owner's Manual and all the other owner's manuals included in your packet regularly as this information provides important care, instructions, maintenance, travel preparation and warranty information. It will make your travels in your new GULF STREAM much more pleasurable and save time in the long haul.

Happy traveling and good camping!

Sincerely,

GULF STREAM COACH, INC. PO Box 1005 Nappanee, Indiana 46550

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GULF STREAM WARRANTY AND WARRANTY SERVICE

GULF STREAM COACH, INC. LIMITED WARRANTY

IN THE UNITED STATES AND CANADA

For Your Protection And Understanding, Read All Parts Of This Limited Warranty And All Other Warranties Furnished With This Recreational Vehicle.

1. WHAT IS COVERED

A new Gulf Stream Coach, Inc. ("Gulf Stream") motorized recreational vehicle has a limited warranty by Gulf Stream to the initial retail consumer purchaser ("Purchaser") under normal and proper use, when sold by an authorized Gulf Stream dealer ("Dealer") and used for its intended purpose for recreational travel and camping as follows:

- a) A one (1) year warranty under normal and proper use against defects in Gulf Stream materials and/or workmanship in the construction of the recreational vehicle.
- b) A two (2) year warranty under normal and proper use against structural defects (exclusions apply) in Gulf Stream materials and/or workmanship in the construction of the floors, walls and roof.

The Gulf Stream Limited Warranty coverage begins on the date the Purchaser takes possession of the recreational vehicle. This Limited Warranty covers only those defects which occur or exist within the applicable period(s) referenced above and which are specifically identified to Gulf Stream in the manner specified in Section 4 of this Limited Warranty. All obligations of Gulf Stream pursuant to this Limited Warranty are limited to replacing or repairing the defective part or component.

2. DISCLAIMER OF WARRANTIES

This Limited Warranty is expressly IN LIEU of any other express warranty and is further IN LIEU of any implied warranty, including, but not limited to, any implied WARRANTY OF MERCHANTABILITY or FITNESS for a particular purpose. To the extent that applicable state and/or federal law prohibits the exclusion of any remedy permitted under state or federal law, any such remedy, including, but not limited to, implied warranties of fitness, use, merchantability or purpose, is limited to one (1) year from the date the Purchaser takes delivery of the recreational vehicle.

3. WHAT ARE THE INDEPENDENT DEALER'S OBLIGATIONS

It is the responsibility of the Dealer prior to retail sale to: maintain the recreational vehicle until retail sold; perform a comprehensive pre-retail delivery check procedure and inspection; repair or replace any defective parts; check and repair leaks including but not limited to replace caulking and seals, correct defects in workmanship which are identified prior to Purchaser taking delivery of the recreational vehicle; present the Purchaser with this Limited Warranty prior to the Purchaser entering into any written contract to purchase the recreational vehicle; and mail the signed *Gulf Stream Recreational Vehicle Registration Form* and the signed Limited Warranty to Gulf Stream.

4. WHAT ARE THE PURCHASER'S OBLIGATIONS

The Purchaser is responsible for any and all regular, periodic and recommended maintenance as more fully described in the Gulf Stream Owner's Manual and/or any other care and maintenance manual(s) for component parts supplied with the recreational vehicle. For 90-day from the initial date of purchase, minor adjustments including and limited to, interior doors, exterior doors, LP regulator pressure, cabinet latches, TV antenna control may be performed by the Dealer. After the expiration of the initial 90-day, any and all adjustments are the sole responsibility of the Purchaser as normal maintenance unless the same is performed as a part of bona fide warranty repairs covered under the Limited Warranty.

If an issue occurs which the Purchaser believes is covered by this Limited Warranty, Purchaser is responsible to promptly contact Gulf Stream directly in writing by certified mail, return receipt requested, giving specific notice of the issue(s) being experienced with the recreational vehicle. Such notice must be addressed to the **National Retail Service Manager, Gulf Stream Coach, Inc., P.O. Box 1005, Nappanee, Indiana 46550**, and must be received by Gulf Stream within the EARLIER of 30 days after the issue is discovered or known to the Purchaser or within 10 days subsequent to the expiration of this Limited Warranty. After proper written notification has been received by Gulf Stream, documentation including but not limited to receipts for maintenance, repairs, photographs and other proofs may be required to substantiate a claim. Failure of Purchaser to timely and properly advise Gulf Stream of warranty service as noted above, WILL VOID ANY CLAIM FOR SUCH DEFECT OR DAMAGE that could be covered under this Limited Warranty.

Should Gulf Stream, in its sole discretion, deem that the matter is covered under its Limited Warranty, then Gulf Stream will arrange for repair or replacement of the component part or material, parts or workmanship identified as defective by Gulf Stream and such parts replaced shall become property of Gulf Stream. Gulf Stream is ready, willing and able to make every effort for a prompt response concerning the warranty. If for any reason the recreational vehicle is out of service, or is anticipated to be out of service for a cumulative total of seven (7) days during the applicable warranty period, regardless of whether the cause of such out of service time is covered by this Limited Warranty, the Purchaser is to immediately contact Gulf Stream in writing by email or letter sent via certified mail, return receipt requested, setting forth the service issue(s), noting the contact information and issues. Gulf Stream reserves the right to cure any and all warranty claims. Service work conducted by any party not specifically authorized by Gulf Stream to undertake such work, is specifically NOT COVERED BY THIS LIMITED

WARRANTY and WILL VOID THIS LIMITED WARRANTY. Further, failure of the Purchaser to comply with the notification provisions of Section 4 WILL VOID THIS LIMITED WARRANTY.

The Purchaser must retain any and all evidence (i.e., receipts, proofs) of any defect or damage through the ultimate resolution of any claim and make such evidence available to Gulf Stream. Failure to preserve such evidence will VOID ANY CLAIM FOR SUCH DEFECT OR DAMAGE.

5. WHAT IS NOT COVERED BY LIMITED WARRANTY

- This Limited Warranty does not apply to any recreational vehicle sold to the Purchaser more than two years after original shipment to an authorized Gulf Stream retail Dealer.
- The automotive systems including, but not limited to, tires, wheels, batteries, the chassis and drive train and any part of that chassis included/supplied by the chassis manufacturer.
- Appliances and component parts not manufactured by Gulf Stream, including, but not limited to, auxiliary generator power source, refrigerator, air conditioner, water heater, furnace, invertor, television, audio/visual, back up camera, electronics, etc.
- Failure which may be caused by, or related to abuse, misuse, lack of or poor maintenance, negligence, or accident; failure which may be related to alteration(s) or modification(s), overloading, failure as a result of not following recommendations and/or instructions contained in the Gulf Stream owner's manual and/or any other care and maintenance manual supplied with the recreational vehicle.
- Deterioration due to excessive use, wear or exposure, such as fading of fabrics or drapes, carpet wear, exterior surfaces, etc.
- Maintenance items, including, but not limited to, light bulbs, fuses, wiper blades, lubricants, minor adjustments, wheel alignments.
- Use of the recreational vehicle for any and all ownership or use of commercial or rental purpose VOIDS THE WARRANTY from the time that the recreational vehicle is first used for a commercial or rental purpose and at all times thereafter.
- Motor homes on which the odometer reading has been altered or manipulated.
- Costs and expenses for transportation to and from Dealer, service center or manufacturing location, nor any
 consequential and/or incidental expenses such as, but not limited to, loss of time, emotional distress, consequential
 damages, commercial loss, loss of use, towing charges, lodging, food, phone calls, inconvenience, bus or plane
 fares, rental charges, storage fees or unauthorized repairs.
- Any defects or shortages at the time of delivery to the PURCHASER UNLESS NOTED ON THE DRIVER AND DEALER ACCEPTANCE FORM OR THE DRIVER EVALUATION SHEET WITHIN 48 HOURS OF ACCEPTANCE.
- Non-structural defects in the exterior fiberglass sidewall panels, including, but not limited to, checking, crazing, cracking, chalking paint, peeling, and/or porosity.
- Any component part which possesses its own warranty from a manufacturer and/or party other than Gulf Stream.
- Loss or damage caused by insurrection, riot, or act of the public enemy, loss or damage caused by forces of nature, including but not limited to, flood, wind, storm, hurricane, tornado, blizzard, explosion, or fire.

6. IMPORTANT FACTS

- The Purchaser must inspect the recreational vehicle at the time of delivery to ensure that it is acceptable as delivered. This
 recreational vehicle has been wholesale sold to an authorized independent dealer who is not a partner nor an agent of Gulf
 Stream, for resale in the ordinary course of the Dealer's business, on terms and conditions and equipped as the Dealer and
 the Purchaser determine, and Gulf Stream is not a party to the initial Purchaser's purchase agreement for the recreational
 vehicle with the Dealer. Gulf Stream does not participate in retail sales or retail contracts.
- Gulf Stream reserves the unrestricted right at any time and from time to time to make changes in the design of and/or improvements upon its recreational vehicles without thereby imposing any obligation upon itself to make corresponding changes or improvements in or upon its recreational vehicles already manufactured. Gulf Stream further reserves the right to substitute parts or components of substantially similar type and quality in any warranty service required by operation of this Limited Warranty.
- This recreational vehicle and the component parts and products contained therein will require regular and periodic care and maintenance as more fully described in the Owner's Manual. READ AND FOLLOW ANY AND ALL REQUIRED AND RECOMMENDED CARE AND MAINTENANCE MANUALS, WARNING LABELS, SAFETY NOTICES AND INSTRUCTIONS SUPPLIED WITH THE RECREATIONAL VEHICLE.
- Authorized dealers and service centers are independent contractors and independently owned businesses. This is also true of the authorized chassis dealers and service centers.

7. JURISDICTION AND APPLICABLE LAW

Exclusive jurisdiction for deciding any claims, demands or causes of action for defects or representations of any nature or damages due from such defects or representations shall be in the courts in the State of Manufacture. The laws applicable to any litigation, dispute, mediation, arbitration or any claim whatsoever arising from the sale, purchase, or use of the Gulf Stream recreational vehicle shall be those of the State of Manufacture. **THE STATE OF MANUFACTURE OF THE RECREATIONAL VEHICLE IS INDIANA.**

This Limited Warranty gives Purchaser specific legal rights and the Purchaser may also have other rights that may vary from state to state. Gulf Stream is not responsible for any representation or warranty that is not herein stated unless required by applicable state or federal law. Some states may prohibit certain exclusions from express warranty coverage, and/or the exclusion of remedies and implied warranties. Some states do not allow limitations on how long the Purchaser's remedies are available or an implied warranty lasts, so, to the extent applicable state law permits a remedy or an implied warranty obligation on the part of Gulf Stream, the above limitation of remedies stated in Section 2 may not apply. Some states do not allow the exclusions set forth in Section 2 above may not apply. Consult an attorney to determine your rights under the state and federal consumer laws, which may offer remedies in addition to or may differ from this Limited Warranty.

I/WE HEREBY ACKNOWLEDGE THAT I/WE HAVE READ AND RECEIVED THIS LIMITED WARRANTY PRIOR TO ENTERING INTO ANY CONTRACT TO PURCHASE MY/OUR GULF STREAM RECREATIONAL VEHICLE AND AGREE TO ABIDE BY ALL OF ITS TERMS AND PROVISIONS INCLUDING, BUT NOT LIMITED TO, THE DISCLAIMER OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE LAW ALLOWS, AND THE PROVISIONS HEREOF PROVIDING THAT THE EXCLUSIVE JURISDICTION FOR ANY CLAIMS WHATSOEVER SHALL BE IN THE COURTS IN THE STATE OF MANUFACTURE AND THAT THE APPLICABLE LAW SHALL BE THE LAW OF THE STATE OF MANUFACTURE.

WARRANTY SERVICE

- 1. Warranty service, under your Limited Warranty, is to be performed by an authorized Gulf Stream independent Dealer, Gulf Stream independent authorized service center, or other component part, appliance manufacturer's service center for items neither manufactured nor warranted by Gulf Stream. Your Dealer has a vested interest in your satisfaction, therefore, if at all possible; it is best to return to your Dealer for service.
- 2. If you are traveling or move, any independent authorized Gulf Stream Dealer may provide service, with prior approval from Gulf Stream another convenient dealer may be authorized. Keep your warranty registration form with the recreational vehicle at all times since it MUST be presented for warranty service. This form is your proof of purchase and provides the date of retail sale, both of which are necessary to determine warranty eligibility.
- 3. If you cannot locate an authorized independent Gulf Stream Dealer contact:

GULF STREAM COACH, INC. PO Box 1005 Nappanee, IN 46550 Toll-free: (800) 289-8787

- 4. Other warranties The Customer is responsible for completing and forwarding warranty forms for all items not covered by either the chassis manufacturer or Gulf Stream warranty.
- 5. YOUR WARRANTY IS NOT VALID UNTIL IS HAS BEEN SIGNED AND SUBMITTED TO GULF STREAM COACH, INC!

Your authorized independent Gulf Stream Dealer from whom you purchased your unit will assist you in service, maintenance, selection of options, and instructions concerning the operation of your recreational vehicle. Occasionally, a warranty or service matter may not be handled to your satisfaction. In such case, we recommend that you discuss the problem with Dealer management. If you are unable to find satisfaction at the Dealer level, please contact the Gulf Stream Service Department, where we will make our best effort to reach an agreeable solution.

LP GAS HEATING SYSTEM AND LP GAS APPLIANCE SAFETY REGULATIONS

The United States Government requires that the manufacturer of this recreational vehicle provide the following safety information that has been provided by the National Fire Prevention Association (NFPA) and the American National Standards Institute (ANSI). The information contained below will also be found, along with additional information, in other appropriate sections of this operator's manual. Refer to the Table of Contents and the Index.



WARNING: LP-Gas cylinders shall not be stored inside the vehicle. LP-Gas cylinders are equipped with safety devices that relieve excessive pressure by discharging gas to the atmosphere. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

A warning label has been located near the LP-Gas container. This label reads as follows.

DO NOT FILL CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY.

- 1. Overfilling the LP-Gas container can result in uncontrolled gas flow, which can cause fire or explosion.
- 2. A properly filled container will contain approximately 80 percent of its volume as liquid LP-Gas.



WARNING: IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING.

- 1. Cooking appliances need fresh air for safe operation. Before operation:
 - (a) Open the overhead vent or turn on the exhaust fan.
 - (b) Open a nearby window.
- 2. Unlike homes, the amount of oxygen supply is limited due to the size of the recreational vehicle, and proper ventilation when using cooking appliance(s) will avoid the dangers of asphyxiation. It is especially important that cooking appliances not be used for comfort heating, as the danger of asphyxiation is greater when the appliance is used for long periods of time. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.



WARNING: Portable fuel-burning equipment, including wood, charcoal grills and stoves, shall not be used inside the recreational vehicle. The use of this of this equipment inside the recreational vehicle can cause fires and asphyxiation.



WARNING: Do not bring or store LP-Gas cylinders, gasoline or other flammable liquids inside the vehicle because a fire or explosion can result.

The following label has been placed in the cooking area of the vehicle:

IF YOU SMELL GAS:

- 1. Extinguish any open flame, pilot light and smoking material.
- 2. Do not touch electrical switches.
- 3. Shut off the LP gas supply at the tank valve(s) or gas supply connection.
- 4. Open doors and other ventilating openings.
- 5. Leave the area until the odor clears.
- 6. Have the gas system checked and leakage source corrected before using again.

LP gas regulators must always be installed with the regulator vent facing downward. Regulators that are not in compartments have been equipped with a protective cover. Make sure that the regulator vent faces down and that the cover is kept in place to minimize vent blockage that could result in excessive gas pressure causing fire or explosion. Notice: All LP gas regulators are factory tested for proper pressure output. Pressure output should be checked periodically by a qualified LP dealer. Only qualified persons should install, adjust or service LP gas regulators. If service is needed contact a qualified LP dealer.

PREPARING FOR THE ROAD

Approaching the open road in a professional manner

As a proud owner and operator of a GULF STREAM motor home you will be commanding one of the larger privately owned manufacturer of recreational vehicles using the nation's roadways.

This recreational vehicle is like operating a "rig" like a large truck or bus driven by professional drivers. Be cautious driving the recreational vehicle as the car-like handling characteristics of your new GULF STREAM can provide a level of confidence, but the recreational vehicle is heavier and requires careful consideration for clearance and handling. Your safety, the safety of your passengers and those on the road alongside you depend on your "professional" driving attitude.

Professional drivers approach their driving responsibilities methodically from the outset of the trip. They include thorough pre-trip planning and equipment checks. They also include equipment checks along the route and take into consideration driver fatigue.

GULF STREAM COACH, INC. provides this Owner's Manual so that you can approach driving the recreational vehicle in the most professional manner possible. **READ THE MANUAL CAREFULLY**. Learn the recreational vehicle. And keep this Manual handy for ready reference.

GENERAL SAFETY

SEAT BELT USAGE

All seats designated for occupancy during travel are equipped with seatbelts for the protection and safety of the driver and passengers. Rear facing seats, as used in the dining area, as well as those seats labeled "Not for occupancy while vehicle is in motion", are not equipped with seatbelts and should NOT BE OCCUPIED while the recreational vehicle is in motion.

NOTE: MANY STATES HAVE PASSED LAWS THAT REQUIRE SEATBELTS TO BE WORN BY ALL PASSENGERS WHEN A VEHICLE IS IN MOTION.

CHILD'S SAFETY SEATS

NOTE: MANY STATES HAVE PASSED LAWS THAT REQUIRE ALL PASSENGERS UNDER TWO YEARS OF AGE BE RESTRAINED BY USE OF AN INFANT SAFETY SEAT, AND THOSE UNDER FOUR YEARS OF AGE BE RESTRAINED BY A CHILD SAFETY SEAT. THESE SEATS MUST BE PROPERLY FITTED TO A STANDARD LAP OR SHOULDER BELT. CONSULT SEAT MANUFACTURER INSTRUCTIONS FOR PROPER SECURING OF THESE SAFETY SEATS.

MANY STATES HAVE SPECIFCALLY OUTLAWED THE PRACTICE OF HOLDING INFANTS IN THE LAPS OF VEHICLE DRIVERS AND PASSENGERS.



WARNING: AN INFANT OR CHILD SEAT SHOULD NEVER BE PLACED IN THE FRONT PASSENGERS SEAT. VEHICLES EQUIPPED WITH AIRBAGS CAN INJURE OR KILL CHILDREN IN THIS LOCATION OF THE VEHICLE WHEN STOPPING ABRUTLY OR IF AN ACCIDENT OCCURS.

When using seatbelts, always take up any slack belt by pulling the excess strap through the adjusting system. Unlatch the belt by pushing the button on the buckle. Do not modify or alter the proper wearing of seatbelts. Furthermore, certain individuals may require seatbelt extensions to fit properly, consult your local Dealer for this option.

SEAT BELT MAINTENANCE

SEAT BELT ASSEMBLIES SHOULD BE PERIODICALLY INSPECTED TO ASSURE THAT THEY HAVE NOT BECOME DAMAGED AND THAT THEY REMAIN IN PROPER OPERATING CONDITION, PARTICULARLY IF THEY HAVE BEEN SUBJECTED TO SEVERE STRESS.

SEAT BELT MOUNTING

All seat belts are mounted per FMVSS (Federal Motor Vehicle Safety Standards) requirements and should never be relocated. Anyone who relocates a seat belt accepts full responsibility of its consequences.

FIRE SAFETY

Prevention is the best form of fire safety. Carefully follow the instructions for the care and operation of the various appliances in your recreational vehicle (see appropriate sections).

Follow the same basic rules of fire prevention that you use at home. DO NOT SMOKE IN BED. DO NOT OVERLOAD THE ELECTRICAL SYSTEM. DO NOT PERMIT CHILDREN NEAR THE LP GAS CONTROLS OR CONTAINER. DO NOT STORE FLAMMABLE LIQUIDS INSIDE THE UNIT.

Carry-over your fire preparedness from home to your RV by having a pre-planned escape route. BE SURE EVERYONE KNOWS WHERE THE EMERGENCY EXITS ARE LOCATED AND HOW THEY OPERATE.

Your recreational vehicle has been equipped with a fire extinguisher. MAKE SURE EVERYONE KNOWS WHERE IT IS LOCATED, HOW TO OPERATE IT AND WHAT TYPES OF FIRES IT IS DESIGNED TO HANDLE.

Check, re-certify or replace the extinguisher on a regular basis to make sure it is charged.

SMOKE DETECTOR

All recreational vehicles are equipped with a smoke detector. Check, test operation and replace the batteries on a regular basis. Should a test not verify, then have it serviced or replaced prior to using the recreational vehicle.

NOTE: IF A FIRE STARTS WITHIN THE RECREATIONAL VEHICLE, GET ALL OCCUPANTS OUT IMMEDIATELY. IF IT IS A SMALL FIRE, USE THE FIRE EXTINGUISHER. IF THE FIRE IS NOT QUICKLY EXTINGUISHED, THEN GET OUT OF THE RECREATIONAL VEHICLE. CONTACT EMERGENCY SERVICES AND/OR THE FIRE DEPARTMENT. WHEN POSSIBLE, CLOSE THE LP GAS SERVICE VALVE AND MOVE A SAFELY AWAY FROM THE RECREATIONAL VEHICLE.

CARBON MONOXIDE SAFETY

Carbon Monoxide is a colorless, odorless, tasteless gas, and can be fatal if a high concentration builds up in a sealed area over a period of time. Carbon Monoxide is a by-product of burning fuel, and is found in high concentrations in exhaust from gas burning engines. A water heater or furnace operating improperly can also produce Carbon Monoxide. Under normal conditions your coach should be free from Carbon Monoxide at any given time. Due to the safety hazards of Carbon Monoxide (CO), each Gulf Stream recreational vehicle is equipped with a CO Detector.

Carefully read the instructions included with your CO detector to ensure proper use and maintenance. Most CO detectors require only occasional dusting and weekly testing. DO NOT use any type of cleaner when dusting your CO detector. Doing so may render the unit useless without warning.

Carbon Monoxide is often confused with illness such as "flu like symptoms". (Headaches, Nausea, Dizziness). Such symptoms should be discussed with all vehicle occupants. RV certified CO detectors will sound an alarm if 100 PPM (parts per million) of CO is present within 90 minutes. 50 PPM is allowed in a work place for up to 8 hours. Cigarette smoke contains about 5 PPM Carbon Monoxide.

If your CO alarm sounds, exit the recreational vehicle immediately. After exiting the recreational vehicle take a head count and make sure everyone is accounted for. Air out the recreational vehicle and check again to ensure that the alarm came from the CO detector, as your vehicle is also equipped with a smoke detector and LP gas detector (optional). Following instructions included with your CO detector is recommended.

LP GAS SAFETY



WARNING: SHUT OFF ALL LP GAS SYSTEMS BEFORE FILLING THE GASOLINE TANK. LP appliances should never be operated while the recreational vehicle is in motion. If the pungent odor of LP gas is detected, immediately shut off the LP gas valve and check the LP gas label for further instructions. Your recreational vehicle may be equipped with an LP gas leak detector that will help you detect the presence of LP gas. However, this detector should not be relied upon solely; if you detect the smell of LP gas, shut off the gas valve immediately. Check other sections of this manual for more information on the LP gas system.

WARNING: MODERN FUEL SYSTEMS MAY BUILD UP VAPOR PRESSURE WITHIN THE GASOLINE TANK AS THE GASOLINE WARMS DURING VEHICLE USE AND DURING HOT WEATHER. UNDER CERTAIN CONDITIONS THE SUDDEN RELEASE OF THIS BUILT-UP PRESSURE BY THE REMOVAL OF THE GASOLINE CAP CAN SPRAY GASOLINE FROM THE FILLER OPENING, CREATING A POTENTIAL HAZARD. WHEN REMOVING THE GASOLINE FILLER CAP, ROTATE IT SLOWLY TO ALLOW ANY INTERNAL PRESSURE TO BE SLOWLY RELEASED. AFTER THE "WHOOSH" OF THE RELEASED PRESSURE PASSES, COMPLETELY REMOVE THE CAP. ALWAYS REPLACE A LOST GAS CAP WITH A CAP OF THE SAME DESIGN TO FORESTALL ANY ADDED PROBLEMS. NEVER MODIFY OR REMOVE YOUR VEHICLES GAS TANK OR ATTACHES HOSES.

VEHICLE LOADING

CARRYING CAPACITY

During the design and development of our recreational vehicles, the number and size of storage compartments and the liquid tank capacities are maximized for value and convenience. If the recreational vehicle operator fills all liquid tanks to capacity, fills all storage compartments and cupboards to maximum volume and fills all available seat belt positions with passengers, the recreational vehicle will probably be overloaded. According to National Highway Traffic Safety Administration figures, an average vehicle occupant weighs 154 pounds, each gallon of gasoline weighs six (6) pounds, a gallon of diesel fuel weighs 7.1 pounds and each gallon of water weighs over eight (8) pounds. THE OPERATOR IS RESPONSIBLE FOR ANALYZING THE CONDITIONS IN WHICH THE MOTOR HOME WILL BE UTILIZED FOR EACH TRIP, AND ENSURING THE RECREATIONAL VEHICLE IS NOT OVERLOADED. Also be careful of the weight distribution of cargo INCLUDING TOWING on the recreational vehicle or the exterior compartments. While the chassis and recreational vehicle is designed to sustain a certain amount of side to side or front to rear weight differences, too much cargo placed at the rear or on either side will have an effect on recreational vehicle operation, safety, structure and handling.

The number of passengers and placement of cargo will affect the amount of water and cargo load that the recreational vehicle is able to safely carry and among other things will also affect the miles per gallon (MPG) the recreational vehicle usages. The passenger capacity will vary depending on whether the recreational vehicle is being used for overnight camping or day use. A smaller passenger capacity for camping will provide a reasonable cargo capacity for trips longer than a one-day trip. The passenger capacity for day use can be larger providing that less cargo is carried for trips and activities not involving overnight stays. It may be necessary to reduce the amount of water carried and unload some cargo items normally carried for camping in order to provide carrying capacity for the additional one (1) day use passengers.

Thoughtful consideration of the weight placed in the recreational vehicle can yield important benefits:

- Maximum flexibility in the use of the liberal storage facilities provided in the recreational vehicle;
- Improved handling characteristics and ride comfort;
- Better fuel mileage and reduced tire wear.

Periodically reweigh your recreational vehicle as differing travel configurations may change the loading and weight.

WARNING: DO NOT EXCEED THE RATED LOAD OF THE RECREATIONAL VEHICLE OR THE RATED LOAD OF ANY AXLE!

NOTE: THE CARRYING CAPACITY OF YOUR MOTOR HOME CAN BE DETERMINED BY WEIGHING, AS SHOWN IN FIG. 3 ON PAGE 12. IF YOU TOW A TRAILER, THE TONGUE WEIGHT OF THE TRAILER **MUST BE SUBTRACTED** FROM THE TOTAL OF THE PASSENGER AND CARGO CARRYING CAPACITIES. Notice: Empty all holding tanks before filling fresh water tank otherwise you will limit cargo and/or passenger capacity. Normally, campgrounds supply free dump stations which can be utilized.

LOADING TIPS

After you have determined how much weight the recreational vehicle can safely carry, make a list and keep it for future traveling and reference guide. The recreational vehicle load and distribution of it, to obtain proper balance, weight and weight distribution on the axles. Do not load upper cabinets with heavy items. Secure and brace items so they won't move during travel, thereby shifting the load in the recreational vehicle. Do not load heavy items near either end of the recreational vehicle or on the rear bumper. Adjust cargo storage to keep the side to side wheel loads as equal as possible. Carry only as much water as needed for travel use or to balance the load. Always empty your waste water and sewage holding tanks before traveling. Fresh water tank may need to be drained for the best weight distribution.



WARNING: DO NOT INSTALL ANY TYPE OF WEIGHT CARRYING RACK OR FRAME TO THE REAR BUMPER OR ANY CHASSIS OR BODY COMPONENT OF THE RECREATIONAL VEHICLE. DAMAGE TO THE RECREATIONAL VEHICLE AND UNSTABLE HANDLING CHARACTERISTICS MAY RESULT.



WARNING: EXCEEDING THE GAWR, GVWR, OR GCWR OF YOUR RECREATIONAL VEHICLE CAN CAUSE UNDESIRABLE HANDLING CHARACTERISTICS AND MAY CREATE A SAFETY HAZARD. MODIFICATION OF YOUR RECREATIONAL VEHICLE BY ADDITION OF RACKS NOT SPECIFIED BY THE MANUFACTURER TO CARRY ADDITIONAL EQUIPMENT OR VEHICLES IS NOT RECOMMENDED, MAY CREATE A SAFETY HAZARD, AND MAY VOID YOUR WARRANTY.

Make a loading diagram of your properly loaded recreational vehicle. It will help you locate where specific items are stored, and will help speed the loading process. Store emergency items in a readily accessible location. Include tools, first-aid kit, rain gear, flashlight, highway warning devices, and an electric cord or light.

The difference between the empty weight and the weight of the recreational vehicle in traveling configuration is your usable load. If the loaded weight of your recreational vehicle exceeds the GVWR or the weight on any axle exceeds that axle's GAWR, the recreational vehicle is overloaded and you'll have to remove items to bring the weight down to or below the GVWR and GAWR.

All items must be considered for their weight and stored according to how heavy they are. Heavy items should be placed close to the floor and in the center of the vehicle. DON'T FORGET TO INCLUDE THE ITEMS YOU PURCHASE ON YOUR TRIP.

Luggage and similar cargo carried inside the vehicle must be secured to prevent possible damage in the case of a sudden stop or an accident. It is no good to survive the initial impact of an accident to be hit on the head by a flying object from inside your recreational vehicle.

MANUFACTURER'S LABELS

Your vehicle is equipped with several federally required labels pertaining to the vehicle's weight, load capacity and operating limitations.

On the wall above or next to the driver is the federal tag that lists the unit's manufacturer's serial number, the front and rear GROSS AXLE WEIGHT RATING (GAWR), the vehicle's GROSS VEHICLE WEIGHT RATING (GVWR), tire and wheel rim sizes, tire operating pressure, and the VEHICLE IDENTIFICATION NUMBER (VIN). (FIG.1)

MFD BY / FABRIDUE PAR: GULF STREAM COACH, INC. REFER TO TRIP PLANNER FOR MAXIMUM VEHICLE LO			LE LOADING		
DATE OF MFG/FABRIQUE DATE - GULF STREAM 01/27/10	INC. VEH. Fo	MFD. BY: rd	DATE OF MFG/FABRIQUE Oct-09	PNBV/*GVWR 9299 KG (20500 LB)	
PNBE AVANT / GAWR FRONT 3402 kg (7500 lb)	PNEU . 245/70	/ TIRE R19.5	JANTE / RIMS 19.5X6.75	PRESS DE GUNFL À FROID/CÓLO INFL PRESS 620 KPA (90 PSI)	SINGLE DUAL
PNBE INTERM. / GAWR INTERM. N/A	PNEU /	/ TIRE 'A	JANTE / RIMS N/A	PRESS DE GONFL À FROID/COLD INFL PRESS N/A	SINGLE DUAL
PNBE ARRIERE /GAWR REAR 6124 KG (13500 LB)	PNEU / 245/70	R19.5	JANTE / RIMS 19.5X6.75	PRESS DE GONFL À FROID/COLD INFL PRESS 620 KPA (90 PSI)	SINGLE DUAL
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V.I.N. / N.I.V. 1F6NF53Y390A		Serial No.	/ No de serie	58-0-A-8259I-12	
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(FIG. 1) FEDERAL ID TAG



(FIG. 2) WEIGHT INFORMATION LABEL

WEIGHT DEFINITIONS

GAWR: The allowable weight, INCLUDING CARGO AND PASSENGERS, which can be SAFELY supported by a specified axle.

GVWR: The maximum permissible weight of your vehicle, INCLUDING CARGO, ALL OPTIONS, PASSENGERS, GASOLINE AND WATER.

GCWR: The maximum permissible weight of your fully loaded vehicle including the weight of any towed vehicle or trailer.

NCC: The net cargo capacity of the vehicle as equipped by Gulf Stream. This does not include water.

WEIGHT LIMITATIONS, WEIGHT DISTRIBUTION AND VEHICLE HANDLING

THE TOTAL AMOUNT OF WEIGHT CARRIED BY YOUR RECREATIONAL VEHICLE IS EXTREMELY IMPORTANT. It is critical that you weigh your vehicle prior to taking a trip in order to determine if you are within the weight limitations of the vehicle's suspension. While each vehicle is custom made and may have different handling characteristics than the other, most operators will find that a front to rear weight distribution of 35/65 (Front axle 35% of total loaded vehicle weight with passengers and rear axle 65% of total loaded vehicle weight) will provide a good vehicle handling experience. These ratios will vary according to options, chassis design and end user installed equipment. Vehicle handling is affected by weight placement. Some owner's may wish to enhance vehicle handling by the addition of shocks, upgraded anti-sway bars, air suspensions, steering stabilizers, etc. These items are user preference items and are not necessary for the safe operation of this vehicle as equipped by Gulf Stream. Vehicle handling is also greatly affected by proper tire air pressure. One or more tires low on air may cause the vehicle to wander and/or sway in a dangerous manner. CHECK THE WEIGHTS. CHECK THE TIRE PRESSURE IN RELATIONSHIP TO THE WEIGHT. See the Federal Sticker for the needed information (FIG. 1).

THE METHOD OF WEIGHING YOUR VEHICLE



There are many locations where you can weigh your vehicle, including grain elevators, scrap iron businesses, sand and gravel dealers and state and federal weight stations (usually listed in phone directory).

NOTE: BE SURE TO WEIGH THE RECREATIONAL VEHICLE WITH <u>EVERYTHING</u> IN IT INCLUDING PASSENGERS, CARGO, FULL LP, AND GASOLINE.

The procedure for weighing is as follows (unless modified by the weighmaster):

- 1. Drive only the front axle of the unit onto the scale. Have the weight master note this weight.
- 2. Drive forward and place both front and rear axles onto the scale. Have the weigh master note this weight.
- 3. Drive forward until only the rear axle is on the scale. Have the weight master note this weight.

NOTE: COMPARE ALL WEIGHTS WITH THOSE LISTED ON THE FEDERAL ID STICKER.

If any weight exceeds the listed rating, relocate the passengers and redistribute or remove a portion of the cargo until the weight is within the proper limit as listed on the Federal ID Sticker and for which the vehicle has been engineered.

NOTE: DO NOT FORGET THAT WATER USED FROM THE FRESH WATER SUPPLY GOES INTO THE WASTE WATER HOLDING TANK. IF YOU REFILL THE FRESH WATER TANK PRIOR TO DUMPING THE WASTE WATER, THE WEIGHT OF THE VEHICLE IS SUBSTANTIALLY MORE THAN WHEN YOU WEIGHED IT AT THE START OF YOUR TRIP.

USEFUL WEIGHTS

Water	.8.1 pounds per gallon	Gasoline	.6.0 pounds per gallon
Propane	.4.23 pounds per gallon	Diesel fuel	.7.1 pounds per gallon

WEIGHT DISTRIBUTION FORMULAS

When loading cargo or installing/towing any equipment (tow dolly, racks, etc) behind the rear axle, you must take into consideration the cantilever effect that weight has on both axles. For example, a 100 pound item added five (5) feet behind the rear axle will add more than its actual weight to the rear axle and will actually remove weight from the front axle. Prior to the addition of any heavy cargo or equipment, you will need to know your vehicle's wheelbase, the weight of the equipment and how far behind the rear axle it will be placed/installed.

Example: A motorcycle is hung on the rear bumper of an RV. It is 144 inches behind the rear axle. Divide the 144 by the vehicle's 178 inch wheelbase and you find that the motorcycle equals 80 percent more than its actual weight...in other words it acts on the vehicle as though it weighs 180 percent on the rear axle. THE EXCESS OF 100 PERCENT IS TAKEN OFF THE FRONT AXLE.

If the motorcycle weighs 300 pounds it acts on the RV rear axle as though it weighs 540 pounds! Two hundred forty pounds is also taken off the front axle.

Thus, you can see why the addition of any rack or component to the rear of the vehicle will have an adverse effect on the driving characteristics.

AIR BAG AND SUSPENSION MODIFICATION WARNING:

GULF STREAM COACH, INC. DOES NOT APPROVE THE USE OF AFTER MARKET SUSPENSION AIR BAGS OR THE ADDITION OF SUSPENSION LEAF SPRINGS ON ITS VEHICLES. THESE ITEMS, WE HAVE DETERMINED, DO NOT PROPERLY SUPPLEMENT THE SUSPENSION. INSTEAD, THEY INTERFERE WITH THE RIDE AND HANDLING OF RECREATIONAL VEHICLES ENGINEERED BY THE CHASSIS MANUFACTURER AND CAN BE DESTRUCTIVE TO THE RECREATIONAL VEHICLE AND INTERFERE WITH ITS ROAD HANDLING CAPABILITIES. DO NOT USE SUPPLEMENTAL AIR BAGS OR SPRINGS ON YOUR MOTOR HOME! IF SUPPLEMENTAL CAPABILITY FOR THE SUSPENSION IS DESIRED, YOU ARE ATTEMPTING TO CARRY MORE CARGO THAN THE VEHICLE WAS DESIGNED FOR. UPGRADING WITH ADDITIONAL SPRINGS, HIGHER CAPACITY SHOCK ABSORBERS, OR COIL-OVER SHOCKS WILL ALSO **VOID** YOUR WARRANTY. ALWAYS BE MINDFUL THAT YOUR RECREATIONAL VEHICLE WAS DESIGNED FOR THE MAXIMUM WEIGHT TO CARRY. **MORE WEIGHT IS DANGEROUS AND SHOULD BE AVOIDED.** ANY MODIFICATION MUST BE APPROVED BY GULF STREAM IN WRITING, OR IT WILL **VOID** THE WARRANTY!

GULF STREAM WILL NOT APPROVE ANY AIR BAG INSTALLATION OR OTHER SUSPENSION MODIFICATION. BEFORE MODIFYING YOUR SUSPENSION, TALK TO YOUR CHASSIS DEALER. AVOID CAUSING POSSIBLE DAMAGE TO YOUR RECREATIONAL VEHICLE.

DANGERS OF OVERLOADING

One of the attractive selling points of the GULF STREAM is the abundance of storage, both inside and outside the recreational vehicle. However, there are limits to what the recreational vehicle can safely carry as discussed above. When preparing for a trip and while on your travels, always be mindful of WHAT YOU ARE STORING, HOW MUCH IT WEIGHS AND WHERE YOU ARE STORING IT. **BEWARE OF OVERLOADING.**

In addition to causing premature wear, overloading can cause problems in the area of handling characteristics. An overloaded recreational vehicle will take longer (time and distance) to stop in an emergency. Overloading can also cause added wear and tear to components such as tires, wheel bearings, transmission and engine. Overloading can also cause overheating in some instances.

The solution? Always check and re-check the recreational vehicle weight as traveling and/or loaded. Know the recreational vehicle weight limitations as to the GVWR, GAWR and GCWR.

VEHICLE OR TRAILER TOWING

Prior to towing any equipment, vehicle or trailer behind your recreational vehicle, consult your chassis owner's manual towing guide and refer to the GCWR listed in your recreational vehicle (see FIG. 2). Determine what type of special equipment is needed to tow safely with your recreational vehicle. Sway control devices, weight distribution hitches and trailer brakes are required for towing any trailer weighing over 1000 pounds or with a tongue weight of more than 150 pounds.

Be sure that your vehicle's GROSS COMBINED WEIGHT RATING (GCWR) has a rating capable of towing your vehicle or loaded trailer while your recreational vehicle is loaded.



WARNING: DO NOT EXCEED THE TOW RATING OF THE HITCH INSTALLED ON YOUR VEHICLE.

WARNING: DO NOT REPLACE THE OEM HITCH WITH A HIGHER TOW RATED HITCH! THE HITCH INSTALLED REPRESENTS THE MAXIMUM ALLOWED TO BE TOWED BY THIS RECREATIONAL VEHICLE. TOWING WEIGHTS IN EXCESS OF THIS VEHICLE LIMITATION CAN RESULT IN AN ACCIDENT, POSSIBLY CAUSING INJURY OR DEATH AND WILL VOID THE WARRANTY.

IMPORTANT: The towing vehicle's braking system is rated for the operation at GVWR (Gross Vehicle Weight Rating), NOT at GCWR (Gross Combined Weight Rating). Towing capacity may vary by chassis model, floor plan, options, and loading of the recreational vehicle. This may result is a towing capacity which is less than the maximum capacity of the hitch. Do not exceed the vehicle's GCWR or the hitch rating. A separate functioning brake system is required for any towed vehicle or trailer weighting more than 1,000 pounds (450 kg) when fully loaded.

VEHICLE WEIGHT INFORMATION LABEL

All GULF STREAM recreational vehicles have a weight information label posted inside the kitchen cupboard (See Fig. 2). Please refer to this label to see the shipping weight of your vehicle and the net carrying capacity of your water tank. This label also contains the GULF STREAM designated GCWR. Please note that the GULF STREAM GCWR may differ from the chassis designated GCWR, and that the lower of the two must be followed.

The recreational vehicle weight information label also contains the net carrying capacity. This is the maximum weight designated by GULF STREAM that can be utilized for cargo and passengers. Any addition of accessories by you or the Dealer reduces this amount proportionally with the weight of added accessories.

TIRES

The tires installed on your recreational vehicle have been pre-selected as the proper size and weight by the chassis manufacturer for the type and weight of the coach built. The Federal ID tag (Fig. 1) located inside the coach will show the proper tire size for your coach and the recommended air pressures. When replacing tires, make sure that those guidelines are followed.

TIRE MARKINGS

Sample tire size: LT225/75 R 16 E

- LT reflects the "Light Truck" usage. Light truck tires are used on anything from compact pickups to Class A recreational vehicles.
- 225 indicates the "contact patch" width. The contact patch is the amount of tire surface that actually comes into contact with the pavement. In this case the width is 225 millimeters wide.
- 75 indicates the height to width ratio of the tire.
- R identifies the construction type of the tire. R Radial, B Bias belted, D Diagonal Bias. Some tires may have a speed designation label in front of the construction type. Example – MR tires are rated for use up to 81 mph. SR tires up to 112 mph. ZR tires carry the highest speed rating, and are safe for speeds over 150 mph. However, ZR tires should never be installed on any motor home or travel trailer. If no speed rating is listed on the sidewall, the maximum speed for light truck tires is 87 mph, and for passenger cars 105 mph.
- 16 is the rim size. This is the only measurement made in inches.
- E is the load range.

TIRE LOAD RATINGS

Load ratings for tires go up as the corresponding letter changes. For example, load range "E" tires have a heavier rating than load range "D" tires. Load capabilities of tires change as the psi (air pressure) is lowered. As much as 220 lbs. of load carrying capacity is lost per tire for each 5 psi below the recommended inflation. This decreased load amount varies from one tire manufacturer to the next, therefore it is recommended that you contact your tire manufacturer for further information in this regard.

TIRE AIR PRESSURE

WARNING: PROPER TIRE AIR PRESSURE IS CRITICAL FOR SAFE OPERATION OF THIS VEHICLE! IT IS REQUIRED THAT THE TIRE AIR PRESSURE IS CHECKED PRIOR TO EACH USE OF THIS VEHICLE.

When checking air pressures, if the tire has been driven more than 6 miles, you can add 4 to 6 psi to the rated maximum "cold" inflation recommendations. For example, if the tire has a maximum rating of 90 psi cold, you can inflate the tire to 96 psi after being driven on. Under inflation generates excessive heat (a tire's worst enemy!), increases tread wear in the shoulder area, and reduces your vehicle's fuel economy.

Never mix radial, bias belted or bias type tires. Never mix brands. This can adversely affect vehicle handling and stability. Use only the tire size that is listed on the Safety Compliance Certification Label. If you have a question about the label, please call Gulf Stream.

The tire inflation tables provided by Goodyear and Michelin are shown at the end of this Manual and are for general purposes only. These tables will show how the load carrying abilities of your tires vary according to air pressure settings. Please refer to the Federal tag (FIG. 1) for proper tire air pressure for your recreational vehicle.

TIRE MAINTENANCE

When cleaning tires, try to use a tire-cleaning agent. Never use any cleaner that contains solvents. Solvents will draw oil from tires and cause them to prematurely crack. Inspect your tires prior to each trip, looking for bulges or cracks in the sidewalls.

When storing your recreational vehicle for long periods of time, you should completely unload the vehicle so that a minimum weight will be placed on the tires. Make sure the tires are inflated to the recommended operating inflation pressure. Avoid moving the recreational vehicle during extremely cold weather. Move the vehicle at least every three months to prevent ozone cracking in the tire bulge area as well as "flat spotting" from prolonged strain of sidewall and tread deflection. Make sure you check the inflation and adjust to the recommended operating pressure before putting the vehicle back into service.

Tire life expectancy varies. Some tires reach their life expectancy and may need to be replaced in as little as six years regardless of tread wear. Please refer to the tire manufacturer for recommendations in regard to tire life expectancy.

EMERGENCY TOWING OF THE MOTOR HOME

Extreme care must be taken in the event the recreational vehicle must be towed as a result of a break down or accident. The recreational vehicle should only be towed by a professional towing company.

NOTE: THE USE OF A "DOLLY" TYPE TOW DEVICE THAT TOWS THE VEHICLE WITH ITS FRONT WHEELS SECURED ON A SMALL PLATFORM FITTED WITH ITS OWN SET OF WHEELS, OR A WHEEL-LIFT TOWING DEVICE THAT CARRIES THE RECREATIONAL VEHICLE'S FRONT WHEELS IN A "CRADLE" OR "SLING" ARE THE ONLY METHODS RECOMMENDED. USING OTHER METHODS MAY CAUSE SEVERE DAMAGE TO THE RECREATIONAL VEHICLE. PLEASE REFER TO YOUR CHASSIS MANUAL FOR FURTHER DETAILS ON TOWING PROCEDURES.

DAY-TO-DAY OPERATION

DRIVING TECHNIQUES

With just a few miles driving your recreational vehicle, you will find that your new GULF STREAM handles much differently than a typical car or truck. You must take into consideration that the vehicle is much longer, higher and heavier than any car or light truck.

Always be mindful of your recreational vehicle's height when approaching underpasses, awnings, parking garages, drive-in facilities (banks, food, fuel stations) and carport-type overhangs. Remember: your recreational vehicle's height is likely different than what the manufacturer lists depending upon any additions you have added to your roof.

NOTE: WHEN APPROACHING AN OVERHANG THAT IS APPROXIMATELY THE SAME HEIGHT AS YOUR RECREATIONAL VEHICLE, USE EXTREME CAUTION. PAVEMENT DIPS/RISES AND NEW LAYERS OF ROAD SURFACE CAN MAKE OLD CLEARANCE SIGNS OBSOLETE. "WHEN IN DOUBT...STAY OUT."

GROUND CLEARANCE

Just as overhangs can produce problems, so do dips and rises in pavement. Be extremely cautious when entering and leaving the main roadway (drives, parking lots, side roads, etc.). Become familiar with the rear overhang characteristics of your recreational vehicle. This will help you avoid damage to the undercarriage behind the rear axle. The nature of your recreational vehicle is such that you will not be able to access as many areas as easily as you would in a car.

WARM WEATHER/HIGH ELEVATION OPERATION

Although Gulf Stream recreational vehicles are designed and tested in a variety of hot and cold situations, you must take precautions when driving in hot weather or high elevations. Always read your chassis owner manual section on driving techniques. When driving in hot weather, keep your engine speed up, not your road speed. In other words, as the recreational vehicle slows down, manually downshift the engine. This will keep the engine rpm's up and the coolant flowing at a high rate at all times. On diesel models, by shifting from sixth gear down to fourth gear on uphill climbs you can decrease your engine temperature by up to 15 degrees (depending on humidity and road conditions), and yet you can still maintain 55 mph if your load or the road allows.

Aside from driving habits, always make sure that your radiator is clean of debris and bugs. Using a power washer to clean out your radiator will noticeably increase its cooling capacity. Also make sure that the coolant is a 50/50 mixture of antifreeze/coolant and water. Adding more coolant than water will not increase the cooling capacity of the radiator. Engine coolant is formulated to provide optimum cooling at an equal 50/50 mixture. Driving in higher elevations (above 5,000 ft) will allow your coolant to boil at a lower temperature.

DRIVER CONTROLS

Your chassis operator/owner manual will contain most information of driver controls such as Tilt steering, cruise control, dash instruments, transmission gear selection, braking, and other essential driving functions. Please review your chassis manual thoroughly, and familiarize yourself with all chassis controls before your initial trip.

BRAKES

As mentioned previously, your recreational vehicle is much larger than an automobile and, though equipped with wellengineered brakes, is likely to take more distance to stop than you have been accustomed to in the past with autos. Learn how quickly your recreational vehicle will stop from your normal cruising speed with the loads you carry. Become familiar with the amount of pressure that it takes to "lock-up" the brakes in a "panic" stop.

NOTE: EVEN MODERN DISK BRAKES WILL NOT STOP A VEHICLE INSTANTLY IF THEY HAVE BEEN SUBMERGED IN WATER. BE CAREFUL WHEN DRIVING IN FLOODED CONDITIONS. "PRE-DRY" BRAKES PRIOR TO THEIR BEING NEEDED BY LIGHTLY PRESSING DOWN ON THE BRAKE PEDAL AND ENGAGING THE BRAKE PADS AND SHOES TO GET RID OF EXCESS WATER AND WARM THE BRAKING SURFACES. EXTREME CAUTION IS ALSO NEEDED IF ONLY ONE SIDE OF THE VEHICLE'S BRAKING SYSTEM HAS BEEN FLOODED. IF A STOP IS NEEDED THE VEHICLE COULD VEER TO THE SIDE THAT IS DRY (THE BRAKES ON THAT SIDE OF THE VEHICLE ARE WORKING MUCH BETTER THAN THE WET SIDE).

If you notice that the brakes get "mushy", take your recreational vehicle to your nearest dealer for inspection. Unusual sounds during braking may indicate a problem. Have your dealer check the braking system. Read your chassis owner's manual for further information on your particular braking system and its care.

ANTI-LOCK BRAKING SYSTEMS (ABS)

Recreational vehicles equipped with optional Anti-Locking Brakes have braking characteristics much different than vehicles without. Anti-Lock Brake equipped vehicles have a system that senses wheel movement when braking. While depressing the brake pedal, if wheel movement stops while the speedometer still shows that the vehicle is moving, the Anti-Lock brake system literally "pumps" your brakes hundreds of times per second to allow proper braking. A spinning, braking wheel will stop your vehicle quicker (time and distance) than a skidding wheel. Manually pumping your brakes in this situation will adversely affect the Anti-locking brake system and will actually cause a longer stopping distance than using ABS in the proper manner. Refer to your chassis owner's manual for ABS braking techniques.

If your ABS dash indicator light illuminates have your vehicle serviced immediately. Call your chassis manufacturer first if you have to operate your vehicle while the ABS dash light is on.

PAC BRAKES AND JAKE BRAKES (OPTIONAL)

Pac brakes and Jake Brakes are sometimes utilized on diesel chassis to limit the engine and transmissions power output for extra assistance in slowing down your coach. Both are good systems and are recommended if you feel you need to supplement your existing braking system to reduce wear. Otherwise, down-shifting the transmission within the vehicle limits is the next best way to reduce wear on your brakes (Pac Brakes and Jake Brakes will down-shift for you). Please contact your chassis manufacturer for further information on these systems.

DASHBOARD INSTRUMENTS

While driving, always be attentive to your vehicle's dash instruments. These instruments are designed to warn you of any problem or potential problem with the vehicle. If a warning light does come on, check under the hood for possible problems. Refer to your chassis operator's manual for instructions on diagnosing the problem or contacting help It is best to stop the recreational vehicle at once if any warning light appears. Reduce your speed immediately by lifting off of the throttle. CHECK THE TRAFFIC BEHIND YOUR UNIT. Don't apply the brakes too rapidly. SIGNAL YOUR INTENTIONS. Quickly, safely pull off to the side of the roadway onto a safe, solid shoulder area. Make sure the recreational vehicle is out of the flow of traffic as much as possible. Shut down the motor. Place transmission into PARK and apply the PARKING BRAKE. Put on your emergency flashers and investigate the problem.

NOTE: IT IS A GOOD PRACTIVE TO PLACE FLARES AT INTERVALS SEVERAL YARDS BEHIND THE RECREATIONAL VEHICLE, ESPECIALLY IF YOU HAVE STOPPED AT A HILL, CROSSING OR CURVE. STAND-UP TRIANGULAR REFLECTORS ARE ALSO QUITE WORKABLE. IF THE VEHICLE IS STOPPED JUST OVER THE RISE OF A HILL OR JUST PAST A CURVE, PLACE FLARES OR REFLECTORS OVER OR AROUND THE OBSTACLE TO WARN ON-COMING TRAFFIC IN PLENTY OF TIME FOR THEM TO SLOW DOWN PRIOR TO REACHING YOUR STOPPING POINT.



WARNING: NEVER ATTEMPT TO OPEN A RADIATOR CAP WHEN THE ENGINE IS OVERHEATED OR EVEN AT NORMAL OPERATING TEMPERATURE. THIS WILL RESULT IN AN "EXPLOSION" OF BOILING COOLANT FROM THE RADIATOR OPENING THAT CAN RESULT IN SERIOUS INJURY TO ANYONE STANDING NEARBY. STAY AWAY FROM ANY STEAM ESCAPING FROM SPLIT HOSES, FAILED GASKETS OR LOOSE CLAMPS. WHEN THE RECREATIONAL VEHICLE HAS COOLED, THEN ATTEND TO THE PROBLEM.

UNUSED DASHBOARD SWITCH LOCATIONS

As a result of the optional equipment available on our extensive line of recreational vehicles, each recreational vehicle is somewhat different than other recreational vehicles built with the same standard dashboard. Therefore, on some models certain dashboard switch locations will not have a switch installed. You may wish to order matching switches from your dealer to use as you add accessories to your coach.



DASH SWITCH SYMBOLS (Typical, may vary)

STARTING AND VEHICLE WARM UP - GAS

Make sure surrounding area is clear of pedestrians. Never use "Starting Fluids" or "Ether" to assist in starting of the recreational vehicle. Check your chassis manufacturer's owner's manual for details on starting your vehicle.

TURBO DIESEL OPERATING INSTRUCTIONS

Turbo charged engines and turbo chargers operate at very high temperatures, which provide the fuel efficiencies, high horsepower, and necessary emission standards. Because of this, the engine must be allowed to build up heat slowly and cool slowly to prevent expansion and contraction of internal engine and turbo charger components. This is accomplished by the following:

STARTING - DIESEL

Once the engine starts, return the accelerator pedal to the idle position and let the engine idle for 3 to 5 minutes before applying a load. Refer to the diesel engine owner's manuals for further instructions.



WARNING: EXPLOSION HAZARD! NEVER USE ETHER OR OTHER STARTING FLUIDS IN THE ENGINE AIR INTAKE SYSTEM TO START YOUR ENGINE. PLEASE REVIEW YOUR CHASSIS/ENGINE MANUAL FOR PROPER STARTING INSTRUCTIONS.

SHUTTING DOWN - DIESEL

If you have been driving at highway speeds, allow the engine to idle for 3 to 5 minutes before shutting it off. This allows the engine to cool gradually and uniformly. Refer to the diesel engine owner's manual for further instructions.

JUMP STARTING/EMERGENCY START SWITCH

As an option, some Gulf Stream recreational vehicles are equipped with an Emergency Start Switch in the event your chassis battery goes dead and the recreational vehicle won't start. If your recreational vehicle has this optional feature, you will find the switch marked "Emergency Start" and it will be located on the dash or above the driver's side entry door on class C models. To utilize the Emergency Start Switch, make sure your "coach" or "house" batteries are fully charged and if possible start the generator or plug the coach into shore power. Then depress and hold the Emergency Start Switch. If the recreational vehicle fails to start, please contact your roadside assistance provider.



WARNING: DUE TO THE COMPLEXITY OF THE DUAL BATTERY SYSTEMS INSTALLED IN THIS RECREATIONAL VEHICLE AND THE DAMAGE THAT CAN OCCUR FROM THEIR MISUSE, AND ALSO DUE TO THE GENERAL HAZARDS ASSOCIATED WITH "JUMP STARTING" AND/OR USING "JUMPER CABLES," GULF STREAM DOES NOT RECOMMEND THAT YOU ATTEMPT TO "JUMP START" THIS RECREATIONAL VEHICLE. PLEASE CALL ROADSIDE ASSISTANCE FOR THIS OPERATION.

RECREATIONAL VEHICLE SYSTEMS

SAFETY

Your new recreational vehicle has been provided with numerous safety features. Please review all features and familiarize yourself with their proper operation prior to using this recreational vehicle.

EMERGENCY WINDOW EXIT: All Gulf Stream recreational vehicles are equipped with two exit paths from any sleeping area. One exit path is the entry door and the second exit path can be an emergency exit window or roof hatch. Inspect your recreational vehicles to find each emergency exit window or roof hatch. They will be identified by a red decal that reads "EXIT" and will have a red handle on the window. Some emergency exit windows slide open to the side and some pop open from the bottom with a hinged top. Test your emergency exit windows for proper operation before each trip.

FIRE EXTINGUISHER: This is required equipment with all new Gulf Stream recreational vehicles and is usually located just inside side entry door. It is activated by pulling the ring-pin and squeezing the handle. Direct contents at the base of the fire. Read instructions on bottle. Check regularly to insure that charge is adequate.

SMOKE DETECTOR: Located in kitchen/dining area or between kitchen/dining area and sleeping areas. Sounds alarm if it detects smoke. Test regularly and replace battery at least twice a year. Consult smoke detector manual. **LP GAS DETECTOR**: Located in kitchen/dining area near floor. Sounds alarm if it detects LP gas. Test regularly. Consult LP gas detector owner's manual. False alarms or "beeping" can be an indication of a low "coach" or "house" battery. Remember, LP gas is heavier than air and will float at floor level. DO NOT block your LP gas detector by leaving items lying in front of it on the floor.

CARBON MONOXIDE (CO) DETECTOR: Located in rear hall or sleeping area. Sounds alarm if it detects Carbon Monoxide at a dangerous level. Test regularly. Consult CO detector manual. Replace batteries at least twice a year.

SAFETY BELTS: Seats that are designated to be used while the recreational vehicle is in motion are equipped with lap/shoulder belts. Flat metal section fits into buckle and locks, giving a distinctive "click." Unlock by pushing in button on buckle. Only travel in the recreational vehicle is a seating position with a seat belt. Only secure one (1) person per seat belt. Secure all children and child safety seats per your city, state or local government requirements.

WARNING/HAZARD FLASHERS: Activated by pushing in/back a button on steering column. Parking/turn signal lights flash on and off. Use when stopped for emergency on roadside. Some states have laws against driving with warning flashers on.

EMERGENCY/PARKING BRAKE: Activated by pushing down with foot the lever that is located on the left side of the steering column on gas models. On some diesel models, pulling out on the yellow air brake knob activates the brake. Consult chassis owner's manual

ELECTRICAL – CHASSIS AND HOUSE

Your GULF STREAM recreational vehicle is equipped with three (3) separate electrical systems that provide your vehicle with power on the road and in camp. A chassis 12 volt DC system, a coach ("House") 12 volt DC system and a 110 volt AC system are installed.

CHASSIS 12 VOLT DC SYSTEM

The chassis electrical system is a 12 volt DC system, which gets its power from the alternator installed on the engine by the chassis manufacturer. This system is entirely separate from any of the house battery systems except when the engine is running. When the engine is running, an isolator system allows the chassis battery and the house batteries to connect, which allows the engine to charge the house batteries. Please refer to your chassis owner's manual for assistance on any chassis electrical system.

COACH/ HOUSE 12 VOLT DC SYSTEM

The house 12-volt system is used for running most interior lights and appliances. Even though your refrigerator has an option to run on 110-volts AC, the refrigerator circuit board uses 12 volt DC for it's operation. Also, the roof mounted air conditioner(s) are powered by 110-volts AC, but also need 12 volts DC to power the thermostats. The 12 volt DC power is provided by one or more "house" or "coach" batteries. The house batteries are charged by a convertor/charger when the motor home is plugged into shore power or when the generator is running. The house batteries are also charged by the engine's alternator while the chassis engine is running. Other items in the coach that run on 12 volt DC power include: water pump, water heater, furnace, slide out systems, powered vents, etc.

Similar to United States standard, the recreational vehicle has a 110-volt alternating current (AC) system that requires an external source of 110-volt electricity. A shoreline connection (extension cord) or an optional electrical on-board power generator or an inverter can provide this power. In order to use your 110-volt electrical system, your shoreline (power cord) should be plugged into either a properly rated external power source or the generator should be running, or in some cases the inverter should be turned on. TO CONSERVE BATTERY POWER, USE OF THE SHORELINE IS RECOMMENDED WHENEVER POSSIBLE. (FIG. 5)



Shoreline Ground Warning: IF POWER SUPPLY IS NOT PROPERLY GROUNDED YOU MAY EXPERIENCE A DANGEROUS SHOCK WHEN STANDING ON THE GROUND AND TOUCHING A METAL PORTION OF THE MOTOR HOME. USE A CONTINUITY TESTER TO ENSURE PROPER GROUNDING.



Extension Cord Warning: DO NOT USE AN EXTENSION CORD WITH A CURRENT RATING LESS THAN THE AMPERAGE YOUR RECREATIONAL VEHICLE REQUIRES. EXTRA EXTENSION CORDS REDUCE THE AMPERAGE AND VOLTAGE BEING SUPPLIED TO THE RV AND MAY CAUSE DAMAGE TO ELECTRICAL COMPONENTS!

(FIG. 5) 110-V SHORELINE CONNECTION

30-AMP AND 50-AMP 110-VOLT SERVICE

30-amp service is 110-volt service limited to a total of 30 amps of draw. A large three pronged power supply cord identifies this type of power supply (FIG. 5). Each appliance in your recreational vehicle is capable of working by itself with this type of service. However, you may not be able to operate all your appliances at the same time without causing a circuit breaker to blow.

A typical component in your recreational vehicle such as a TV or VCR will draw only about 1 amp. Other items such as coffee makers and microwaves will draw 10-15 amps when used. Roof air conditioners usually draw the most, pulling up to 15 amps when the compressor is running. So as you can see, with 30 amp service, you can use only one air conditioner when hooked up to shore power even if your recreational vehicle is equipped with two. The combined draw of two air conditioners may only be 29 amps, but other items in your recreational vehicle such as converters, refrigerators, water heaters, etc. will put your draw over the 30-amp mark causing a circuit break. You may be asking yourself, "Why then did Gulf Stream install two a/c's if I can only use only one at a time?" This is done so that you can direct more cold air to the front or rear of the vehicle if you desire. Plus, usually they both can be operated while using your generator.

30-amp service is the most common electrical service in the RV industry and can be found at most, if not all, RV campgrounds. This makes 30-amp service the most user friendly as far as availability. If your vehicle is equipped with 50-amp service, you will be able to run any installed appliance at any time when a 50-amp service park is available or you are running your generator.

50-amp service is also 110-volt service, but it is capable of running up to 50-amps of draw. Some people believe that 50-amp service is the same as having 220-volts of ac power. Yes, 50-amps of service does have 220-volts, but only 110-volts is capable of being supplied to any part of your system at any given time. A four pronged power cord that is very unique identifies 50-amp service, as two of the four prongs each carry 110-volts of ac power. 30-amp service has only one prong that carries 110 volts of ac power. Each of the 110-volt lines in a 50-amp cord supplies power to a designated part of your RV. In doing this, when a/c powered components are installed they can be put on separate power feeds according to how much amperage they draw. One example of this method consists of installing two air conditioners for use at the same time. Each one is powered by a different power supply feed; therefore they both can be used simultaneously. Think of 50-amp service as having two shoreline power cords in one casing as opposed to only one in 30-amp service.

If you travel to an RV park that does not offer 50-amp service you will have to use an adapter to hook up to shore power. Use of an adapter is not recommended, but may not be avoidable. When using an adapter, remember that your coach will not have sufficient power to run as many options as with 50-amp service. You may be able to run both your air conditioners for a limited time; however, this will cause damage to both your ac units as well as other components by operating them on insufficient power.

Listed below are components that might be used in Gulf Stream recreational vehicles and the maximum amperage draw each one has. Whether your power supply is 30-amps or 50-amps this chart may help you decide which components you can safely use for an extended period without damage.

Components	Amperage
Roof air conditioners (each)	15
Electric water heater	12
Microwaves	15
Hair dryer	2
Washer/dryer	10
Vacuum	5
TV	1.0
VCR	1.0
Engine block heater	10
Heart Inverter/Charger	22
Magnetek charger	14
Refrigerators	3.5
Space heaters	10-15
110-volt lamp	1.0

POWER CONVERTER

Your recreational vehicle is equipped with an electrical power converter that changes 110-volt power to 12-volt power to run 12-volt powered appliances in your vehicle. It gets the 110-volt power by way of the shoreline or the optional generator. The power converter will be located either under the side of the rear bed, under the refrigerator or at the base of a cabinet (FIG. 6).



The circuits in the recreational vehicle are protected by circuit breakers and fuses. Locate the converter and see where the fuses are located. If you blow a fuse, turn off the appliance. Unplug the fuse. Check the fuse for breakage and replace it with a new fuse of the proper rating. If the fuse continues to fail, contact your nearest Dealer. NEVER REPLACE A FUSE WITH A HIGHER RATED FUSE THAN WHAT IS DESIGNATED.

(FIG. 6) 45 AMP CONVERTER PANEL

GROUND FAULT INTERRUPTER



Your recreational vehicle is equipped with a Ground Fault Interrupter that will stop the current in the event of a short. If you find that 110v AC power is missing at any receptacle of the motor home, first check to see if the GFI button has been tripped. Then check the breaker panel (FIG. 6). If the GFI button has been tripped, you may have a short in your circuit. Please have a professional test and repair as needed.

(FIG. 8) GFI RECEPTACLE

BATTERY

The recreational vehicle has two or more batteries on board. Both are maintained in the same manner. Check the electrolyte fluid levels on a regular basis, especially during hot weather conditions. Refill as necessary with either

distilled water or clean tap water in an emergency. DO NOT ALLOW THE FLUID LEVELS IN THE BATTERIES TO FALL BELOW THE INTERNAL BATTERY PLATES. DAMAGE TO THE BATTERIES MAY RESULT AND SHORTEN THE LIFE OF THE BATTERIES.

When charging the batteries, do not charge at such a fast rate as to cause spewing of the electrolyte from the cells. However, do charge the battery with the cell vent caps off. Some vehicle applications use maintenance free batteries, and therefore this section may not apply.



WARNING: NEVER USE AN OPEN FLAME AROUND BATTERIES. AVOID MAKING ELECTRICAL SPARKS. FUMES FROM THE BATTERY ARE COMBUSTABLE. KEEP AN EYE OUT FOR CORROSION ON THE BATTERY TERMINALS. CORRODED TERMINALS CAN CAUSE A LOSS OF AVAILABLE POWER AS WELL AS CUT DOWN ON THE EFFICIENCY OF THE CHARGING/ELECTRICAL SYSTEM. THIS COULD LEAD TO A SITUATION WHERE THE BATTERY IS NOT CHARGED ENOUGH TO START THE RECREATIONAL VEHICLE.

If your batteries have problems prior to the end of their warranty period, consult the nearest representative of the battery manufacturer.

When it is time to replace the batteries, be sure to replace them with quality batteries of equal electrical and physical properties. Contact your nearest dealer for advice in the selection of new batteries.

BATTERY TYPES AND CHARGING

Only similar batteries should be connected together in one bank. Do not connect old and new batteries, or wet and gel cell batteries together. Deep-cycle batteries are usually rated in Amp-hours, which is based on a 20-hour discharge rate. Therefore, a 100 amp-hour battery can deliver 5 amps for 20 hours. Deep-cycle batteries can be discharged about 80% of capacity before damage occurs. Shallow cycling (50%-60% drain before recharge) will result in much longer battery life. To find out how long your batteries will last when using various equipment in your recreational vehicle, research the amperage of the items in use, and use that number to gauge what size amp-hour battery you think you need. Keep in mind that you should recharge your batteries when they are 50% discharged, so only half of the amp-hour rating is actually used.

Completely charging wet cell deep-cycle batteries requires the battery voltage to be raised beyond what is known as the gassing point. This is the voltage at which the battery begins to bubble and gas is given off. If charging stops short of this point, sulfate is left on the plates and deterioration of the battery begins. The gassing point will vary with battery temperature. At 77 degrees F, the gassing point of a 12-volt battery is about 14.0 volts.

ON-BOARD AUXILIARY POWER GENERATOR (OPTIONAL)

This unit provides 110-volt power to the converter as well as charges the RV battery. Read over the manufacturer's owner's manual for the unit's operation and care/maintenance.

The recreational vehicle runs on gasoline, LP gas, or diesel fuel depending on your chassis and the model generator selected. BE SURE TO CHECK THE OIL LEVEL OF THE GENERATOR AT REGULAR INTERVALS. Most generators require monthly exercising to prevent internal damage. Again, due to the many different generator options, we recommend that you fully review the generator manufacturer's owner's manual for the unit's operation and care/maintenance and proper use.

INVERTER

Inverters are much like converters, only they perform the exact opposite functions. Inverters take 12-volt DC battery power and invert it to 110-volt AC power. Using the inverter can drain a fully charged battery in as little as two (2) hours, depending on what appliances are being used. Therefore, inverters are usually used sparingly. The inverter switch should remain in the "off" position on the inside panel, unless using the inverter mode. The inverter/converter will still charge your batteries when in the "off" position and the coach has 110 volt shore power. If the switch is left on, as soon as you unplug the recreational vehicle you will start draining your batteries. Also, if for some reason you loose your shoreline power source without your knowledge, the inverter will automatically take over and after a few hours your batteries could be completely drained.

When batteries are drained this low it takes at least 24 hours of slow charging to bring them back to a "charged" status. The inverter is installed as a temporary means of supplying 110 volt power. You can watch TV for several hours, or run small appliances for a short period of time. Appliances with heating elements (ceramic heaters, blow

dryers, curling irons, clothes irons, etc.) will drastically shorten the amount of power supply from the batteries. The inverter and battery bank is not designed to sustain the coach for long periods of time.

If you have the inside control panel option, leave the exterior switch located on the inverter in the "off" position at all times. Check your inverter operator's manual for proper use of the inverter.

MONITOR PANEL

Your recreational vehicle has an electrical panel that can provide you with important information about various systems on the recreational vehicle including the condition of your batteries.

The panel is most often located above the stove or on the wall near the stove. The monitor panel will give you information including:

- How much potable (fresh) water remains.
- How full your black (sewage) tank is.
- How full your gray (waste water) tank is.
- How much LP gas is in your LP tank.
- How much charge your chassis and house battery have.

The monitor panel can give a false reading on the waste tank (black and grey) levels if those tanks have not been properly flushed or recently cleaned.

TV ANTENNA AND CABLE CONNECTIONS

Usually each coach is equipped with three (3) signals to choose from. Satellite, cable and air (antenna). You can select which source you want for each TV by using the optional source selector box.



(FIG. 10) TYPICAL VIDEO CONTROL BOX

If you have a bad reception, perform the following checks:

- Check with neighbors to see how good local cable and antenna reception has been.
- Make sure selector switch is set properly.
- Turn the antenna booster on.
- Set your TV to receive "Air" or "Cable", whichever signal you are watching.
- Check all cable ends to make sure that no ground strands are touching the center cable wire.

If you have no reception at all, perform the following checks:

- Follow all steps above.
- Some recreational vehicles have a cable splice in the back of the refer cabinet. Access this splice from outside and make sure the connection has not been compromised.
- Use a continuity tester to ensure that all cables are hooked up properly.
- Contact your local service center or park manager for assistance.

LP GAS

GENERAL

The liquid Petroleum gas system in your recreational vehicle furnishes fuel for various appliances. It is comprised of propane (LP) gas. LP gas provides an efficient and inexpensive source of energy.

The gas is stored in a pressure tank located on or under the chassis of your recreational vehicle. Under pressure, the LP gas turns to vapor; it is this vapor that burns.

Each tank has an automatic eighty percent stop-fill valve that allows space in the tank for vapor expansion. The high pressure of the vapor in the tank is reduced in two stages as it makes its way to your appliance. The tank pressure will vary with temperature and altitude, but it may be in the range of 100 to 250 pounds per square inch (psi) or more. It is reduced by a pressure regulator to about 12 psi in the first stage and then to about 6.25 ounces in the second stage. The 6.25 ounces psi can also be expressed as 11 inches of water column.

The LP gas system is designed and built to rigid standards and tested before leaving the factory. Your Dealer also tests the system prior to customer delivery.

NOTE: YOUR DEALER IS RESPONSIBLE FOR A THOROUGH LP GAS SYSTEM CHECK PRIOR TO DELIVERY. DO NOT ACCEPT THE RECREATIONAL VEHICLE UNTIL THIS CHECK HAS BEEN COMPLETED.

Except for simple maintenance and occasionally tightening a connection, you should take your recreational vehicle to an authorized Dealer for LP gas problems. The LP gas tank should always be filled by an authorized LP supplier.

IMPORTANT DISCLAIMED: RECREATIONAL VEHICLE MANUFACTURER IS NOT RESPONSIBLE FOR PERSONAL INJURY OR PROPERTY DAMAGE RESULTING FROM IMPROPERLY MAINTAINED LP GAS APPLIANCES AND SYSTEMS.

CAUTION: READ LP GAS PRECAUTIONS IN THE FRONT OF THIS MANUAL. BECOME FAMILIAR WITH THEM AND MAKE SURE THE OCCUPANTS, GUESTS AND OTHERS ARE COMPLETELY AWARE OF THE SAFETY ASPECTS OF LIVING AROUND LP GAS.

CLIMATE DIFFERENCES

The appliances in your recreational vehicle will not function if the LP gas does not vaporize. Propane will continue to vaporize down to –44 degrees F.

Propane has become the main type of LP gas used in RVs in recent years. **BUTANE SHOULD NOT BE USED**. The LP gas dealer will have the correct type or blend for his locale. If you plan on traveling from a warm climate to a cold climate, check with your local gas dealer to see if the blend supplied is appropriate for the part of the county you plan on visiting.

OPERATION



To operate any LP gas appliance, the LP gas tank's service valve must be OPEN (FIG 11). When first used, or after a refill, there may be some air in the gas lines that will escape when the range burner or similar gas valve is opened. The air may extinguish the match or igniter the first time or two you attempt to light a stove burner. Also remember that when you close the tank's service valve, some gas will remain in the lines. To completely bleed the lines of gas, close the tank valve and light the range burner. When the flame burns out, turn off the appliance.

(FIG 11). LP GAS TANK

FILLING THE LP TANK

Make sure that all burners and pilot lights are turned OFF prior to having a gas supplier refill your LP tank.

Drive your unit to the LP supplier for filling. Never remove the tank from the unit. The supplier will connect his fill nozzle to your unit's LP tank FILL VALVE.

When the tank is being filled, the service valve must be CLOSED. The 20 percent LIQUID LEVEL GAUGE must be OPEN.

The 80 percent STOP FILL VALVE may close the valve before liquid appears at the 20 percent liquid level gauge, but if liquid does appear, stop filling immediately...the tank is filled to its LP capacity.

Do not use a wrench to tighten the service valve or the 20 percent gauge. They are both designed to be closed leaktight by hand. If you cannot hand-tighten the valve, the valve may need repair or replacement. Consult your gas dealer.

YOUR LP TANK MUST BE KEPT FREE OF RUST AT ALL TIMES. IF RUST DOES DEVELOP, THE TANK SHOULD BE CLEANED COMPLETELY FREE OF THE RUST, PRIMED, AND PAINTED WHITE (OR SOME OTHER HIGHLY REFLECTIVE COLOR) WHICH WILL HELP TO REDUCE EXPANSION OF THE LP GAS BECAUSE OF HEAT.

GAS LINE CHECK

Check the gas line connection and all other connections regularly. To check, turn OFF all burners and pilot lights. Open all doors and windows. OPEN the LP gas tank service valve and use soapy water or an approved leak detector fluid to test all line connections. Do not use products that contain AMMONIA or CHLORINE. The appearance of bubbles in the soapy solution indicates a leak. Tighten the connections with two (2) open-end wrenches until the bubbles stop. If this does not take care of the leak, contact your gas dealer. DO NOT OVERTIGHTEN. (FIG. 12)



REGULATOR PRESSURE

Have the gas regulator checked at the beginning of each season and whenever a problem occurs. Proper line pressure is 11 inches of water column. Your Dealer or gas supplier can perform this needed check.

GAS TANK AND REGULATOR FREEZE-UP

LP gas regulator freeze-up can be prevented if owners are aware of its causes. Freeze-up may be caused by one of these things: moisture in the tank, an overfilled tank or a greater vapor withdrawal demand than the tank can deliver at a particular temperature.

Freeze-up occurs more frequently in cold weather since liquid gas does not vaporize as quickly. This, along with a higher demand, can cause frosting of the tank and regulator. Be sure to have your LP gas supplier add ANHYDROUS METHANOL before filling the tank in cold weather.

Moisture may enter the tank in the LP gas through condensation if air is allowed to enter the tank through an open valve. This can be avoided by using moisture-free gas and keeping all tank valves CLOSED during storage. If moisture is present, have the tank purged by an authorized dealer and have him add the proper amount of ANHYDROUS METHANOL for your tank.

An overfilled tank can allow liquid gas, rather than the needed vapor, to flow through the regulator. This can result in erratic regulator delivery pressure, improper appliance operation and possible frosting of the regulator and gas line. This can be avoided by following the procedures outlined in "Filling the LP Tank." Always contact your local gas supplier for current procedures.

HOSE REPLACEMENT

The flexible LP gas hoses connected to your LP tank should be checked regularly for signs of deterioration and may need to be replaced every two to three years. Be sure to replace the hoses with approved and properly rated products.

REGULATOR VENT MAINTENANCE

Since the LP gas regulator is equipped with a vent that allows the system to "breathe," you must check it on a routine basis to see that it does not become clogged. If dirt, sealant or corrosion clogs the vent, clean it with a toothbrush or similar device. At least once a year have your LP serviceman check the regulator for adjustment and operation.

PLUMBING

FRESH WATER

Fresh water for your recreational vehicle is provided by filling the FRESH WATER TANK or by hooking directly to a city water connection. These sources supply water to the kitchen sink, shower, lavatory, toilet and water heater. (FIG. 13)



CITY WATER

Open the CITY WATER INLET DOOR and connect a hose to a city pressurized water faucet and to the recreational vehicle's CITY WATER INLET. Some models have a separate water fill for the FRESH WATER TANK. Others have a selector switch to select either LOCAL SUPPLY or FRESH WATER TANK. To use CITY WATER make sure the selector is set to LOCAL SUPPLY. The fresh water tank and water pump are by-passed when the city water hook-up is used.

CAUTION: A PRESSURE REGULATOR SHOULD ALWAYS BE USED WHEN CONNECTING TO CITY WATER. EXCESSIVE WATER PRESSURE CAN DAMAGE LINES AND CONNECTIONS, CAUSING WATER DAMAGE TO YOUR RV. MAKE SURE WATER PRESSURE NEVER EXCEEDS 60 PSI.

WATER TANK

UNLOCK the GRAVITY WATER FILL HATCH and use a hose or vessel to fill the water tank. Or, select FRESH WATER TANK after hooking the hose to the CITY WATER. Watch your monitor panel inside to determine when the tank is full.



WARNING: NEVER LEAVE YOUR RECREATIONAL VEHICLE UNATTENDED WHEN FILLING THE FRESH WATER TANK! ALTHOUGH PROPER VENTING IS ALLOWED FOR OVERFLOW, THE WATER PRESSURE CAN EXPAND THE TANK AND CAUSE STRUCTURAL DAMAGE AND A POSSIBLE EXPLOSION RESULTING IN DEATH OR INJURY!

Use only fresh, potable water in the storage tank. To insure that the tank is clean, drain after each trip. Sanitize the tank when new, whenever contamination is suspected, or whenever it has not been used for a long period of time.

QUICK FILL WATER SUPPLY

Some recreational vehicles come equipped with a Quick Fill water supply (FIG 13A) connection for supplying local water and filling the water holding tank. With this system, to fill the water tank connect the water supply hose to the female water hose fitting located inside the waste holding tank compartment. Select "fill" on the blue Quick Fill lever, which may be located on the opposite side of the recreational vehicle, and turn on the water supply. Watch the inside monitor until the water tank reads full. Do not leave the recreational vehicle unattended while filling the fresh water tank. To select local water supply, simply turn the blue Quick Fill selector lever to the "local supply" position.



(FIG 13A) QUICK FILL WATER SUPPLY LEVER

SANITIZING THE WATER TANK

As approved by the U.S. Public Health Service

To assure complete disinfection of your potable water system, it is recommended that the following procedures be followed on a new system, one that has not been used for a period of time, or one that may have become contaminated. This procedure is also recommended before long periods of storage such as over the winter.

1. Prepare a chlorine solution using 1 gallon of water and $\frac{1}{4}$ cup of household bleach (sodium hypochlorite solution). With tank empty, pour chlorine solution into the tank. Use 1 gallon solution for each 15 gallons of tank capacity. This procedure will result in a residual chlorine concentration of 50 PPM in the water system. If a 100 PPM concentration is required as discussed in item 3, use $\frac{1}{2}$ cup of household bleach with 1 gallon of water to prepare the chlorine solution. One gallon of the solution should be used for each 15 gallons of tank capacity.

2. Complete filling of tank with potable water. Open each faucet and run the water until a distinct odor of chlorine can be detected in the water discharged. Do both hot and cold water taps.

3. Allow the system to stand for at least 4 hours when disinfecting with 50 PPM residual chlorine. If a shorted time period is desired, then a 100 PPM chlorine concentration should be permitted to stand in the system for at least 1 hours.

4. Drain and flush with potable water.

WATER PUMP



Turn the faucet on when you want water. The pump will run only as long as needed. If the pump fails when the switch is ON, check the fuse located in the converter. If the pump continues to operate whether the faucet is open or closed, check the water tank to see if it is empty and check to see if there is a leak in the system.

DO NOT RUN THE WATER PUMP WITHOUT WATER IN THE SYSTEM. ALWAYS KEEP THE PUMP SWITCH OFF WHEN THE SYSTEM IS EMPTY OR WHEN CONNECTED TO CITY WATER. RUNNING THE PUMP DRY CAN DAMAGE IT AND VOID THE WARRANTY.

SECONDARY WATER PUMP SWITCH

Some recreational vehicle models have a second water pump switch located in the bathroom near the lavatory sink. This switch will turn on the water pump whether the main water pump switch is on or off.

WINTERIZING THE WATER PUMP

With the water drained from the potable water tank, disconnect the water pump outlet hose and then turn the pump on to allow the remaining water to be pumped out (less than one cup).

If you desire, you can blow out the water lines with compressed air by opening al valves and placing the air nozzle into the system where the outlet hose has disconnected. Replace pump hose.

WATER MANIFOLD SYSTEM (USA ONLY)

The water manifold system installed on some class A models directs a separate hot and cold water line to each fixture in the recreational vehicle. Therefore, if you wish to change your kitchen sink faucet, you need only to shut off the supply lines labeled "Kitchen sink." This will allow water supply to all other fixtures during service or replacement. The water manifold is located in an exterior compartment. To activate water on a specific valve, use the provided key and turn the lever until it is lined up with the indicated arrows (left/right). To shut off water supply to a specific line, turn the key ¼ turn in either direction (up/down). Note that both the hot and cold lines must be turned off for removal of plumbing fixtures.

WINTERIZING BYPASS ON WATER MANIFOLD

The water manifold is designed to also act as a bypass for the water heater when winterizing the recreational vehicle. To bypass the water heater, turn the cold #9 valve off, and the hot #9 valve on.

DRAINAGE AND SEWER

Your recreational vehicle has a Drainage/Sewer system that operates much the similar to that of home. How extensive the system depends on your recreational vehicle model and the options you obtained. It includes a drain line from the kitchen sink and shower to a GRAY WATER HOLDING TANK. There is also a marine toilet and lavatory that empties into a separate BLACK WATER HOLDING TANK. Which tank each sink drains into may vary from one model to another.

The drainage system also includes vents that carry odors caused by drain water and waste out of the recreational vehicle, while also equalizing air pressure. Drain clean outs are provided to clean lines between fixtures and holding tanks.

DRAINAGE P-TRAPS

By code, all drains are equipped with P-traps to keep holding tank odors from entering the recreational vehicle. If you detect a foul odor, which you believe is from your holding tanks, add water to all drains to ensure that your P-traps water hasn't evaporated from long term storage. Places to add water include the Kitchen sink, Bathroom sink, shower/tub, wet bar sink, and the washer/dryer drain.

HOLDING TANKS

Your unit has a GRAY WATER HOLDING TANK and a BLACK WATER HOLDING TANK. The tanks should be emptied frequently, or as indicated on the monitor panel. The tanks should always be emptied at a special DUMPING STATION. Most campgrounds and highway rest stops and many gasoline stations are equipped with proper DUMPING STATIONS.

NOTE: MOST STATES HAVE LAWS PROHIBITING EMPTYING SEWAGE ANYWHERE BUT AN APPROVED DUMPING STATION.

While camping it is normal practice to leave your GRAY WATER HOLDING TANK valve open if your campsite is equipped with sewer hook-up. NEVER leave the BLACK WATER TANK valve open while using the recreational vehicle. Since the system utilizes gravity to empty, the BLACK WATER TANK will not drain properly unless is has sufficient liquid to help drain out the solids.

EMPTYING HOLDING TANKS

To empty the holding tanks, be certain that your recreational vehicle is level since this process depends upon gravity. Remove the sewage drain hose from its storage location. Remove the cap from the termination outlet and connect the drain hose (FIG. 15). NOTE: DRAIN THE TOILET (BLACK) HOLDING TANK FIRST.

To drain either holding tank, pull out the

TERMINATION VALVE (FIG. 15) by pulling out the dump valve slide handle. Close the valve after the tank has drained. Flush or pour about two gallons of water through the toilet when emptying the black tank

and drain again. This flushes the tank and helps



clean the drain hose. Repeat as necessary. Follow the same procedure for the GRAY WATER HOLDING TANK. A repeat flush is not necessary. When the tank is empty, push the dump valve handle in until it seats. Remove the hose, wash and replace it in its storage location. Replace termination outlet cap.

HOLDING TANK MAINTENANCE

Keep your tanks well flushed out when the recreational vehicle is not in use. Allowing the tank to sit with any contents for more than a couple of days will ensure some sort of build-up on the monitor probes in the side of the tank and future monitor reading problems, even if this is the first time you have used your recreational vehicle. One way to help flush them out is to drain them at the campground, then fill each tank half full of water for the trip home. The constant agitation while driving home usually does a good job of cleaning the tanks. Then, before you plan to store the recreational vehicle or stop for a while, stop at a local approved dumping station and drain the tanks completely.

When camping there are a few things you can do to help facilitate the cleaning process later. First, you should always use some type of chemical additive in your holding tanks specifically designed for RV use. These types of chemicals will break down the contents of the tanks and help ensure good drainage. In addition, try using tissue designed for recreational vehicles. It will break down more than residential style tissues, and usually never clogs your drain valves.

DO'S AND DON'T OF HOLDING TANK USE

- **DO** Clean the holding tank with an approved cleaner.
- **DO** Add a special chemical additive to sanitize and improve tank action.
- **DO** Guard the tank against Freeze-up.
- **DO** Keep the dump valves closed to allow the tanks to get as full as possible to facilitate drainage.
- **DO** Keep the dump valve closed and the drain cap in place to allow the use of the system when not parked at a campsite.
- **DON'T** Put Facial tissues, paper, automotive type anti-freeze, sanitary napkins, diapers or household toilet cleaners in your holding tank.
- **DON'T** Put foreign objects in the system that could clog or damage it in any way.
- **DON'T** Use the toilet while driving down the road. All occupants must remain seated with a secure seatbelt while the vehicle is moving. Further, the vacuum caused by the high-speed movement of the vehicle will cause the toilet to act as a vent when flushed, causing severe odors in the vehicle and possibly spraying waste into the interior of the coach.

HOLDING TANK FLUSH SYSTEM (OPTIONAL)

The optional holding tank flush kit is installed on the gray and black water holding tank system. To use this system, connect a water hose to the flush kit hose located inside the holding tank dump valve compartment. Note that the lever used on this system is not an "on/off" lever, but rather a selector for which tank you wish to flush. After connecting your water hose, turn on the water to begin flushing your tank. For best results leave the dump valves closed until you have flushed each tank. Do not leave the flush system unattended, unless you decide to leave your dump valves open.

The optional glass container on the flush system hose is used to house a sanitation tablet for sanitizing each tank. Tablets are available at most RV dealers or RV parts stores.

WATER SYSTEM WINTERIZING

NOTE: READ THIS BEFORE WINTERIZING YOUR WATER SYSTEM.

If your recreational vehicle is going to be stored unheated in temperatures that COULD GO BELOW FREEZING, the fresh water and waste systems must be winterized.

Follow this procedure:

- 1. Drain the fresh water tank.
- 2. Drain pipes by turning the water pump ON and opening a cold water faucet. Wait for the water flow to stop. Turn pump OFF. Leave faucets OPEN.
- 3. Turn ON all faucets and OPEN the HOT and COLD WATER PIPE DRAIN VALVES. Leave these valves in the OPEN position. These valves are located either under the galley sink or in an exterior compartment, and permit the water to drain onto the ground below the RV.
- 4. OPEN the WATER HEATER drain valve located at the bottom of the heater (or remove plug). Let the water drain out. OPEN the heater SAFETY VALVE.
- 5. Flush the toilet.
- 6. After each faucet has been opened, drained and closed, CLOSE the WATER LINE DRAIN VALVES.
- 7. Drain the WASTE WATER HOLDING TANK.
- 8. Double check that ALL WATER has been drained.
- 9. Secure all protective caps including the water tank filler, city water inlet and waste drain outlet.

CAUTION: DRAINING THE WATER SYSTEM ALONE MAY NOT BE ENOUGH TO PROVIDE COMPLETE COLD WEATHER PROTECTION FOR AN RV UNIT THAT WILL BE STORED IN AN UNHEATED ENVIRONMENT WHERE TEMPERATURES DROP BELOW FREEZING. CONSULT YOUR DEALER FOR MORE INFORMATION ON THE BEST METHOD OF WINTERIZING YOUR VEHICLE.

Recreational vehicles equipped with a winterization siphon hose should use it to pump RV anti-freeze into the plumbing system. Always pour a cupful of RV anti-freeze into each drain after your coach has been winterized.



WARNING: DO NOT USE AUTOMOTIVE ANTI-FREEZE OR WINDSHIELD WASHER FLUID ANTI-FREEZE IN THE RECREATIONAL VEHICLE WATER SYSTEM. THESE ARE HARMFUL OR FATAL IF SWALLOWED. THE DEALER CAN PROVIDE YOU WITH SPECIAL ANTI-FREEZE THAT IS SAFE AND APPROVED FOR RV WATER SYSTEMS. ALWAYS FOLLOW MANUFACTURER'S INSTRUCTIONS FOR THESE ADDITIVES.

APPLIANCES



WARNING: THE HOT WATER HEATER AND FURNACE USE LP GAS AS FUEL, AND IN THE COURSE OF NORMAL OPERATION HAVE PARTS/SURFACES THAT BECOME VERY HOT AND ALSO EMIT COMBUSTION GASES. BE CAREFUL TO ALWAYS FOLLOW MANUFACTURER'S RECOMMENDATIONS ON VENTILATION AND DO NOT TOUCH THE AIR EXHAUST PORTS OR ALLOW ANY MATERIAL TO COVER THEM OR EVEN COME IN CONTACT WITH EITHER THE INTAKE OR EXHAUST OF THESE APPLIANCES. WHENEVER YOU OR SOMEONE IN YOUR VEHICLE SMELLS LP GAS, TAKE PRECAUTIONS

WATER HEATER

NEVER IGNITE THE HOT WATER HEATER WITHOUT FIRST FILLING IT WITH WATER! FAILURE TO FOLLOW THIS PROCEDURE MAY PERMANENTLY DAMAGE YOUR WATER HEATER.

The water heater is accessed by a panel on the outside of the vehicle (FIG. 18). Turn on the hot water faucet at the galley sink to see if the tank is full. Operating instructions can be found in the water heater owner's manual.

NOTE: ONLY QUALIFIED TECHNICIANS SHOULD PERFORM SERVICE ON THE WATER HEATER. IF NOT SERVICED PROPERLY A FIRE COULD OCCUR.



(FIG. 18) WATER HEATER

RANGE

Also operated with LP gas are the range burners and the oven. The basic operation is the same as the units in your home except that extra care must be taken to provide adequate ventilation in your recreational vehicle. Similar to a residence or home, the recreational vehicle has limited air space, thus, a limited amount of oxygen available for combustion.

WARNING: DO NOT USE OPEN FLAMES, SUCH AS THE RANGE BURNERS, TO WARM THE LIVING AREA OF THE RV. THE FLAMES CONSUME THE OXYGEN IN THE RECREATIONAL VEHICLE AND COULD RESULT IN ASPHYXIATION.

Always provide adequate ventilation when using the range and oven. It is always best to use the range exhaust hood and open a window slightly.

Your owner's packet contains owner's manuals for the oven and range. Read these over carefully to become familiar with the safe operation of these appliances.

MICROWAVE

The optional microwave is similar found in a home or office. It relies on 110-volt power for operation and should never be used while driving down the road. Read over the microwave oven's owner's manual to find all the information on its operation and cleaning.

REFRIGERATOR

The refrigerator in your recreational vehicle can be operated on LP gas and 120-volt AC electricity. Read over the refrigerator manufacturer's owner's manual provided in your owner's packet before putting the refrigerator into operation.

The refrigerator will not operate correctly if the recreational vehicle is not level while parked. The refrigerator coolant will not circulate properly if the recreational vehicle is not level.

For best results, make sure the outside sidewall vent and roof vent are always clear of debris. Without proper circulation of the rear coils the unit will not keep food cold.

Upon initial operation, or after being stored, the refrigerator it could take up to 24 hours before the unit is cool enough for use.

When being used on the 110 AC setting, the refrigerator circuit board still requires 12 volt operation. Make sure your batteries have sufficient charge prior to operation.

FURNACE

Your recreational vehicle is equipped with a forced-air furnace similar to the type found in most homes with the exception that it is fueled by LP gas. Each recreational vehicle is equipped with a wall mounted thermostat that controls the temperature. An operating manual for the furnace is included in your owner's packet.

The furnace is designed to have un-obstructed airflow from all its vents, including interior and exterior. If any vent is blocked the furnace may shut itself off.

The furnace igniter is powered by your 12-volt battery system. If the system battery is low the furnace blower will come on, however the furnace will not ignite. Make sure you have sufficient battery power before operating the furnace.

Your furnace is designed to sustain a desired temperature in the vehicle at most times. Due to varying weather conditions, the furnace may not be able to keep up with sub-freezing temperatures. The amount of vehicle occupants and the position the recreational vehicle is parked may help or hinder the furnace's ability to keep up with freeze conditions. Consult the furnace owner's manual for more information.

WARNING: DO NOT SUPPLEMENT THE FURNACE WITH ANY PORTABLE FUEL-BURNING APPLIANCE FOR HEATING THE INTERIOR OF THE MOTOR HOME. THESE APPLIANCES ARE NOT SAFE; ASPHYXIATION/CARBON MONOXIDE POISONING IS POSSIBLE IN ANY SMALL, WELL-SEALED SPACE.

AIR CONDITIONER (ROOF)

Many recreational vehicles are equipped with a roof air conditioning system that works with electrical power from either a shore line or a portable generator.

Air conditioners are capable of cooling air a maximum of 18 to 22 degrees in a 50% humidity environment. As the humidity goes up, the cooling difference goes down. If the temperature inside your recreational vehicle is 100 degrees when you turn on the air conditioner, it will only put out 80 degrees. Eventually the air inside the recreational vehicle will cool, and as it cools the air put out by the air conditioner will also cool. However, when starting out at 100 degrees, this cooling could take several hours before it reaches your desired temperature. Therefore, if you know the weather will be hot, turn your air conditioner on early.

The two most common complaints with roof air conditioners are they won't turn on at all, or when they do turn on, they won't put out cold air. Obviously, if the unit won't turn on you may have a problem with something other than the air conditioner. Always make sure you have sufficient power to run each air conditioner you plan on using. If your power source has only 30-amp service, you can run only one (1) air conditioner at a time. Using an adapter to plug in your 50-amp cord to 30-amp service doesn't allow the use of both AC's either. Most AC's require a minimum of 13 amps to operate properly. Although the amperage of two AC's running at the same time doesn't add up to 30 amps, other components in the recreational vehicle, such as the converter, refrigerator, VCR (draws amps simply by just being plugged in), etc., draw enough amperage to push the total amp load over the 30 amp mark. If you desire to run both AC's in a 30-amp environment, try running your generator instead of using shore power. Run both AC's off the generator until the recreational vehicle cools off, then use shore power to run only one AC, which by itself will usually maintain a cool temperature inside the recreational vehicle.

ROOF EXHAUST FAN OPERATION

The ceiling fan used in your recreational vehicle is designed to ventilate the interior when cooking or if the use of your air conditioner is not desired. If used properly the roof fan can cool the interior by as much as 15 degrees within a short period of time. When used in the exhaust mode, the fan pulls hot air from high inside the recreational vehicle and will pull fresh air from an open window. This fan is usually controlled by a wall-mounted thermostat (some models have a thermostat built right on the fan), which must be turned on and adjusted to your desired temperature before use. The wall-mounted thermostat is not the same that is used for the furnace or air conditioners. Please review the supplied fan owner's manual for additional operating instructions.

Effects of Long Term Occupancy

FORMALDEHYDE

If you notice an odor in your recreational vehicle – it could be formaldehyde

Formaldehyde is a common naturally occurring compound and is commonly found in many products, see a sample list below. It is a colorless gas that is released from a variety of sources. Formaldehyde can be found in a variety of everyday products in your home, such as:

Household Products: cleaning solutions, dishwashing liquids, fabric softeners, shoe-care agents, carpet cleaning solutions, adhesives

Personal Care Products: nail polish, cosmetics, shampoos, antiperspirants

Fabrics: clothing, linens, draperies

Appliances: gas appliances, kerosene stoves

Tobacco Products: cigarettes, cigars

Building Materials: particleboard, plywood cabinets, and wall and floor materials, wallpaper, some other paper goods, paint coatings

As a result, **recreational vehicles**, mobile homes, manufactured homes, new homes, offices, new automobiles, and recently remodeled homes are more likely to contain higher levels of formaldehyde. Over time, formaldehyde dissipates and the odors and the effects significantly decrease or disappear.

What can I do to reduce formaldehyde in my recreational vehicle?

- **Increase ventilation.** Adequate ventilation (fresh air exchange) reduces or eliminates any or all of the above stated symptoms. Always be sure to ventilate your recreational vehicle prior to and during use, especially after storage and during hot, humid weather. We recommend opening windows and running ventilation fans as much as possible during the initial break-in period.
- **Keep indoor temperatures moderate.** As the temperature rises, the effects of formaldehyde may be more noticeable. You can use the air conditioner to keep temperatures relatively low, which will help lower the formaldehyde effects and odors.
- Lower the humidity. You can decrease the rate at which formaldehyde is released from pressed wood and other products by lowering the humidity in your recreational vehicle. Humidity should be maintained at about 40% to 50% relative humidity in the home.
- **Do not smoke inside.** Tobacco smoking produces formaldehyde and other toxic chemicals.



WARNING: All recreational vehicles are built with some materials that emit formaldehyde. Eye, nose and throat irritations, headache, nausea and a variety of asthma-like symptoms, including shortness of breath, have been reported as a result of formaldehyde exposure. Elderly persons and young children, as well as anyone with a history of asthma, allergies, or lung problems may be at greater risk. Research is continuing on the possible long-term effects of exposure to formaldehyde.

If you have questions regarding the health effects of formaldehyde, consult your doctor or local health department. Adequate ventilation normally reduces or eliminates any or all of the above problems. Always be sure to ventilate your recreational vehicle prior to and during use, especially after storage and during hot, humid weather. Generally, levels of formaldehyde emitted diminish over time.

CONDENSATION AND MOLD

More and more today, recreational vehicles are being used for more than just for occasional camping or travel. Those who intend to use the recreational vehicle for extended "live in" periods of time must be prepared for condensation and the humid conditions that typically occur. Normal activities and living conditions of even one or two occupants in the confined area of a recreational vehicle with its tight construction will lead to rapid saturation of the air inside the recreational vehicle and the appearance of visible moisture, especially during cold weather.

Estimates indicate that a family of four can vaporize up to three gallons of water daily through its breathing, cooking, bathing and washing. Unless this vapor is carried outside by ventilation, or removed from the air by a dehumidifier, it will condense on the inside of the windows and walls as moisture. In cold weather it will appear as frost or ice. It may also condense in the walls or ceiling and appear as stains on paneling. This will increase the heating load on the furnace somewhat, but it will greatly reduce condensation. You should increase ventilation when large numbers of people are present.



WARNING: RECREATIONAL VEHICLES ARE SUBJECTED TO BEING CLOSED UP FOR LONG PERIODS OF TIME WHICH CAN RESULT IN EXCESSIVE HUMIDITY, AN AVERAGE CONDITION THAT CAN LEAD TO THE FORMING OF MOLD. IF MOISTURE PENETRATION OCCURS, IT IS ABSOLUTELY IMPERATIVE TO HAVE IT REPAIRED TO AVOID DETERIORATION OF MATERIALS AND THE ENVIRONMENT THROUGH THE INTRODUCTION OF MOLD OR BACTERIA. MOLD AND BACTERIA ARE <u>ALWAYS</u> PRESENT IN A HABITAT. MOLD & MOISURE DAMAGE ARE SPECIFICALLY EXCLUDED FROM THE GULF STREAM LIMITED WARRANTY.



WARNING: DO NOT USE COOKING APPLIANCES FOR COMFORT HEATING. IN ADDITION TO THE TOXIC FUMES AND OXYGEN DEPLETION, OPEN FLAMES ADD MOISTURE TO THE AIR INCREASING CONDENSATION AND THE POSSIBILITY OF MOLD.

SLIDE OUT SYSTEMS

If your vehicle is equipped with a slide out there are several precautions that should be taken before operation of the slide room.

- 1. Make sure you have clearance on the exterior.
- 2. Make sure your slide out awning is unlocked.
- 3. Make sure that all interior items are clear.
- 4. Make sure that you have sufficient battery power.

SLIDE OUT SYSTEMS OWNER'S MANUALS AND TROUBLESHOOTING GUIDES

Gulf Stream recreational vehicles carry a variety of electrically operated slide out products. The electrical slide out product installed in your particular recreational vehicle is accompanied by an owner's manual from the slide out system manufacturer. For troubleshooting, maintenance and proper use of your particular slide out, please refer to the slide out owner's manual supplied by the slide out system manufacturer. Most slide out system owner's manuals and troubleshooting guides can also be found on the slide out system manufacturer's websites.

SLIDE OUT KILL SWITCH

Some Gulf Stream recreational vehicles have a kill switch mounted to the base of the driver's seat. The slide out will not function unless this seat is moved to its forward most position. Also, the parking brake may need to be applied for the slide outs to function

SLIDE OUT CIRCUIT BREAKER SWITCH

If attempting to move the slide and its perceived that the slide out system has no power, check the 12 volt 50 amp mini-breaker located in either the front or rear exterior electrical compartment to make sure it has not been tripped. Reset the breaker as needed. Make sure the driver's seat is positioned as far forward as possible and the parking brake has been set.

SLIDE OUT WEATHER SEALS

Periodically check all seals and gaskets on the slide out walls for proper fit and operation. Check the condition of the slide tubes (not the hydraulic ram) under the slide out, and if needed use bearing grease for ease of operation. Slide outs are not designed to have a 100% air-tight seal. However, you will find that the best seal possible can be achieved with pro-active maintenance and proper use. Occasional adjustment of the slide out room to prevent water

or air intrusion may be necessary under normal operation. With normal adjustments, the slide out may not appear to be perfectly level within the slide out opening of the motor home sidewall. This is a normal occurrence. Further, slide out adjustments may result in decal or paint line alignment concerns. The failure of paint or decals to line up after slide out adjustments does not require attention and repainting or applying new decals is not necessary or covered under the Gulf Stream Limited Warranty.

SLIDE OUT IGNITION OVERRIDE

The slide out has a safety override installed to prevent operation while the ignition switch is on. Make sure the ignition switch to the recreational vehicle is off before troubleshooting any slide out problems such as, non operation.

LEVELING JACKS

WARNING: NEVER USE ANY LEVELING JACK SYSTEM AS A LIFT FOR CHANGING TIRES OR ACCESS TO THE UNDERSIDE OF THE RECREATIONAL VEHICLE. FAILURE OF THE LEVELING JACK SYSTEM WHILE A PERSON IS UNDER THE RECREATIONAL VEHICLE CAN CAUSE INJURY OR DEATH.

Leveling jack systems are installed to level your recreational vehicle, and to keep the recreational vehicle from swaying when parked for camping. Leveling jacks were not designed as lifting systems for service access under the recreational vehicle. Placement of ANSI approved jack stands under the recreational vehicle is necessary prior to entering the underside of any vehicle for service.

Due to the varying options contained in leveling jack systems, it is recommended that you read the operation manual included with the system installed on your recreational vehicle (optional) for proper operation procedures.

LEVELING JACK CIRCUIT BREAKER SWITCH

If you are having trouble with the system, make sure that the 50 amp 12 volt mini breaker installed in either the front or rear exterior electrical compartment has not been tripped. Your batteries must be near fully charged to operate the leveling system as well. Also make sure that you have the ignition key in the proper position, the brake is set, and that the transmission is in "park."

AWNINGS

Awnings installed on your recreational vehicle are optional and may have been added by your Dealer. Proper use, care, and maintenance procedures for awnings are included in the literature provided with the awning, proper cleaning and removal of water, debris, snow and/or ice – refer to the owner's manual from the awning manufacturer.



WARNING: SOME AWNINGS CONTAIN PINCH POINTS, WHICH IF USED IMPROPERLY CAN CAUSE INJURY. PLEASE READ AND UNDERSTAND ALL OPERATOR INSTRUCTIONS INCLUDED WITH YOUR AWNING(S).

AWNING CARE

Be sure to clean off all debris as you roll up your awnings. Periodically wash off the awning fabric with a soapy water solution. Long term exposure to the sun may cause some fading over time, which is normal. Harsh exposure can cause the awning fabric to delaminate.

VEHICLE MAINTENANCE

Generally, sealants are designed to last more than a few years, however, the varying weather conditions across the country can breakdown those sealants in shorter time as little as 3 months. Some sealants applied in the spring must be touched up again in the fall, and in the windshield area on a bi-monthly basis.

WINDSHIELD

The windshield is probably subjected to the worse conditions, and therefore will require more maintenance. If the windshield leaks, a good urethane adhesive designed for installing windshields is recommended for application under the rubber gasket, followed up by a small silicone seal where the gasket lays on the windshield.

ROOF

Probably the most important area to check for proper seals, is the roof. When accessing the roof use extreme caution and avoid walking on areas near the roof air conditioner ducting. While it is ok to walk in these areas and a slight dipping may be visible, this does not indicate a structural problem with the roof. Generally, this area should be checked at least twice a year. If you find any area that looks questionable, reseal it. The sealant that you should use depends on what type has already been applied. Most roofs used on RV's today use a sealant that is "Self-Leveling," or gradually spreads out up to an hour after it is applied. Before this type of sealant is applied it may be necessary to remove all sealant in the questionable area, as this will ensure that the new sealant will get a good seal when applied. Due to the fact that this sealant tries to settle after it is applied, it is not recommended for application in areas that travel over the edge of the roof. In these areas a good silicone sealant of the same color will perform the task at hand.

SIDEWALL TRIM AND COMPONENT SEALANTS

Other areas that will need attention include the moldings used on the side walls and the compartment door edge moldings. Since these areas are more accessible for periodical checks, it's recommended to inspect the side walls and compartment doors every time you wash your recreational vehicle. Sometimes washing the side walls can actually remove some necessary sealants. If you find an area on your side walls that needs resealed, a clear silicone, or one that matches the color of your side walls should be used. When resealing compartment doors, only a clear silicone sealant is recommended, as these doors are usually painted and the color would be difficult to match.

The last few areas that might need attention are those around the clearance lights, tail lights, rear view mirrors, and around accessories and windows. All these areas can be resealed using a common silicone based sealant/adhesive. However, when sealing windows and the base of rear view mirrors, be careful as to keep from sealing over any weep holes. These holes are designed to drain any water that may have found its way to the inside of a window or mirror. Keeping up on the maintenance of your sealants will keep your recreational vehicle looking beautiful for a long time. If you are not sure what types of sealants should be used on any part of your recreational vehicle, a simple phone call to your local Dealer for direction will prove beneficial.

PAINT, FIBERGLASS, AND SIDEWALL CARE

The sidewalls of your recreational vehicle have a combination of fiberglass, paint and vinyl decals. The proper care and maintenance of each one of these elements is crucial in the longevity of your recreational vehicle's proper appearance. If you plan on using wax on your side walls you should use a marine type wax on the unpainted portions of the recreational vehicle. Marine type wax is best suited for fiberglass surfaces. Regular automotive wax is suitable for painted surfaces of the recreational vehicle.

Avoid storing your recreational vehicle in the same spot facing the same direction for extended periods of time! The sun can literally bake the finish off of your recreational vehicle if it is not properly rotated during prolonged use and/or storage.

CORROSION PROTECTION

Your Gulf Stream recreational vehicle has been designed to withstand normal environmental conditions. But, the sand and salt used on the highways and the salt spray in the air near oceans can cause the metal components on your recreational vehicle to corrode.

To protect your recreational vehicle from this corrosion, it must be thoroughly cleaned as soon as possible after exposure to these elements. Washing the undercarriage with a high-pressure washer will remove the majority of the salt. But, this will not replace the paint that is literally sand-blasted off the undercarriage by the road salt and sand. Sand-blasted and corroded frame components must be refinished. This can be done with readily available rust preventative paint and undercoating. This is necessary to properly maintain your recreational vehicle.

We have also found generators to be affected by salt spray. Since the generator requires air for operation and cooling, the generator compartment cannot be completely sealed from the elements. Therefore, whenever the recreational vehicle is exposed to salt spray, the generator should also be cleaned.

Aftermarket undercoating processes are also beneficial in rust prevention. But, to remain effective, these treatments must be inspected and renewed annually as most undercoating agents can dry and peel with age. Therefore, regularly scheduled inspections and maintenance is necessary to protect your recreational vehicle and its

In addition to maintenance, you should keep from storing your recreational vehicle in grassy areas for long periods of time. The stagnant, moist air developed under the recreational vehicle will speed up the corrosion process. Always store your recreational vehicle on pebble, concrete or asphalt.

Some components used by Gulf Stream and the chassis manufacturer, by nature, will appear to be "rusty" or corroded on the surface. These components are not required to be rust free for normal operation. These components may include axle housings, brake caliper housings, LP black pipe fittings, etc.

REPORTING SAFETY DEFECTS

If you believe that your recreational vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Gulf Stream Coach, Inc.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your Dealer, or GULF STREAM COACH, INC.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at (800) 424-9393 or write to : NHTSA, U.S. Department of Transportation, Washington, D.C. 20590 or at <u>www.NHTSA.gov</u>. You can also obtain other information about motor vehicle safety from the hotline.

PRE-TRIP CHECK LIST (PRIOR TO DEPARTING/TRAVELING)

various components and fixtures from the elements and keep it corrosion-free.

EXTERIOR

All objects (mirrors, etc.) secure	
Tires at proper pressure (spare)	
(Check for wear and damage)	
Hitch and hitch ball secure	
Windshield wipers operational (blades)	
Fluids topped off	
(Oil, brake, anti-freeze, etc)	
Brakes checked for operation	
Under-carriage items secure	
INTERIOR	

Antenna lowered Refrigerator locked Water pump OFF	
Waste water tank levels Furnace OFF Cooktop Cover CLOSED START ENGINE, CHECK GAUGES Radio	
Mirror adjustments	

Roof vents lowered Water heater OFF Fresh water tank level	
Toilet operational	

PRE-TRIP CHECK LIST (CAMPSITE)

FOLLOW THE ABOVE CHECK LIST WITH THESE ADDED POINTS:

EXTERIOR

Disconnect all shore lines	Remove wheel chocks
(City water, electric, sewer, cable)	
Retract step	Retract Levelers
Store camping equipment	

CHECK CLEARANCES PRIOR TO PULLING OUT

This check list is NOT ALL INCLUSIVE, some items are simple but are necessary for preparation, storage and safe travels and security. You may want to use this list as a start for your own Pre-Trip check list, which may include your personal camping gear and food preferences.

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TIRE INFLATION TABLE SAMPLES

These tables are provided only as a reference. Check your chassis manual for proper tire inflation on your particular motor home.

Tire	Single (S)	Inflation Pressure - PSI															
Size	Dual (D)	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
LT215/75R15	S	1345	1475	1600	1765(C)	1845	1960	2095(D)			- T			1.1	1		1
	D	1225	1340	1455	1610(C)	1680	1785	1930(D)	22			12.1					
LT235/75R15	S	1530	1680	1825	1895(C)	2100	2230	2335(D)				1	1.17	1.1		1	
	D	1390	1530	1660	1820(C)	1910	2030	2150(D)	1.1						1.1		1-4
LT225/75R16	S	1500	1650	1790	1940(C)	2060	2190	2335(D)	2440	2560	2680(E)	1.21	1.11	7-19	1		
19-11-A	D	1365	1500	1630	1765(C)	1875	1995	2150(D)	2200	2330	2470(E)						
LT245/75R16	S	1700	1865	2030	2205(C)	2335	2480	2623(D)	2765	2900	3042(E)						
	D	1545	1695	1845	2006(C)	2125	2255	2381(D)	2515	2640	2778(E)	121			14		
LT215/85R16	S	1495	1640	1785	1940(C)	2050	2180	2335(D)	2430	2550	2680(E)						
	D	1360	1490	1625	1765(C)	1865	1985	2150(D)	2210	2320	2470(E)				14		
LT235/85R16	S	1700	1870	2030	2205	2335	2485	2623(D)	2765	2905	3042(E)	3170	3300	3415	3550	3675	3750(G)
	D	1545	1700	1845	2006	2125	2260	2381(D)	2515	2645	2778(E)	2885	3005	3085	3230	3345	3415(G)
7.50R16LT	S	1620	1770	1930	2040(C)	2190	2310	2470(D)	2560	2670	2755(E)		1.11		1		1
	D	1430	1565	1690	1820(C)	1930	2040	2150(D)	2245	2345	2470(E)						-
8.75R16.5	S		1	1			2240	2405	2470	2570	2680(E)						
	D		1				1970	2095	2175	2260	2405(E)						

Tire Size	Max Speed	Single (S)			1		Inflat	ion Pres	sure - PSI					
	(MPH)	Dual (D)	65	70	75	80	85	90	95	100	105	110	115	120
8R19.5	75	S D	2410 2350	2540 2460	2680 2610	2835 2755	2955 2865	3075 2975	3195 3085	3305 3195	3415 3305	3525(F) 3415(F)		
225/70R19.5	75	S D	i • i	2895 2720	3040 2860	3195 3000	3315 3115	3450 3245	3640(F) 3415(F)	3715 3490	3845 3615	3970(G) 3750(G)		
245/70R19.5	75	S D		3640 3415	3740 3515	3890 3655	4080(F) 3970(F)	4190 4115	4335 4265	4540(G) 4410(G)		123		
†245/70R19.5	75	S D			Ŀē	3640 3415	3740 3515	3890 3655	4080(F) 3970(F)	4190 4115	4335 4265	4540(G) 4410(G)		
265/70R19.5	75	S D				3970 3750	4180 3930	4355 4095	4540 4300	4685 4405	4850 4560	5070 4805	5170 4860	5355(G) 5070(G)

Tire Size	Max Speed	S' 1 (0)	Inflation Pressure - PSI												
	(MPH)	Dual (D)	70	75	80	85	90	95	100	105	110	115	120		
00225	75 S	S	3370	3560	3730	3890	4080	4235	4390	4540(F)	1		1		
9022.0		D	3270	3410	3550	3690	3860	4005	4150	4300(F)	1.00				
10D00 E	65	65	65	S	4080	4280	4480	4675	4850	5025	5205(F)	5360	5515	5675(G)	· · · · ·
10622.0		D	3860	4045	4230	4410	4585	4760	4940(F)	5075	5210	5355(G)			
44D00.5	75	S	4530	4770	4990	5220	5510	5730	5950	6175(G)	6320	6465	6610(H)		
11622.3		D	4380	4580	4760	4950	5205	5415	5625	5840(G)	5895	5950	6005(H)		
10000 5	5 75	S	4940	5200	5450	5690	6005	6205	6405	6610	6870	7130	7390(H)		
12R22.5		15	10	D	4780	4990	5190	5390	5675	5785	5895	6005	6265	6525	6780(H)
04E /7ED00 E	75	S	3470	3645	3860	3980	4140	4300	4455	4610	4675(G)				
245/75H22.5	15	D	3260	3425	3640	3740	3890	4080	4190	4335	4410(G)		-		

255/80R22.5 LRG XZE®, XRV®

PSI		70	70	70	75	80	85	90	95	100	105	110		MAX	KIMUM LOAE	,	
kPa		480	520	550	590	620	660	690	720	760	AND PRESSURE ON SIDEWALL						
LBS	SINGLE	3875	4070	4300	4440	4620	4805	4975	5150	5205	S	5205	LBS at	110	PSI		
	DUAL	7050	7410	7720	8080	8410	8820	9050	9370	9610	D	4805	LBS at	110	PSI		
LD-	SINGLE	1760	1850	1950	2010	2100	2180	2260	2340	2360	S	2360	KG at	760	kPa		
кра	DUAL	3200	3360	3500	3660	3820	4000	4100	4260	4360	D	2180	KG at	760	kPa		

NOTES