Dear Wanderlodge Owner:

Thanks for choosing Wanderlodge!

I want to personally welcome you to our Family of Friends and I invite you to visit us at our Ft. Valley facilities whenever you wish. We are always happy to see you and we are deeply interested in your experiences as you use and enjoy your Wanderlodge coach. We recognize that it is our relationship to you, the Wanderlodge owner, that contributes most to the prestige of ownership of this finest over-the-road coach.

I trust that as you become more intimately acquainted with your new coach, the sound, careful thought behind every aspect of her design will become increasingly evident and your initial decision to choose Wanderlodge will be positively reinforced with every mile.

I acknowledge the good faith you have demonstrated in our product. I and the engineers and craftsmen at Wanderlodge take great pride in our handiwork and want to do everything possible to engender in you what has become the Wanderlodge experience; the deep satisfaction that comes from years of assured confidence of having chosen....the very best.

Red Chester
Vice President/General Manager
Blue Bird Wanderlodge

Limited Warranty Wanderlodge®

Wanderlodge® Division gives this Warranty. The terms "we", "us", and "our" in this Warranty refer to that division. The Warranty extends to the original owner of the Wanderlodge®. The terms "you" and "your" in this Warranty refer to the owner.

Thank you for purchasing a new Wanderlodge®. Wanderlodge® warrants each Wanderlodge® to be free from defects in factory material or workmanship under normal use and service within the time and mileage limits described below:

1. For a period of (3) years or 36,000 miles, whichever occurs first, from date of delivery to the original purchaser or first placed in service as a demonstrator or company vehicle, whichever is earlier (mileage accumulated while in the possession of the dealer is included in the 36,000 mile total), Wanderlodge® warrants the:

   a. Chassis Frame and Crossmembers

   b. Body shell (those structural metal components welded or riveted together forming floor, sidewalls, roof, front and rear sections) including rust-through.

   c. Paint adhesion, except when paint failure is caused by deterioration of paint from weather and exposure or damage to paint after you accept delivery of the Wanderlodge®. This warranty does NOT cover cracks in the paint on rubber fenders and does not cover fading of any paint.

2. For a period of (12) months from date of delivery to the original purchaser or first placed in service as a demonstrator or company vehicle, Wanderlodge® warrants the:

   a. Interior components of the coach such as the following:

   - Interior fabric
   - Floor covering
   - Wall covering
   - Cabinets
   - Components warranted by other manufacturers are not included in any part of this Warranty. We have supplied to you those separate warranties in your owner's package.

3. From the date of delivery to the original purchaser or first placed in service as a demonstrator or company vehicle, (mileage accumulated while in the possession of the dealer is included in the mileage total) the following power train components will be covered by the manufacturer's warranty for that component:

Engine	Manufacturer's warranty
Transmission	Manufacturer's warranty
Axles	Manufacturer's warranty
Batteries	Manufacturer's warranty

The preceding paragraphs describe everything that is covered by this Warranty. Anything else is NOT covered. Without limiting this general statement about what is covered, examples of such non-covered expenses include:

- Telephone calls
- Loss of time
- Commercial loss
- Inconvenience
- Loss of use of the vehicle
- Towing charges
- Hotel or motel accommodations
- Equipment we do not manufacture or supply
- Maintenance services such as but not limited to:
  - wiper blades
  - bulbs
  - oil
  - fluids
  - filters
  - front end and tag axle alignment
  - brake linings and drums

- Damage from things we could have no control over such as:
    - collision
    - modifications
    - misuse
    - lack of maintenance
    - negligence
    - misuse of electrical systems
    - broken glass
- Any part of the vehicle which fails or malfunctions as a result of work done by anyone other than Wanderlodge®.
- Any equipment added to the vehicle by customer or dealer, or temporary installations at the factory designed to accommodate such additions or alterations, may not be covered by this Warranty.
- Parts or accessories which you or your dealer bought or installed.
- Wanderlodge® makes no warranty whatsoever regarding pneumatic tires.

Repair or replacement of defective parts is your exclusive remedy under this warranty.

Wanderlodge® will pay for all parts and labor needed to make necessary repairs due to defects in factory material or workmanship covered under this Warranty.

This Warranty covers the original owner of the Wanderlodge® during the Warranty Period. A transfer fee will be required within 30 days of the sale of the Wanderlodge to transfer the Warranty.

Wanderlodge® reserves the right to make changes in design and changes or improvements upon its products without imposing any obligations upon itself to install the same upon products theretofore manufactured.

In order to have defects repaired under this Warranty, you should promptly take your Wanderlodge® to the dealer who sold it to you or the nearest Wanderlodge® dealer. (You may obtain the name and address of the nearest dealer by writing or calling us at the address and number set forth below) In the event there is some geographic or mechanical reason you cannot get to a Wanderlodge® dealer, you may (with our prior approval) use any capable and reputable repair facility for the repairs. The Wanderlodge® dealer will make any needed repairs (or arrange for them to be made) within a reasonable time after you deliver the vehicle to him. You must take the vehicle to the dealer promptly after discovering the defect and, in any event, within the Warranty Period. Warranty claims must be submitted no more than 60 days after repairs are completed.

Defective parts that you have replaced under the Wanderlodge® Warranty must be returned to the factory with your invoice for the new part in order to be credited for the repair work.

You are responsible for properly operating, maintaining and caring for your Wanderlodge® in accordance with the instructions contained in your Owner's Manual.

You are responsible for keeping maintenance records, since in some instances, it may be necessary for you to show that proper maintenance has been performed.

This Warranty applies to those Wanderlodges® which are legally registered and normally operated in the United States or Canada.

ANY IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS, ARE LIMITED TO THE WARRANTY PERIOD OF THIS WRITTEN WARRANTY, AND WE WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. Some states do not allow limitations on how long an implied Warranty will last, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Any lawsuit for breach of this Warranty must be filed within one year of breach.

No one, including the dealer, is authorized to modify this Warranty or to make any other warranty on our behalf. There is no other express warranty on this vehicle. To the extent allowed by law, Georgia Law governs this Warranty and rights arising hereunder.

INTRODUCTION

This section of your Owner's Manual contains general hints and recommendations for using your motor home. Checklists and suggestions are offered which cover just about every phase of motor home travel.

The remaining sections of this manual describe the operation and use of the individual items and systems which comprise your motor home.

Manufacturer's manuals for components and appliances are included in your owner's kit. Please refer to these for more detailed information.

We hope that this manual will help answer questions that may arise about the use, operation and maintenance of your motor home. Any suggestions or recommendations that you might have for including or expanding on material of interest will be carefully considered for incorporation in future publications. We are always interested in providing our coach owners with the most current and comprehensive information about our product.

CHECKLISTS

A little preliminary planning will go a long way to help make your trips successful and enjoyable. As an aid to planning your travels, review the following checklists. If there are any additional items that you should be reminded of, add them where you see fit. These lists are only recommendations based on the experience and suggestions of sources well-versed in motor-coach expertise. You will eventually find that a short "walk-around" the coach, outside and inside, will be adequate and comprehensive enough to ensure that you're ready for travel.

BEFORE YOU LEAVE:

Store valuables and important papers in a safe place.
Arrange care for your pets.
Cover all food to keep out mice and insects.
Store oil, gasoline, matches and other inflammables properly; get rid of newspapers, magazines and oily rags.
Connect timers to several inside lamps and outside lights; keep some shades open for a lived-in look.
Discontinue newspaper, milk and other deliveries; store trash cans and outside equipment.
If weather permits, shut down hot water and heating systems; close main water supply.
Ask the Post Office to hold your mail.

Have your lawn, garden and house plants cared for.
Arrange with the Telephone Company for discontinued or "Vacation Service".
Lock all windows and doors securely.
Leave your key with your neighbor and let them know your basic itinerary.
Notify police.

CHECKOUT YOUR COACH - OUTSIDE:

Disconnect and stow:

1. Electrical cord.
2. Sewer hose (flush out)
3. Water hose.

Check all exterior lights for proper operation.
Check wheel lug nuts for tightness. (See **Tire Change Procedure**).
Check tires for correct pressure. (See **Tire Inflation**).
Check that all external compartments and filler openings are properly closed and/or locked.
Check that items stored on exterior of coach are secured. (Be sure that these items present no clearance problems.)

NOTE

If the trip you are planning will take the coach well past suggested maintenance intervals, it may be advisable to perform these procedures before leaving. This may avoid unscheduled stops or interruptions during your trip.

Check that there are no obstacles to avoid above or under the coach.
Be sure that there is sufficient clearance front and rear.

CHECK YOUR AUTOMOTIVE SYSTEMS:

Check that fluid levels are normal (oil, power steering, engine coolant, windshield washers, transmissions, etc.).
Check generator oil level, coolant level, battery condition.
Check operation of turn signals, emergency flasher, stoplights and backup lights.
Check that headlight high- and low-beams operate.
Check horn operation.
Check fuel gauge, and add fuel if needed.
Start engine and check gauges for signs of trouble.

Check operation of foot brakes and parking brake.

CHECKOUT YOUR COACH - INSIDE:

Close windows and vents.
Check that cabinet doors and drawers are secured.
Check that refrigerator door latch is in locked position.
Check that no heavy item is stored in an overhead cabinet.
Store large items in base cabinets.
Check that counter tops, range top, table tops and shelves are clear of unsecured items.
Turn off interior lights; check that entrance step is retracted. Secure and lock the entrance door.
Adjust exterior mirrors.

WARNING

Mirrors provide needed additional driver visibility. To be effectively used, mirrors must be properly adjusted for each driver and the driver must be aware of the limitations on viewing area that exist even when mirrors are properly used.

AND, BEFORE DRIVING AWAY:

Check operation of appliances and special equipment.
Check that fire extinguishers are fully charged.
Check operation of interior and exterior lighting.
Start generator and check 120 vac system and wall outlets.
Adjust driver's seat so that all controls are within easy reach.
Make sure that seat is locked in position. Do not adjust driver's seat swivel or foreaft mechanism while vehicle is moving or seat could move unexpectedly, causing a loss of control.
Check that front passenger's seat is locked in position.
Fasten seat belts. Belts should be placed as low as possible around the hips. This places the load of the body on the strong hip bone structure instead of around the soft abdominal area and prevents sliding out in case of accident.

CAUTION

Child restraint systems are designed to be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt. Children could be endangered in a crash if their child restraints are not properly secured in vehicle.

Check that warning lights are lit when the ignition key is turned to on or start position.

SOME ITEMS YOU MIGHT WANT TO TAKE ALONG ON YOUR TRIP

NOTE

You may find that many items taken were not needed and that some items that were needed were overlooked during planning of your last trip. Make notes of these items to prevent duplicating the same errors.

Adequate supply of prescription medicines.
Prescription sunglasses or reading glasses.
Camera equipment and film supply.
Heating pads, ice bags, etc.
Stationery, envelopes, stamps.
Telephone number list.
Reading material.
Special pet supplies.
Extra toilet chemicals and toilet articles.
Spare belts for engine operated equipment.
Spare parts for generator: suggested spares include oil filter, fuel pump, air filter, solenoid. Five quarts of approved motor oil.
A professional-type double-action tire pressure gauge. (Included in coach.)
Under the heading of Emergency Equipment, it is advisable to consider outfitting your coach with these items:

1. First aid-kit
2. Emergency highway flares
3. Flashlight or lantern (with extra batteries)
4. Tool kit
5. Replacement lamp assortment
6. Replacement fuse and breaker assortment.
7. Trouble light with a long cord.

AND SOME OTHER THOUGHTS TO CONSIDER

Automobile insurance to cover you and your family.
Avoid cash. Use traveler's checks and credit cards wherever possible.
Confirm reservations well in advance of arrival.
Make a clothing check list for everyone.

CITIZEN'S BAND TRANSCEIVER

You might also bear in mind that your coach is equipped with a CB unit (Citizen's Band receiver-transmitter). In the event of an emergency situation which requires outside assistance, remember to call for help on Channel 9. This channel is restricted to emergency use only and it is monitored 24 hours per day! Don't hesitate to use your CB if you see someone else in need of assistance.

HOT WEATHER OPERATION

Wherever possible, choose a shaded parking site so that the coach will be cooler during the hottest part of the day. The optional patio awning will be especially useful in lowering inside temperature. Air conditioning units are indispensable in hot climates. Keep in mind that their proper operation depends on adequate line voltage. Low voltage causes motors to run hotter and reduces compressor motor life. Supply voltage in some campgrounds may not be as high as necessary, especially when there are heavy loads on the lines from other air conditioners. Check the right hand overhand auxiliary panel 120 VAC meters when in doubt.

COLD WEATHER OPERATION

If frost or condensation accumulates in closets or cabinets during long periods of cold weather operation, leave the doors to these areas slightly ajar to provide air circulation. Be sure that roof vents are open when using the gas cooktop.

CAMPGROUND COURTESY

Don't forget the "Golden Rule". Being considerate of your neighbors will help make friends. A few of the "Do's" and "Don'ts" are:

Good housekeeping - put all litter in the proper receptacles and leave your site neat and clean.

Don't allow your water or sewer hook-ups to leak.

Respect your neighbor's desire to retire at an early hour. Avoid loud noises and bright lights after dark.

Drive slowly through camp areas at any hour for the safety of pedestrians.

INSURANCE

As with your automobile, it is important that you have adequate protection with insurance coverage for personal liability, property damage, comprehensive, collision, medical payments, loss of use, etc.

Canadian and Mexican Insurance

Insurance for travel in Canada can usually be covered by your present U.S. policy for the recreational vehicle, often at no extra cost. Consult your individual company for procedures and be sure of your coverage before entry.

For travel in Mexico (at the present time) there are no U.S. insurance companies that can provide recognized Mexican coverage, with the exception of that required for travel through a narrow strip of Mexican territory in and around ports of entry and the U.S./ Mexican border.

Mexican insurance is controlled, and rates are set, by the Mexican government.There are several reliable companies handling Mexican insurance, with similar rates for the necessary coverage. The principal differences between them are the "fringe benefits", received in the form of informational travelogues and other helpful information, such as dining places considered acceptable for sanitary conditions, fuel stations, and so on.

Some insurance services include detailed route maps with "where to stay" recommendations and "things to see" mile-by-mile (or kilometer-by-kilometer post). While the rates set by Mexico may seem quite expensive at first glance, you usually end up not spending quite as much as expected because you can usually arrange to hold your state-side policy in abeyance during the same period you are in Mexico, thus not having to pay unnecessarily for double coverage. In addition, you may be able to obtain substantial refunds on the Mexican collision insurance after your return to the U.S. Be sure to obtain a certification from the park operator at each location in Mexico to certify the dates that your coach was parked there. If your coach is parked for most of the time, instead of constantly traveling, your refund may be major portion of the original cost. This feature is referred to as the "in-storage" credit. (It is a good idea to always check with your insurance company before taking a trip to find out whether applicable insurance rules and regulations have changed. Keep up to date on your coverage.)

Carry insurance papers at all times!

SAFETY CONSIDERATIONS

Using LP Gas

Check for leaks at the connections on the LP gas system soon after purchase and initial filling of LP tank; continued periodic checks of the system are recommended. Even though the manufacturer and dealer have already made tests for leakage, this check is advisable because of the vibrations encountered during travel. Apply a soapy water solution to the outside of gas piping connections to find gas leakage (bubbles). Do not use products that contain ammonia or chlorine. Usually, tightening of connections will be sufficient. If not, ask your authorized dealer service to make the needed repairs.

Liquified Petroleum Gas (LPG) is heavier than air. Leaking gas tends to flow to low places, and will sometimes pocket in a low area. LP gas can usually be detected by an identifiable odor characteristic to garlic.

CAUTION

Never light a match or allow any open flame in the presence of leaking gas!

Be sure that the main LP gas supply valve is closed or galley panel switch **OFF** during refueling to prevent accidental ignition of gas fumes by appliance ignitors.

WARNING

When coach is to be stored in a confined area, turn off the LPG at the main tank shutoff valve or, more conveniently, at the galley systems control panel.

Your Wanderlodge has been provided with an automatic 80% fill valve to protect you from the dangers of an overfilled LPG tank.

Electrical Systems

Your coach has been engineered and checked for your complete electrical system safety. Circuit breakers and fuses are installed to protect electrical circuits from overloading. Before making modifications or additions to the electrical system, consult your dealer for assistance in obtaining a safe and secure installation.

Do not "jump" circuit protectors!

Emergency Stops

Always carry road flares and/or reflective triangular highway warning markers for emergency warning display. Pull off the roadway as far as

possible when changing flats or for other emergency situations. Turn on your hazard warning flashers when parked alongside a roadway, even if only for a short while. Have your coach occupants leave the vehicle and stand clear of the area when parked on the edge of a highway.

In Case of Tire Blowout

Michelin Tire Corp. has tested extensively and recommends the following when a blowout occurs:

1. Quickly step on the gas.
2. Adjust steering as needed.
3. Stay off the brakes.
4. Keep driving until you find a safe place to pull over.

Engine Exhaust Gas

Avoid inhaling exhaust gases because they contain carbon monoxide, which by itself is colorless and odorless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal. If at any time you suspect that any exhaust fumes are entering the passenger compartment, have the cause determined and corrected as soon as possible.

The best protection against carbon monoxide entry into the vehicle body is properly maintained engine exhaust system, body and ventilation system. It is a good practice to have the exhaust system and body inspected by a competent mechanic each time the vehicle is raised for lubrication or oil change. It should also be inspected whenever a change is noticed in the sound of the exhaust system and if the exhaust system, underbody or rear of the vehicle has been damaged.

To allow proper operation of the vehicle's ventilation system, keep ventilation inlets clear of snow, leaves, or other obstructions.

Sitting in a parked vehicle with the engine on for extended periods, without proper ventilation, is not recommended!

MORE SAFETY CONSIDERATIONS

Sanitize fresh water supply system periodically.

Prevent water connection fittings from contacting the ground or drain hose to reduce chances of contamination.

Consider using a qualified technician for repairing gas or electrical appliances.

Check fire extinguishers periodically for proper charge.

Avoid overloading your vehicle.

Be careful not to cause an improper load distribution which can adversely affect roadability.

Insure that tires are in good condition and properly inflated at all times. Under-inflated tires overheat and are blowout-prone!

Check and tighten wheel lug nuts; manufacturer recommends after first 50-100 miles and every 1,000 miles thereafter.

EMERGENCY EXITS

Sliding windows, which can be easily opened, may be used as an emergency exit. Squeeze the screen latch and slide it to the rear enough for access to the window latch. Squeeze the window latch and slide window open. Emergency exit windows are identified by an **EXIT** decal on the glass.

VEHICLE LOADING WEIGHT

The Federal Certification Label, located inside and above the driver's windshield between the sunvisor mounting brackets describes the maximum weight-carrying capacities of your motor home and for each axle, respectively abbreviated by "GVWR" and "GAWR".

The Gross Vehicle Weight Rating (GVWR) is the maximum motor home weight allowable with all systems filled and with passengers and supplies aboard.

Each axle also has a maximum load-bearing capacity referred to as the Gross Axle Weight Rating (GAWR).

The load capacity is the difference between the GVWR and the actual weight. This means the total weight of all food, clothing, other supplies and passengers, must not permit the load capacity to be exceeded.

To find the actual weight, with the motor home fully loaded, drive to a scale and read the weight on the front and rear wheels, separately, to determine axle loading. The load on each axle should not exceed its GAWR. If weight ratings are exceeded, move or remove items to bring all weights below the ratings.

When loading your motor home, store heavy gear first, keeping it on or as close to the floor as possible. Heavy items should be stored centrally to distribute the weight evenly between the front and the rear axles. Store only light objects on high shelves. Distribute weight to obtain even side-to-side balance of the loaded unit. Secure loose items to prevent weight shifts that could adversely affect the balance and roadability of the vehicle.

COACH SERVICE - REPLACEMENT PARTS

A paint color label is located adjacent to the Federal Certification label above the pilot's sun visor.

Data plates located on the rear of the chassis (raise rear engine compartment door for access) provide information useful for identifying your coach if you are planning on ordering parts. Identification plates provide information such as:

1. Body Serial Number
2. Model Year
3. Body Service Number
4. Chassis Serial Number
5. Chassis Service Number

ECONOMICAL DRIVING

How you drive, where you drive and when you drive -- these factors all have an effect on determining how many miles you can get from a gallon of fuel. Careful maintenance will also contribute to fuel economy.

Frequent stops and starts during a trip diminish miles per gallon. Plan even short shopping trips so you can take advantage of through-streets to avoid the traffic lights. Pace your driving like the professional drivers to avoid unnecessary stops.

An idling engine also consumes fuel. If you are faced with more than a few minutes wait, and you are not in traffic, it may be advisable to shut off the engine and re-start later.

A properly lubricated vehicle means less friction between moving parts. Consult the maintenance schedules for proper lubricants, lubrication intervals and general coach maintenance scheduling.

Fuel economy is also related directly to the amount of work accomplished by the engine. Heavier loads require more power. Keep excess weight to a minimum

FOG LIGHTS

Stationary amber fog lamps are mounted in the center section of the front bumper. They illuminate only with low beam headlights.

TRAVELING IN YOUR MOTOR HOME

NOTES

1. **Overall height is approximately 11 1/2 feet.**
2. **It is recommended that compartment doors be locked so they do not open while in transit.**

There are many modern recreational vehicle parks with good facilities, including State, County and Federal Parks, where electrical, water and sewer connections are readily available. Directories are published which describe these parks in detail and list available services and hookups.

On overnight or short weekend trips, your motor home has more than adequate holding tanks and water supply capacity in the event that campgrounds or parking sites are not equipped with these facilities.

On longer trips, where sewer connections and utility hookups are unavailable, it will be necessary to stop from time to time to dispose of holding tank wastes and replenish the water supply. Many gas stations (chain and individually-owned) have installed sanitary dumping stations for just this purpose.

When stopping for the night, park the coach in a location that is relatively level and where the ground is firm. This will ensure your comfort as well as the leveling of your refrigerator (for most efficient operation).

Making a long trip is not very different from making a weekend excursion since everything you need is right at hand and you are home wherever you travel. When packing for an extended trip, try to avoid taking non-essential items.

When planning to stay in the same location for several days, weeks, or even months, be sure to maintain the motor home level. Use leveling jacks system for this purpose.

Hook up to the water supply by attaching the water hose to the commercial water supply inlet.

Plug the electrical cable into the shoreline receptacle. Be sure to observe all grounding and connection precautions!

Connect sewage hookup into the disposal facility.

WINTER TRAVELING

Certain precautions should be taken when traveling in your motor home during the cold winter months. Keep these suggestions in mind:

Provide heat in the coach at all times.

Have a plentiful supply of LPG.

If your stay is longer than overnight, and you do not use the generator, try to have a shoreline hooked up to outside ac power.

Minimize your use of electricity if 120 vac is unavailable.

Leave cabinet doors and wardrobe doors slightly open at night to allow for proper air circulation.

Freeze protection heaters and heat tapes greatly decrease the chances of frozen water lines provided the coach is plugged into outside power or the generator is run continuously during cold weather periods.

Remember that low temperatures in combination with high winds will cause an equivalent chill temperature much below that indicated by your thermometer. For instance, with an outside temperature of zero degrees, and a wind velocity of 10 miles per hour, the equivalent chill temperature would be -20 degrees F!

There is no substitute for common sense when traveling in cold weather.

GENERAL STORAGE NOTES

Drawing draperies will reduce fading of rugs and upholstery. Leaving an air freshener agent will minimize odors from plastics and other materials. Slight opening of windows and vents will allow air circulation without worry of water entering. Covering wheels to eliminate direct rays of the sun on tires will reduce sidewall cracking.

NOTE

Remove all items from the coach which may freeze, including canned foods, miscellaneous liquids, etc. Remove all contents of the refrigerator/freezer, clean unit and leave doors ajar.

REPORTING SAFETY DEFECTS

If you believe your vehicle has a safety 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 Blue Bird Wanderlodge.

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 Blue Bird Wanderlodge.

To contact NHTSA, you may either call the Auto Safety Hotline toll free at 1-800-424-9393 (or 366-0123 in Washington, D.C. area). Or write to: NHTSA, U.S. Department of Transportation, Washington, D.C. 20590. You can also obtain other information about Motor Vehicle Safety from the hotline.

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AIR CONDITIONING SYSTEMS

ROOF AIR CONDITIONING

System includes (2) two 13,500 BTU air conditioning units with 1000 watt electric heat strips and condensate drain systems.

Operation: 120 vac is required from either generator or shoreline. The AC/Heat master switches, located on the Shifter Panel, for each a/c unit must be on. Refer to the operator's manual in your owner's kit for detailed operating instructions.

CHASSIS AIR CONDITIONING

The 18,000 BTU system has an engine driven compressor. Controls are located on the left hand overhead dash panel. Either of the blower switches may be on for compressor operation.

AIR PRESSURE SYSTEMS

INTRODUCTION

The air pressure system on your coach is supplied by an engine driven compressor. It provides pneumatic power for brakes, suspension, and numerous accessories. This complex, but efficient system is not intended to abe totally leak free. After overnight parking, you may notice a significant loss of pressure on the air pressure front/rear gauge, or in systems connected to auxiliary air. This condition is normal, and in fact, our air leakage tolerance is tighter than most manufacturers within the heavy duty equipment industry. Once the engine is running, the engine driven compressor will quickly build up the system to the correct pressure.

AIR BRAKES

Your motor home is equipped with dual service air brake systems for front and rear brakes, with integral fail/safe operation; and manual/automatic rear spring (parking) brakes. The service brakes are completely independent systems, each including a reservoir and separate distribution lines and valves. The reservoirs are pressurized from a single compressor. Both service brake systems are brought into operation each time the brake treadle is depressed to slow or stop the coach. Reservoir pressure for each service brake system is monitored by a respective pressure gauge on the front panel; system failure(s) are indicated by low pressure readings, illumination of the Low Air failure lamp and sounding of buzzer.

OPERATION

When the coach is parked, and the engine off, the rear spring brakes will normally be set by operating the parking brake. The spring brakes cannot be fully released until the air pressure is above 65 psi. These brakes are in the released position when the control is pushed in. In the event that there is a loss of air pressure, the spring brakes will set automatically, at the brake-applied position, and will not release until the air reserve has again built up to required value. Consequently, there will be a normal delay, after the coach is first started, while the compressor builds up pressure before the brakes can be released and the coach driven. When the brake treadle is depressed, to slow or stop the coach, reservoir air is applied simultaneously to both front and rear service brakes to effect the braking action. The spring brakes are held in a released position by the air pressure supplied from the associated reservoir tank.

CAUTION

Do not attempt to drive the coach until system pressure is above 90 psi.

BRAKE FAILURES

To compensate for normal lining wear, each brake system is individually self-adjusting.

Protection against brake system failures is provided by fail/safe features. If the front brakes fail, operating the brake treadle still activates the rear service brakes to provide stopping capability.

If a failure occurs in the rear, the front service brakes and rear spring brakes provide braking action.

In the unlikely event of a failure where both service braking systems are disabled, the rear spring brakes will apply automatically and bring the vehicle to a stop. As a safety factor, the coach should not be moved until any type of brake failure is corrected.

NOTE

With the front brake system service reservoir fully charged, enough air pressure is available to provide for four full releases of the rear spring brakes. This will allow the coach to be brought to a safe position until repairs can be accomplished.

AIR SUSPENSION SYSTEM

Air suspension bags cushion the front and rear axles. Ride height is automatically maintained by height control valves. Dumping these air bags when the vehicle is parked allows the rubber bumpers to come together and eliminate vehicle springiness. The SUSP. DUMP switch, located on the top right side of the Lower Dash Panel, controls the front and rear axle suspension.

NOTE

The accessory air tank must contain at least 65 PSI pressure for the DUMP switch to function. The accessory air tank pressure does not register on the dash air pressure gauges.

Moving the SUSP. DUMP switch away from the UP position applies air pressure to three air pilot-operated valves on the suspension system. Two

of these valves are located on the rear axle; and one is located on the front axle. The pilot air shifts the valves, cutting off the air supply to the air bags and allows the air in the bags to escape. After the suspension system has been dumped, and the ignition is turned on, a warning pilot light is illuminated on the dash to warn the driver that the system is dumped and not to drive the vehicle until the SUSP. DUMP switch is set to the UP position.

ADDITIONAL AIR-OPERATED EQUIPMENT

Besides providing the compressed air supply for the coach braking systems, the compressor also provides the air supply for the entry step, front air vents, and waste dump system all via separately-controlled solenoid switches operated from the dash, or at other locations throughout the coach. (This compressed air source is furnished from the front right side reservoir.) A compressed air outlet fitting and air gun are contained in the rear storage compartment on the curb side of the coach, convenient for inflating tires, and so on. A Schrader valve (air connection) is available in the engine compartment to allow the air system to be pressurized from a "shop" source without the necessity of starting the engine.

AIR STEP SPEED ADJUSTMENT

The adjustments for the entrance step are located under the center portion of the step and are combined with sintered bronze exhaust filters. The extend adjustment is close to the center of step and the retract adjustment is to the rear.

to adjust the extend or retract function, loosen the lock nut (7/16" wrench) and turn adjustment with blade type screw driver as follows. To increase speed turn counter-clockwise. To decrease speed turn clockwise. When adjustment is complete tighten lock nut.

COMPRESSED AIR SYSTEM AIR DRYER

The air dryer unit collects and removes moisture and contaminants from the compressor air output before the air reaches the reservoirs. This unit is different from a reservoir drain or an after cooler in that it provides dry air for the brake system by eliminating the possible accumulation of condensate in the system reservoirs. Note that each reservoir also has a drain cock on the bottom for draining accumulated moisture. This assures a long maintenance-free life for air brake system components due to the removal of system contaminants.

The air dryer is located between the compressor discharge (output) line and the compressed air reservoirs A safety valve mounted in the air dryer

housing assembly protects against excessive pressure buildup. The desiccant cartridge and pleated paper oil filters are easily removable and replaceable as a complete serviceable unit. the desiccant "beads" which provide the drying action have a large capacity for absorption due to their combined surface area. In addition, an internal thermostatically-controlled heating element prevents freeze ups on the purge drain valve when the unit is used during sub-freezing temperatures.

Purging of the dryer is automatic, exhausting combined oil and water residue to the atmosphere. At the same time that the contaminants are purged, the reverse air flow across the desiccant material removes the accumulated moisture and reactivates the desiccant. Refer to **Bendix Air Dryer Service Data Manual** for more detailed information.

APPLIANCES

INSTANT HOT

Provides an additional hot water source at the kitchen sink. Switch is located in the kitchen base cabinet. Operates from generator or shoreline.

ICE MAKER

The ice-maker, located in the kitchen base cabinet, is designed to provide a continuous automatic supply of ice cubes. It will operate unattended providing the water supply line is open and ac power is applied to the unit. This may be supplied from shoreline, generator, or inverter.

Refer to the manual in your owner's kit for additional instructions.

FOOD CENTER

A variable-speed motor-driven unit, recessed in the kitchen countertop that may be used with blending attachments for a large variety of food preparation tasks. The food center is designed for ac operation and is operable only when the generator is on or when coach is connected to shoreline.

REFRIGERATOR/FREEZER

Operates from the LP gas supply, 120 vac or from 12 vdc output while in transit. Changeover is automatic depending on available power supply. LP gas has the lowest priority.

To ensure that your refrigerator will provide trouble-free operation, the following routine maintenance procedures should be performed at least once each year.

1. Inspect all gas connections for leakage, using a solution of soapy water. Do not use products that contain ammonia or chlorine. Tighten, as necessary.
2. See owner's installation and operating instruction manual in your owner's kit for periodic maintenance requirements and operating in structions.

When the coach is parked, it must be leveled to assure the refrigerator will perform properly. Place a bubble level (furnished with unit) on the freezer shelf. When the vehicle is moving, the continuous rolling and pitching movement will not affect the refrigerator as long as the movement passes either side of level; but when the coach is parked, the refrigerator must be level (within 6 degrees).

COOKTOP (RANGE)

The gas supply for the cooktop burners is provided from the LPG tank. The cooktop is equipped with a 120 volt electric igniter. Refer to the manual in your owner's kit for detailed operating instructions.

MICRO/CONVECTION OVEN

The microwave/convection oven provides programmed microwave cooking, convection operation for crisp, even browning, or a combination of both. (See the manual in your owner's kit for detailed operation and caution notes.) Operates from shoreline or generator.

AWNING OPERATION

See **Optional Equipment, Section 17.**

CHASSIS SPECIFICATIONS

ACCELERATOR CONTROL

Control with high idle included in Cruise Control.

AIR COMPRESSOR

12.0 CFM capacity @ 1250 RPM

AIR RESERVOIR

Four tanks - Two with 2072 cubic inch capacity each and two tanks with 1240 cubic inch capacity. Total capacity 6624 cubic inches.

ALTERNATOR

160 ampere Prestolite or Delco, belt driven.

AXLES

14,600 lb. front; 23,000 lb. rear, single speed, 5.29 ratio; all wheel bearings oil lubricated.

BATTERY

Two 12 Volt, group 31, 1850 cold cranking amps @ 0 degrees F, 360 minutes reserve capacity; maintenance free.

BRAKES, EMERGENCY

MGM 36" Magnum Piston Type Spring Brake System with Treadle Valve Control - separate Dash Mounted Valve provided for parking.

BRAKES, SERVICE

The coach is equipped with a dual service air brake system which includes two independent systems for the front and rear service brakes. The front system includes a 30" brake chamber with 16-1/2 x 5 brake shoes, the rear system includes a 30" brake chamber with 16-1/2 x 7 brake shoes for a total of 755.4 square inches of lining area. Brakes are Rockwell Q Series. A Bendix air dryer is included with the air brake system. Each brake chamber has an automatic slack adjuster to compensate for brake shoe wear.

CRUISE CONTROL

Bendix Cruise Control (includes high idle)

DRIVE LINE
Spicer 1710 Series with protective guard around shaft

ELECTRICAL SYSTEM
12 Volt

ENGINE
Caterpillar 3208 TA (AAAC) engine governed speed 2800 RPM

EXHAUST SYSTEM
16 gauge aluminized steel with heavy duty in line muffler

FILTER
Racor Fuel Filter Water Separator and Preheater at rear of LPG compartment. Secondary filter under engine on curb side.

FRAME
One-Piece Channel 10-1/8" high with 3-1/2" Flanges made of 5/16". 50,000 PSI steel, Section Modulus - 14.8 $In.^3$ Frame insert used in high stress areas at rear suspension, Section Modulus - 24.55 $In.^3$

FUEL TANK
200 gallon capacity

GROSS VEHICLE WEIGHT RATING
37,400 lbs.

HORN
Dual Electric and Dual Air with Selector Switch

OIL FILL & CHECK
Located behind road side engine compartment grille door

SHOCK ABSORBERS
Direct acting, Double Action Piston Type front and rear

STEERING GEAR
Ross Model HFB-70 with 23.3 to 1 ratio with Integral Power Steering, Tilt and Telescoping Steering Wheel

SUSPENSION
Ridewell Air Suspension

TIRES

Tubeless 12R 22.5 16-Ply Rating Michelin Steel Cord Radial with XZA Tread, Single Front Dual Rear

TURNING RADIUS

* CURB RADIUS
38.0 ft

** WALL RADIUS
43.0 ft

* Curb radius is the distance from the center of the turn to the outside edge of the front tire.

** Wall radius is the distance from the center of the turn to the outside edge of the front bumper.

NOTE
Turning Radii is with Standard 12R22.5 tires

TIRE/WHEEL CHANGE PROCEDURE

The wheel/tire assemblies used on your motor home are heavy-duty truck-type. They are heavy and may be difficult to handle. If at all possible, changes should be accomplished by a service station equipped to handle truck equipment. However, if a situation rises where no service facilities are available, the following procedures may be used.

CAUTION

Severe injury or death may result. DO NOT use the leveling system for changing tires or working under the vehicle. Keep the rear wheels in firm contact with the ground with the parking brake set. With the leveling jacks extended, there is a possibility the vehicle may move either toward the front or the rear.

NOTE

Jack and lug wrench are not furnished with coach. An outside drive axle wheel may be used to replace front wheel until permanent replacement can be made. Road speed must not exceed 40 MPH.

FRONT AXLE WHEELS

1. Drive motor home out of traffic lane onto a level surface capable of supporting jack.
2. Turn on hazard flasher and apply parking brakes before leaving coach.
3. Turn off ignition and set transmission selector to Neutral (N) position.
4. Remove white plastic wheel saver.
5. Place wheel chocks against front & rear of tires on opposite side.
6. Place jack under axle and raise slightly until securely in place.

CAUTION

Bumpers are not designed for lifting and/or towing of the vehicle.

7. Pull off lug nut covers.
8. Install wheel saver.

NOTE

It is recommended that the wheel saver be used when loosening or torquing lug nuts.

9. Loosen lug nuts slightly, then jack up coach until tire is clear of ground. Solidly support the vehicle under the main frame rails with jackstands or blocks before working under or around the coach.

NOTE

Lug nuts on right side of coach are right hand threaded (turn counter-clockwise to loosen, clockwise to tighten); lug nuts on driver's side of coach are left hand threaded (turn clockwise to loosen, counter-clockwise to tighten).

10. Remove lug nuts and wheel assembly.
11. Install spare and replace lug nuts. Tighten progressively in the sequence shown on lug nut tightening sequence diagram, starting with #1 and proceeding to #10. Final torque will be 450 to 500 foot pounds. Wheel must be on ground for final torque.
12. Snap front hub cover into front wheel opening after front lug nuts have been properly torqued.
13. Place lug nut covers on all lug nuts. Make certain that these nut covers fit snugly. This is accomplished by squeezing the dimpled sides to gether before installing.
14. Lower coach to ground and remove jack and handle.
15. Replace wheel saver, lug wrench, jack and handles in storage compartment and tie down to prevent road noise. Return damaged wheel/tire assembly to holder and have it repaired as soon as possible.
16. Remove and stow wheel chocks.
17. Turn off hazard flasher before returning to traffic.

DRIVE AXLE DUAL WHEELS

1. Repeat steps 1 through 9, front axle wheels.
2. Loosen inner lug nuts (studs with square heads), if inner wheel is to be replaced.
3. Remove outer lug nuts from the (5) studs which have lock rings and slide hub cover over remaining lug nuts.
4. Remove the (5) remaining lug nuts and wheel.
5. Remove inner lug nuts and inner wheel, if inner wheel is to be replaced.

6. Install replacement wheel and inner lug nuts. Tighten progressively, in the sequence shown on lug nut tightening diagram, starting with #1 and proceeding to #10. Final torque should be between 450 and 500 foot pounds. Wheel must be on ground for final torque.
7. Install outer wheel (or replacement wheel) and lug nuts over inner lug nuts marked 1, 3, 7, 9 and 6. Torque nuts in the following sequence 1, 7, 6, 3 and 9 to between 450 and 500 foot pounds.
8. Install hub cover over the (5) lug nuts holding wheel to hub. Place lock rings and lug nuts on remaining inner lug nuts 10, 5, 2, 4 and 8.
9. Replace wheel saver.
10. Torque nuts in the following sequence 10, 2, 8, 5 and 4 to between 450 and 500 foot pounds. Wheel must be on ground for final torque.
11. Return to step 14 of Front Axle Wheels and continue.

NOTE

When checking torque on dual wheels loosen all outside lug nuts. Check torque on inner lug nuts (studs with square heads) for torque value shown above then torque outer lug nuts to value shown above.

CAUTION

Check lug nuts for tightness every 1,000 miles. Lug nuts should be torqued to 450 to 500 foot-pounds.

POWER STEERING

POWER STEERING RESERVOIR FLUID LEVEL

Regularly check fluid level in the power steering reservoir. Reservoir is located behind rear engine compartment door to right of radiator. Add Dextron II as necessary to maintain the correct dipstick reading, depending on fluid/engine temperature. (Note that the dipstick is attached to the T-handle plug on top of the reservoir). If the fluid is at normal operating temperature - about 150 degrees, and hot to touch - the dipstick should indicate FULL or just below. If engine is cool, fluid level should read about 1/2 way between the ADD and FULL marks.

CAUTION

When inspecting or servicing engine or other components in engine compartment, the engine control switch must be placed in OFF or REAR position to prevent starting of the engine from the driver's area.

POWER STEERING FLUID

Specification	Dextron II
Capacity	4 quarts

TIRE INFLATION - TOWING - TRAILER

TIRE INFLATION

Under-inflation causes needless tire wear and promotes excessive fuel consumption. Check tire pressures on a regular basis.

The Federal Certification Label, shows the cold tire inflation pressures necessary to support the Gross Axle Weight Ratings.

These pressures can be reduced to greatly improve the ride quality after the actual axle weights have been determined (see **Vehicle Loading in the Introduction Section**).

The chart below is taken from the Michelin Tire Data Book and shows the recommended tire inflation pressures for various axle weights. If any axle weight is on the borderline, always use the higher pressure. Be sure weight is distributed evenly, side to side.

LOADS PER AXLE (lbs.) AT DIFFERENT PRESSURES
2 TIRES: SINGLE (S) 4 TIRES: DUAL (D)
INFLATION PRESSURE (psi)
SIZE - 12R22.5 MAX. SPEED - 65 MPH

	PSI	70	75	80	85	90	95	100	105	110	115
LBS.	S	9,410	9,980	10,560	11,140	11,740	12,310	12,910	13,480	14,060	14,780
	D	16,840	17,860	18,960	20,030	21,130	22,190	23,220	24,220	25,220	26,440

In addition, a tire inflation information plate is located on the inside of the 120 VAC load center door. These are normal pressures as long as the axle weights are not in excess of those shown.

TOWING

Two towing eyes are provided behind the upper part of the generator door. Remove generator grille for access.

CAUTION

Do not tow a vehicle equipped with ZF ECOMAT automatic transmission unless the drive shaft has been removed, or the rear wheels raised from the ground. Do not attempt to tow unit by front axle or

crossmember. Damage to wiring and/or air lines can result because of proximity of these items to front crossmember. Do not tow with generator tray extended. Do not tow by the bumpers. Air pressure is required to release brakes.

TRAILER HITCH CAPACITY

The Receiver Hitch Box capacity is 7,500 pounds tow and 750 pound tongue weight. The Standard Hitch bar and ball that is furnished with the coach is rated for 5,000 pounds tow and 500 pounds tongue weight. Hitch ball nut must be torqued to 200 foot pounds.

UPPER DASH PANEL

NOTE

Some items operate at all times, some require the 12 volt master (A/T switch) to be on, while others need the 12 volt master and the ignition on. Gauges marked with an * require the engine to be at normal operating temperature for correct readings.

*** WATER TEMPERATURE**

Normal: 180 degrees to 210 degrees F.
Monitors engine coolant temperature.

CAUTION

If the engine temperature gauge indicates excessively high temperatures, the engine may be overheating and should be stopped to prevent damage. Allow the engine to cool before checking the radiator coolant level.

***OIL TEMPERATURE**

Normal: 200 degrees to 250 degrees F.
Gives a constant reading of the engine oil in the supply line from the pump. If the temperature goes over 250 degrees, the engine may be low on oil or there is overheating of the cooling system.

*** OIL PRESSURE**

Normal: 50 to 80 PSI @ cruising speed, 5 PSI minimum at idle. Indicates the pressure of the oil, not the amount of oil in the engine reservoir.

CAUTION

No oil pressure, or low oil pressure readings (below 25 psi) when engine is operating at cruising speeds are trouble indications! Do Not Operate The Engine Under These Conditions!

AIR PRESSURE FRONT/REAR

Normal: 110 to 135 PSI

The Dual Air Service Brake pressure systems are engine operated and supply independent brake system air pressure for front and rear service brakes and the parking brake. During normal operation, each air pressure gauge reading will build up to 110 psi to 135 psi shortly after the engine is started. Note that, as a safety feature, the parking brake cannot be released until air pressure readings are at least 65 psi.

FUEL LEVEL

Indicates the amount of diesel fuel remaining in the tank. Note that the generator also gets its fuel supply from this tank. The gauge reads only when the ignition switch is in ON position. As a precaution against generator operation draining the fuel supply, the generator fuel pickup is shorter than the engine pickup. Separate fuel filters are provided for each fuel line.

ALTERNATOR/CHARGER AMPS

Shows total charging current in amperes. With the engine running, total alternator output is shown, when parked, with a source of 120 volt ac, (outside power or generator), the gauge will show total output of battery chargers.

DC VOLTS COACH

Normal: 14 volts $\pm$ 0.5

Monitors the actual voltage at the coach batteries with the engine running.

DC VOLTS ENGINE

Registers the actual voltage at the engine batteries. With the engine running, gauge should read 14 volts $\pm$ 0.5.

LOW FUEL

When this light comes on the operator should begin looking for a refueling station.

LOW AIR (LIGHT & BUZZER)

These warn the driver that there is an insufficient supply of air (65 psi or less) to properly operate the coach. If the air pressure is low, when the ignition key is turned on, the light and buzzer will come on immediately. Both warnings will continue until the air pressure is built back up, or the ignition key is turned off.

ACCESSORY

This blank position may be used for the installation of an additional switch for customer add-on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

A/T (ANTI-THEFT)

(Anti-Theft) deactivates the starting system for protection against unauthorized cranking and theft. This switch also provides 12 volt master switch operation to shut off 12 volt battery power to all circuits except digital clocks, radio memory, monitoring panel functions, refrigerator control system, and burglar alarm.

ENGINE ALARM

This indicator, along with a Buzzer Alarm, monitors engine operation. If the oil pressure or the coolant level drops too low or if the coolant temperature gets too high, the engine alarm light and buzzer will be activated.

HEADLIGHT ALERT

When the ignition switch is turned off while headlight switch is on, this warning light, along with a buzzer, will come on. These will remain on until the headlight switch is turned off or the ignition switch is turned back on.

LOWER DASH PANEL

NOTE

Some items operate at all times, some require the 12 volt master A/T switch to be on, while others need the 12 volt master and the ignition on. Gauges marked with an * require the engine to be at normal operating temperature for correct readings.

SPEEDOMETER

Indicates speed and accumulated mileage (odometer). This is a solid-state electronic monitor.

TACHOMETER/HOUR METER

Indicates actual engine RPM (Revolutions Per Minute) when scale (0-40) reading is multiplied by 100. Idle RPM should be 700 and full load (uphill) 2800 RPM. May go to 3000 RPM under no load conditions (downhill). HOURMETER shows number of hours engine has been in operation.

ACCESSORY POSITIONS

These blank positions may be used for the installation of additional switches and indicator lights for customer add on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

TRANS. OIL TEMPERATURE

Indicates temperature of the transmission oil. If the warning light comes on reduce use of transmission retarder. See information on use of transmission retarder in the **Transmission Section**.

HIGH BEAM INDICATOR

The Blue Bird logo is illuminated when high beam is selected using steering column switch.

*** TURBO BOOST**

Registers the pressure of the Turbo Compressor outlet. The gauge should read an approximate maximum of 10.75 psi at maximum power.

TURBO PYROMETER

Registers the temperature of the exhaust gas output of the Turbo. The correct temperature of the exhaust should be around 900 degrees F. at maximum power.

SYSTEM INDICATORS

WATER IN FUEL

This light comes on when there is an excess of water in the bottom of the fuel tank.

SUSP. DUMP

Light comes on to indicate that the suspension system has little or no air, and that the suspension needs to be pressurized before the coach is driven. See **Air Suspension System** for additional information.

LEVEL WARNING

This light comes on when any of the four (4) leveling jacks are not fully retracted.

ACCESSORY

This blank position may be used for the installation of an additional switch for customer add on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

MIRROR HEAT

This switch turns on a thermostatically controlled heater in the right and left outside mirrors (convex mirrors excluded). With the switch ON the Mirror Heaters will automatically come on to defog the mirrors.

DEFROST

Turns on the blower for defrosting or defogging the windshield. Set to HI- or LOW speed as desired. See **Defroster Operation** for additional information.

REAR PARKING

This switch controls the On-Off operation of the rear parking lights (rectangular halogen lights on the rear of the coach) when transmission selector in R. An indicator next to the switch lights when the rear parking lights are on.

HEAT (PILOT'S)

To turn on the chassis heater blower for the pilot's area press this switch to either the HI- or LOW position. Note that when the front heat control is in cool position the heat switches can be used to provide cool air circulation by turning on the blowers. See **Heating Systems** for additional information.

HEAT (CO-PILOT'S)

To turn on the chassis heater blower for the co-pilot's area press this switch to either the HI-or LOW position. Note that when the front heat control is in cool position the heat switches can be used to provide cool air circulation by turning on the blowers. See **Heating Systems** for additional information.

LEFT LANDING

At the ON position this switch turns ON the optional landing lights on the left side. Note that a small green indicator lights when the lights are on.

RADAR MASTER

Turns on power to radar detector. The Radar Detector is a high-sensitivity superheterodyne microwave radar detector. This unit, is designed to activate when transmissions are received from radar-type speed detection equipment.

NOTE

Because some states have ruled radar detection equipment illegal, it is the responsibility of the driver or owner to obey the appropriate laws. (There are quick-disconnect features provided which allow for easy removal of the unit.)

See **Radar Detector Owner's Manual** for additional instructions.

ACCESSORY

This blank position may be used for the installation of an additional switch and indicator light for customer add on equipment

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

RIGHT LANDING

At the ON position this switch turns ON the landing lights on the right side. Note that a small green indicator lights when the lights are on.

DASH DIMMER

This control will only operate when the headlight switch is on. The background lighting (electroluminescent) for the dash can be brightened by turning counter-clockwise and dimmed by turning clockwise.

HEADLIGHTS

The headlight switch serves two functions. Press P for parking lights and gauge illumination. Press the bulb symbol for headlights, parking lights and gauge illumination. The dimmer controls brightness of all gauges in dash. Turn counter-clockwise to increase or clockwise to decrease the brightness.

AISLE LIGHTS

This switch allows you to turn the aisle lights on or off from the pilot's chair.

LEFT TURN INDICATOR

When the turn signal lever is pulled down into the left turn position, this indicator flashes in conjunction with the outside directional lights.

The left cornering light will come on continuously if the headlights or the parking lights are turned on while the turn signal lever calls for a left turn.

ACCESSORY

This blank position may be used for the installation of an additional switch for customer add on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

AUXILIARY BATTERY

A three-position switch -- On, Off, and Momentary On. The Momentary On position connects chassis and coach batteries to aid in engine or generator starting should this need arise. The On position connects both sets of batteries to the battery charger and is primarily intended to maintain all batteries during long-term storage. The Off position is the normal position while the coach is in use either driving or parked.

SUSP. DUMP

Switch for suspension air. See **Air Suspension System** for operation.

ACCESSORY

This blank position may be used for the installation of an additional switch and indicator light for customer add on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

AIR COMPRESSOR MASTER

This switch operates the auxiliary air compressor (optional equipment) which is a 120 vac operated back up air compressor. See **Optional Equipment** for additional information.

ACCESSORY

This blank position may be used for the installation of an additional switch for customer add on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

HORN SELECTOR

Allows selection of the air or electric horns when the steering wheel horn button is depressed.

BACK UP ALARM

This switch, in the ON position, enables the back-up alarm buzzer when transmission selector is in R.

WIPER DELAY

Knob adjusts wiper speed from 2 to 20 sweeps per minute when intermittent operation is selected at steering column switch lever.

AUX. STEP

An ON-Off switch that, when set to the EXTENDED position, activates a relay automatically locking the outside entry step in the EXTENDED position. The indicator light comes on to remind you that you need to retract the step before proceeding.

HAZARD

This switch turns on the emergency flashers. When switch is used, both left and right turn signals will flash in unison.

THE HORN

See **Musical Horn** for operation.

RIGHT TURN

When the turn signal lever is pushed up into the right turn position this indicator flashes in conjunction with the outside directional lights. The right cornering light will come on continuously if the headlights or the parking lights are turned on while the turn signal lever calls for a right turn.

The indicator, along with the left turn indicator and all outside directional lights, flash in unison when the HAZARD switch is pressed to the ON position.

LO WASH FLUID

Light indicates when there is approximately 1/4 fluid level remaining in the fluid reservoir. See **Driver and Co-Pilot Area** for additional information.

UPPER RIGHT HAND DASH PANEL

LIGHTER

Depress to heat the element; pops out when hot.

DOOR LOCK

Switch used to lock and unlock the dead bolt lock on the entrance door.

COLD START

An ether injection system used to aid starting the engine in cold weather. To activate valve, depress switch for three seconds to fill valve then release switch to inject charge into engine. Allow three seconds before starting engine.

CAUTION

Use only for starting engine and inject just prior to cranking.

LEFT VENT

Opens and closes the pilot's fresh air vent.

RIGHT VENT

Opens and closes the co-pilot's fresh air vent.

NOTE

Front heater lever must be at COOL and HEAT fans ON to obtain fresh air.

LOWER RIGHT HAND DASH PANEL

IGNITION SWITCH

A four-position, standard-type key switch. In OFF position (center), ignition and accessory positions are disabled and the key can be inserted or removed. In ON position (right) the battery is connected to the engine-run ignition circuits (with A/T switch on) and the key can be advanced to START to start the engine, providing that the transmission selector is in neutral N position, and toggle switch in engine compartment is in FRONT position. The accessory position is not used.

SHIFTER PANEL

TRANSMISSION SHIFT SELECTOR

A lighted six (6) push button selector allows the operator to select a forward gear range, reverse or neutral. The gear selection is as follows:

R = Reverse
N = Neutral
D = 1st - 5th gear
3 = 1st - 4th gear
2 = 1st - 3rd gear
1 = 1st gear only

Refer to the **ZF Manual and the Transmission Section** of this manual for additional information.

AC/HEAT

These switches allow the driver to start or stop the roof air conditioners or the electric heaters from the dash area while driving.

ACCESSORY

This blank position may be used for the installation of an additional switch and indicator light for customer add on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

COCKPIT LIGHT

This switch controls On-Off operation of the fluorescent lights above the driver and co-pilot.

FOG LIGHTS

This switch is for the standard fog lights. Fog lights operate only when headlights are on low beam.

DRIVING LIGHTS

Switch for optional driving lights which only operate when headlights are on high beam.

CRUISE CONTROL

These two switches operate in the following manner: The switch on the left turns the cruise control on or off. The switch on the right locks the cruise control in on the desired cruising speed.

Note that the coach must be traveling at least 20 mph before the cruise control will activate. When the desired speed is reached, press the ON-OFF switch to the ON position then press the SET-RESUME switch to the SET position and hold for 2 seconds before releasing. The coach should automatically remain at the speed.

Note that the accelerator can be used to increase the speed of the coach, but the speed cannot be decreased unless the brake pedal is depressed, or the ON-OFF switch is turned OFF. If you use the brake to disengage the cruise control, and you would like to pick back up to your original cruising speed, press the SET-RESUME switch to the RESUME position for 2 seconds. The coach should automatically return to the original speed.

Engine idle speed can be increased, while parked, by means of the cruise control switches, push the ON-OFF switch to ON; then push and release RESUME switch rocker until desired RPM is attained. RPM will return to normal idle speed when:

1. CRUISE CONTROL ON-OFF switch is turned off.
2. Transmission selector is moved from N position.
3. Parking brake is released.

RETARDER

Refer to **Transmission Section** for operating instructions.

CLEARANCE

Clearance, identification and marker lights are turned on by headlight switch. The CLEARANCE switch has a momentary off to flash lights as a courtesy signal.

INVERTER

Refer to **Electrical Section** for operation.

CB VOLUME

Controls volume of CB speaker by turning the knob left or right.

ELECTRIC MIRROR ADJUST

This switch controls both left and right mirror heads by rotating the switch either left for the left mirror or right for the right mirror. Pushing the switch knob to the left rotates the selected mirror to the left, pushing the switch knob to the right rotates the selected mirror to the right, pushing the switch knob up rotates the selected mirror up, and pushing the switch knob down rotates the selected mirror down. Only the flat mirror portion of the mirror will rotate. The mirrors also contain a heating element to help prevent fogging over in inclement weather. The switch for the heater element is located on the lower dash panel.

POWER/ECONOMY

Provides signal to transmission electronic control unit (ECU) in determining one of two available shift programs. Physically, the engine RPM to shift time is changed. Power means quicker acceleration and better climbing capabilities. Economy means better fuel efficiency/mileage.

LEFT HAND LOWER DRIVER'S AUXILIARY PANEL

MONITOR

Brightness, contrast and On/Off controls adjust in the same manner as any black and white TV.

System includes CCTV camera located in rear of coach. See **Video and Audio Section** for more information. Refer also to the manual in your owner's kit for additional information.

FRONT HEAT

This slide control opens or closes and modulates the valve in the chassis heater hose line. Controls heat to the pilot/co-pilot area. Refer to **Heating Systems** for additional information.

LEFT HAND OVERHEAD DASH PANEL

ACCESSORY

These blank positions may be used for the installation of additional switches.

ENG. PREHEAT

Energizes engine coolant circulation pump for optional heat exchangers in hydronic heating system.

WATER PUMP

Switch for "Demand" water pump in fresh water system. Indicator light shows when pump is enabled.

DASH DIMMER

This control will only operate when the headlight switch is on. The background lighting (electroluminescent) for the left hand and right hand overhead dashes can be brightened by turning counter-clockwise and dimmed by turning clockwise.

SPOTLIGHT

The roof-mounted remote-control high intensity spotlights (optional) are operated by the SPOTLIGHT controls. The spotlights produce 100,000 BCP (beam candle-power) each and can be turned on and off, positioned horizontally or vertically at an adjustable rate of speed, and can be used for spot or flood lighting. The following controls operate the spotlights:

SPOTLIGHT SELECTOR SWITCH

Depressing switch, left or right, selects left hand or right hand light to be aimed.

SPOTLIGHT BEAM SELECTOR SWITCH

Depressing left side of switch turns on both lights in the FLOOD mode. Right side position selects SPOT mode. Center position is OFF.

SPOTLIGHT SPEED CONTROL

Adjusts speed of light head movement during aiming function.

SPOTLIGHT AIM CONTROL

Controls horizontal and vertical beam position of light, selected on spotlight selector switch.

CAMERA DEFOG SWITCH

Energizes the circulation fan in the compartment for Closed Circuit TV (CCTV) camera to minimize interior fogging.

AIR CONDITIONER

Controls the pilot and co-pilot chassis air.

LEFT FAN SWITCH

Three speed blower for left front area of coach.

TEMPERATURE SELECTOR

Thermostat setting controls temperature by cycling compressor.

RIGHT FAN SWITCH

Three speed blower for right front area of coach.

CLOCK PANEL

This panel includes a digital readout. Four switches to the left of the display set clock timing. To set TIME display press HR SET/MIN SET switch to HR SET position and hold until correct hour is displayed; repeat with switch in MIN SET position until correct minutes are displayed.

The ELAPSED TIME display will show elapsed time in terms of hours and minutes, or in minutes and seconds, depending on the position of the HRS/MIN-MIN/SEC switch. Set this switch as desired, press ZERO to reset the display to a 00:00 readout, and the elapsed time will count. The HOLD/GO switch may be set to HOLD position to suspend operation of the elapsed time display; for elapsed time operation, leave switch in GO position.

SAFELINE ALARM

The Safeline alarm operates whenever the shoreline is connected to the coach and the ignition switch is in the ON position as a reminder to disconnect the shoreline before driving away.

With the Safeline switch ON, the alarm is given by buzzer sound and red light. The buzzer can be deactivated in favor of a flashing amber light by turning off the switch. In addition, this alarm will operate whenever the TV antenna is not fully retracted.

ACCESSORY

This blank position may be used for the installation of an additional switch for customer add on equipment.

CAUTION

Use existing panel holes for installation of additional controls or indicators. Drilling new holes will destroy the electroluminescent lighting.

WATER IN FUEL

Light and buzzer alarm indicates that excess water is in the Diesel Fuel Filter (Racor).

GENERATOR START/STOP

See **Generator Section** for operating instructions.

TRIP ODOMETER

Indicates miles driven since last reset. Depress bar to reset.

ANTENNA SWITCHES

Both switches must be pushed simultaneously to cause raising or lowering of TV antenna. Indicator will light and a buzzer will sound when TV antenna is up from the secured position when ignition switch is turned on.

FUEL VACUUM GAUGE

Racor fuel filter element should be changed when pointer goes over 10 inches HG vacuum. See **Racor Fuel Filter.**

RIGHT HAND OVERHEAD DASH PANEL

GENERATOR OIL PRESSURE

Shows the oil pressure, not the amount of oil in the generator engine reservoir. This gauge will normally read between 30 and 60 psi. Low oil pressure indications are often a symptom of possible generator failure. Oil level should be checked on a regular basis. Note that the generator has a low-oil pressure shut-off switch which activates if the generator oil pressure falls below 15 psi.

GENERATOR WATER TEMP.

Displays generator engine coolant temperature. Normal operating temperatures vary from 160 to 200 degrees F. If consistently high temperatures are indicated, shut down the generator, wait for the engine to cool, then check radiator coolant level. Note that the generator has a high-temperature shut-off switch which activates if the generator temperature reaches 222 degrees F.

D.C. AMPERAGE

Ammeter on left (labeled CHARGE) shows net current flow to or from batteries. Needle movement from the center of the gauge indicates discharge to the left and charge to the right. When parked, following highway travel, it is normal to see a needle position to the left of center even when plugged into shore power (or running generator). This will gradually diminish and should eventually show some movement to the right with coach loads turned off.

Ammeter on right (labelled COACH LOAD) shows current demand of 12 volt load.

A.C. VOLTAGE

Voltmeter on left monitors LEG ONE while that on right monitors LEG TWO of 120 volt alternating current circuits.

CAUTION

Appliances can be damaged by low voltage. Loads should be balanced so voltage does not drop below 110 volts for either leg. Low campground (shore-power) voltage can be detected quickly from gauge readings. If cause of low campground voltage can not be corrected, generator power will have to be used during periods of high appliance demands.

A.C. AMPERAGE

Ammeters show current flow in LEG ONE (left) and LEG TWO (right) of 120 volt alternating current circuits. POLARITY NORMAL indicator (yellow), lights whenever the shoreline hookup is properly connected and grounded and line polarity is compatible with coach wiring and a POLARITY REVERSED indicator (red) lights when hookup is reversed.

A faulty ground connection is indicated if none of the LEDs are lighted.

ENTRANCE DOOR SYSTEMS CONTROL

PORCH LIGHT

Operates all exterior right hand side porch lights.

ENTRY LIGHT

Operates the valance light over the entrance door.

LOWER LIGHTS

Controls the fluorescent lights under the living room overhead cabinets.

UPPER LIGHTS

Controls the indirect fluorescent lights above the living room overhead cabinets.

ACC

Accessory Blank Positions.

STEPLIGHT

Three position switch controlling lights in stepwell area.

STEPMASTER

Allows the air step to remain in the extended position when leaving the coach. This switch can also be used to retract the step.

Note

When air pressure drops below 65 psi the entrance step will extend and lock into place. The step will not retract until sufficient air pressure has built up.

CO-PILOT SYSTEMS CONTROL PANEL

CB VOLUME

Controls the volume of the CB.

GALLEY SYSTEMS CONTROL PANEL

The systems monitoring and control panel, is located above the microwave/convection oven. This panel provides a convenient means of displaying inside and outside temperature, level of potable water supply, holding tanks, and LPG supply, as well as other functions discussed in the following paragraphs.

GENERATOR

Start-Stop switch; refer to Generator Section for operating instructions.

PUMP

Switch for "Demand" water pump in fresh water system. Indicator light shows when pump is enabled.

LPG MASTER

Switch provides convenient means for controlling LPG supply to coach. Eliminates necessity of operating exterior LPG mechanical service valve especially while refueling.

REFRIGERATOR ALARM

When the switch is on, the refrigerator temperature is being monitored. Normally, the ON indicator is lit; if the refrigerator temperature increases to an unsafe level, an audible alarm is sounded.

TANK MONITOR

The Tank Monitor panel provides an illuminated readout of the content level of the pure water, gray water and waste water tanks, and the LPG tank level. Use the features of this panel as follows:

1. Monitor Pure, Gray or Waste Tank levels by depressing the respective button. The content level in the tank is indicated by five sets of lit readings. The E lamp, at the left of the display, is lit all the time; if the next indicator is lit, the level is approximately 1/4 FULL; if the center indicator is lit, tank level is between 1/2 and 3/4 FULL; if the 3/4 indicator is lit, tank level is between 1/2 and 3/4 FULL; if the 3/4 indicator is lit, tank level is between 3/4 and FULL; and if the F indicator is lit, tank level is full. If only the E indicator is lit, the tank level is between empty and 1/4 FULL.

2. LPG tank level can be monitored in the same manner as the water tank level by depressing the Propane Tank button. Note that this display is pre-calibrated. However, it is neces sary to recalibrate the display, this can be done when the tank is full by setting a rear-panel adjustment. Note that the display will read FULL when the LPG tank float reads 80% because the remaining 20% volume is needed for vapor space.

THERMOMETER

This provides a digital display of inside and outside temperature. Monitor inside or outside temperature (degrees F) by pressing the Temp In or Temp Out buttons.

BEDROOM PANEL

The bedroom panel above the bed contains the following:

DRAPE SWITCHES

Open or close the optional electric bedroom drapes. These switches are wired parallel to the wall mounted drape switches on the front bedroom wall.

GENERATOR SWITCH

Refer to **Generator Section** for operation.

LIGHTS SWITCHES

AISLE switch controls the aisle lights and FLUO controls the fluorescent lights in bedroom only. The latter is three way wired with the light switch on the bedroom wall.

ALARM CLOCK

Set the clock by depressing the Fast or slow set button until the correct time is shown. PM is indicated by lighted dot in the upper left corner. The dot in the center of the display marks the seconds. Set alarm as follows: depress Alarm Display button then depress the Fast or Slow button to set the alarm time. Dot in upper left corner will light when alarm is set for PM. After setting the alarm, release Alarm Display button to return to the normal time mode. To activate the alarm feature, depress Alarm On/Off button to On; to shut off the alarm, depress Alarm On/Off button and release so it pops out to Off.

NOTE

When 12 volt power has been interrupted (batteries disconnected or electronic Master switch turned off) clock display will flash "12:00". Reset clock to eliminate flashing. Alarm will also have to be reset.

SECURITY SWITCHES

LOCK switch controls the dead bolt entrance door lock. LIGHTS switch illuminates left and right hand landing lights, and rear Halogen parking lights.

DRIVER & CO-PILOT AREA

HORN

Operate the horn by pressing in on the center section of the wheel. Select air or electric horn with the HORN SELECTOR switch on the dash.

COMBINATION TURN SIGNAL/HIGH BEAM, AND WASHER/WIPER SELECTOR

Push lever toward dash for right turn signal, pull lever away from dash for left turn signal. Pull lever up toward steering wheel and hold for momentary high beam. When lever is released, low beams are activated. Push lever down until switch is activated for high beam operation. Pull lever back toward steering wheel to go to low beam operation. The washer ring is located at the end of the lever and when pushed, activates the windshield washer. To activate the wiper twist lever from **-0-** position to **I** or **II** for continuous speeds or to INT for intermittent operation. When in **INT** position the delay of the wipers can be changed by the wiper delay knob on the lower dash panel. Twist lever back to **-0-** position to turn wipers off. Ignition must be **on** to operate the wipers.

Check windshield washer reservoir fluid level periodically and use a prepared washer solution if possible. (Note that low reservoir levels are indicated by a dash monitor light.) During freezing weather, use a solution additive, or a solution specifically designed for cold weather usage. The washer reservoir is accessible through the front road side storage compartment.

TILT LEVER

Pull lever up to release lock mechanism. While holding lever up, adjust the steering wheel to a comfortable position and release lever. Move the steering wheel slightly to make sure the column locks into position.

CAUTION

Always make sure that the lever is in the fully locked position in whichever detent setting is used. Do not change the wheel tilt setting while the coach is in motion.

TELESCOPING STEERING WHEEL

To unlock the telescoping wheel, twist center section of steering wheel counter-clockwise and adjust wheel to comfortable position. While holding steering wheel at desired position with one hand, lock it into position by turning the center section of wheel clockwise.

PARKING BRAKE

The Parking Brake control is located under the lower dash, to the right of the steering column. Note that the parking brake cannot be released unless the system air pressure is at least 65 psi. Pull to set and push to release.

AIR HORN FOOT SWITCH

Operates highway horns. Located on the floor to the left of the steering column.

ACCELERATOR PEDAL

Controls engine fuel flow to select power output. See **Diesel Engine Section** for detailed description.

BRAKE PEDAL

The coach is equipped with a dual air brake system which includes independent systems for the front and rear service brakes. A separate reservoir and panel mounted pressure gauge is provided for each service brake system. Refer to **Air Brake System** Section.

SEAT CONTROLS

Electrically operated six-way seat adjustments are built into the pilot's and co-pilot's seats.

Three electric SEAT CONTROLS are used to control seat bench tilt, up-down and front-back seat movement.

These seats may be rotated by a knob in the arm rest. A lever on side of seats controls back tilt, an additional switch (optional) controls lumbar support.

DEFROSTER OPERATION

The Defrost **Hi-Off-Low** Switch is included on the lower dash panel. Hot air may be diverted to assist in the defrosting operation provided that...

1. The engine is running.
2. The Slide Control for Chassis Heat is moved from the Cool Position.

The chassis air conditioner blowers can be used for cold air defogging of windshield in high humidity conditions. Turning either left or right fan switch on will energize the compressor if the temperature selector setting demands cooling.

CAUTION

For proper defroster operation, do not block the area between the dash and the windshield.

DEAD BOLT LOCK OPERATION, ENTRANCE DOOR

The entrance door has an automotive style two position catch. The second position is required for FMVSS certification. For maximum security and minimum wind noise be sure the door is fully closed. A dead bolt lock is also provided for your security, however it will only engage and retract if the door is fully closed. Should you inadvertently open the automotive latch with the dead bolt engaged, you will have to shut the door to retract the dead bolt.

Dead bolt can be activated from a switch located on the upper right hand dash panel.

ELECTRICAL SYSTEMS

There are two interrelated electrical systems used in your motor home ... the 12 volt dc supply system; and the 120 volt ac supply system. The 12 volt dc system is divided into several branches, or zones, each functioning from the common 12 volt battery source. One branch provides the 12 volts required for the automotive starting, ignition and lighting systems; remaining branches supply those motor home circuits and appliances which require 12 volts dc for operation.

The 120 volt ac system includes those motor home appliances which require 120 volts for their operation, supplied from either the internal generator, or from the external 120 volt ac (or a split 240 volt ac) supply, via the shoreline hookup. The inverter will supply 120 volt power from the coach batteries to selected circuits.

12 VOLT DC SUPPLY SYSTEM

Wiring diagrams of the 12 volt supply and distribution system are included in the Illustrations & Diagrams Section.

The 12 volts supplied to all motor home appliances, outlets and accessories is routed from the batteries through a main 12 volt master switch (A/T) and routed through busses to the individual branches, or zones, that are serviced from this supply. Circuit breakers are located behind the pilot's overhead compartment, lower front load center (behind removable panel outside front of coach) and at each of the zones. The circuits supplied and fuse or circuit breaker protection at each zone are shown on the diagrams.

COACH BATTERIES

Four (4) 12 volt Marine/RV deep cycle batteries are located on a roll-out tray in the road side front compartment. These will provide 8.4 hours of operation, at a 25 ampere rate, when a charging source is not available.

BATTERY CHARGING

The 12 volt coach battery supply, is maintained fully-charged by either the engine alternator (when engine operates); or by battery charger. The engine battery system is normally charged by the alternator only. The coach and engine battery systems are separated by a relay to prevent deterioration of voltage in the event of one or the other supplies becoming defective.

In the event of a failure of either battery systems, the systems may be tied together through the above relay buy the aux. battery switch on lower dash. The momentary position of the switch should be used for cranking engine. The ON position should only be used for charging engine batteries by the battery chargers.

Batteries can become discharged because of coach 12 volt loads, while parked, without a 120 volt ac source. For overnight stops this presents no problem, with judicious use of 12 volt service, because the engine alternator will recharge the batteries rapidly during the next day's travel. When operating from shoreline or generator power, the batteries obtain the major portion of the charge during "sleeping" time, while coach loads are low, so that the battery charger can "top off" the batteries.

If it is planned to leave the coach parked without exterior power for two days or longer turn off the Electronic Master switch (in addition to the A/T) located in the pilot's front overhead cabinet.

While in transit, the DC volts gauges on the upper dash panel should reflect an alternator regulated setting of 14 volts $\pm$ 0.5. When parked, with 120 volt source supplied, the DC VOLTS COACH gauge should read between 12.5 and 14.0 volts depending upon load. When parked, without 120 volt source, do not permit voltage to drop below 11.5.

After a trip, ALTERNATOR/CHARGER AMPS ammeter may show some discharge reading even when 120 volt source is supplied, if there is a load on the 12 volt coach circuits. The Float type battery charger operates in the 12-14 volt range when there is a load.

AC SUPPLY SYSTEM

Motor home ac-operated appliances are supplied from either an external shoreline hookup or from the on-board generator. Selection of shoreline or generator power source is determined automatically by a remote changeover switch located adjacent to the 120 VAC breaker/distribution panel. The 120 vac circuits are normally supplied by the shoreline power cable. Whenever the generator is started, the automatic changeover switch will detect the generator voltage and will switch to the generator in approximately 25 seconds.

POWER LINE MONITORS

Dual power line monitors are located on the right hand overhead dash panel, to monitor the voltage and amperage in both legs of the ac shoreline supply (or generator supply). The monitors have a polarity and ground detector circuit to indicate possible elec-

trical hazards due to incorrect hookups.

An additional power line polarity monitor is located in the shoreline/utility box. Refer to **Shoreline Operation** Section.

AC CIRCUIT BREAKER AND DISTRIBUTION PANEL

The main AC Distribution Panel is located in the end of the kitchen base cabinet adjacent to the entrance door.

BATTERY CHARGER/CONVERTER

Two 45 amp. chargers are located in the curb side front compartment. They convert 120 volt ac into 12 volt dc to maintain the batteries in a charged condition when there is a 120 volt source.

BATTERY CHARGER HIGH/LOW SWITCH

This switch is located in the utility (Shoreline) compartment. It disconnects one charger when there are low demands for 12 volt service.

INVERTER

A 1500 watt inverter provides auxiliary power to operate ice maker, front overhead television, one kitchen receptacle, and optional electric drapes, while in transit, from 12 volt source. It is located in the curb side front compartment.

LOAD MANAGEMENT

There are five important 12v system gauges located in the driver's area which, if properly understood and occasionally monitored, will ensure proper operation and prevent an inconvenient and possibly damaging situation of discharged batteries.

On the upper dash are:

Engine volt gauge for two engine batteries.

Coach volt gauge for four coach batteries. Proper charger operation while parked will keep batteries between 12.5 and 14.0 volts depending on load.

Alternator/charger Amp gauge shows alternator output while driving or charger output while parked with 120 VAC service from shoreline or generator.

On the overhead dash are:

DC amperage gauge (labeled CHARGE) shows net output from the battery charger or alternator to the batteries.

DC amperage gauge (labeled COACH LOAD) shows the amount of 12 volt current being consumed by coach systems.

The sum of these two readings should approximate the alt/charger amp reading. Be sure, with load management techniques, that coach load does not exceed charger capacity. This is easily determined by ensuring; (1) DC amperage (charge) gauge shows positive reading, and (2) upper dash coach volt gauge does not drop below 11.5 volts. Should battery voltage fall below this range, remember:

1. The auxiliary battery switch on lower dash may be helpful in starting the engine or the generator as needed.
2. Battery voltage below 9v will damage fluorescent light bulbs and possibly the light ballast. Turn off fluorescent lights with low battery voltage!

STORING THE COACH

If you plan to store your coach without 120v power for (2) days or longer, be sure to turn off your master (A/T) switch, the electronic master in the pilot's overhead compartment, and inverter at both shifter panel and inverter switches. Your objective is to minimize power drain.

With both masters off, you can still expect a battery discharge of 2-4 amps because of non-mastered circuits to refrigerator, and engine/ transmission control circuits.

For storage over a three (3) week time period, disconnect your batteries if there is no shore power available for the battery charger.

The best storage technique is to turn off both master switches, turn off the inverter at both switch locations and run your battery charger 24 hours per week. This procedure will keep batteries up but avoid a damaging overcharge condition.

ENGINE, DIESEL

IMPORTANT

Always consult your Caterpillar and ZF transmission owner's and operator's guides before operating vehicle. These manuals are furnished in your Wanderlodge® owner/operator kit.

Proper operation and maintenance are key factors in determining the useful life and operating economy of a diesel engine. Follow these directions for trouble-free, economical operation.

TO START ENGINE

Caterpillar 3208 engines will start at temperatures above 32 degrees F (0 degrees C) without using a starting aid. However, for cold temperatures it will be helpful to activate the engine block heater (120 volt ac-operated). The ENGINE BLOCK HEATER is controlled by a switch located in the kitchen base cabinet. Remember to turn switch OFF after starting.

When outside temperature is below 35 degrees F (+2 degrees C), turn on ignition switch for a maximum of 10 minutes, so Racor fuel filter heater element can warm the fuel, before starting engine.

Refer to **Caterpillar Manual** in your owner's kit for engine starting instructions.

REMOTE ENGINE STARTING

Because it may sometimes be necessary to start the diesel engine remotely, a separate key switch is located on the right side of the engine radiator compartment. Be sure the hinged switch cover is snapped back in place after key withdrawal to prevent moisture damage. Toggle switch must be down (REAR) to start engine from engine compartment.

TO STOP ENGINE

With the vehicle stopped, apply the parking brake. Refer to **Caterpillar Manual** in your owner's kit for engine stopping instructions.

FUEL TANK

If WATER IN FUEL light on dash comes on, remove drain plug from the bottom of the tank to remove water. Fill fuel tank after completing a run. Partially-filled tank will collect moisture if the coach is allowed to sit for an appreciable length of time.

FUEL ADDITIVE

Fuel Additive Recommended for Use with #2 Diesel Fuel ...
US Borax Biobor JF
Fuel Additive to use per 100 gallons ... 2.8 fl. oz.

ENGINE AIR FILTER REPLACEMENT

Check the air filter condition indicator, remotely mounted under engine oil fill on road side of engine (see illustration), on a regular basis. Filter should be replaced if red band is shown. WL P/N 1258615.

CAUTION
Do not operate the engine without the air filter in place or sensitive air metering systems may be damaged.

CRANKCASE OIL LEVEL CHECK

The oil level must be checked only with the engine off. Maintain oil level at the proper fill line. If checking oil level immediately after engine has been operating, allow a few minutes for the oil to drain back into the crankcase before checking the oil level reading.

The best time to check the oil is before getting underway because the engine is cool and the reading will be most accurate.

Check crankcase oil level before starting and when refueling. The oil level dipstick and oil fill (yellow "T" handle) are located behind the roadside engine grille (see illustration). Be sure oil level is always between the F and L dots.

FUEL FILTERS

A Racor fuel filter/water separator is incorporated in the diesel fuel supply line and processes the fuel supply for maximum purity. It is located in the curb side compartment in front of the entrance door (LPG compartment).

The fuel filter/water separator includes a built in Racor in-filter disc pre-heater, which operates automatically below 35 degrees F. (+2 degrees C), when ignition switch is on, from the 12 volt DC battery supply, and a water sensor, which lights a dash indicator and sounds a buzzer when the water level in the bowl is high enough to require drainage. (See **Racor Manual** for additional information.)

When fuel vacuum gauge goes over 10 inches HG vacuum, replace element with WL P/N 3831310 (Racor 2020SM); also gasket (large) WL P/N 3747359 (Racor 11007), and gasket (T-Handle) WL P/N 3747342 (Racor

11350)

A secondary fuel filter is located under the engine on the curb side. WL P/N 2236677 (CAT 1R2299)

OIL FILTER

Two oil filters are located under the engine on the curb side. These should be replaced at each oil change. WL P/N 3743481 (CAT 9N6007).

CAUTION

Cooling fan operation is controlled electrically by a thermostat which senses engine coolant temperature. Any time the engine is running the fan may engage and start to run without warning. The engine must be shut off and the fan stopped before servicing.

COOLANT

Open rear engine door and check coolant level (with engine cool and off). Fill to the top of the sight glass, on road side of tubular surge tank, with coolant mixture. Use clean water that is low in scale-forming minerals, not softened water.

COOLANT SPECIFICATION:	50% water, 50% low silicate ethylene glycol. Base antifreeze (Formulation Standard GM 6038-M)
COOLANT ADDITIVE:	NALCOOL 2000

AUXILIARY FUEL PUMP

In the event fuel prime to the engine is lost because of running out of fuel or changing fuel filters, the prime can be restored with the auxiliary fuel pump.

The switch is located at the key start position in the engine compartment. The switch is to be held on while cranking the engine. If the engine does not start within 30 seconds, discontinue cranking and check all fuel lines and filter connections for leaks.

ENGINE COOLING SYSTEM REFILL

CAUTION

Cooling fan operation is controlled electrically by a thermostat which senses engine coolant temperature. Any time the engine is running, the fan may engage and start to run without warning. The engine must be shut off and the fan stopped before servicing.

Use of low silicate ethylene glycol base antifreeze (formulation standard GM 6038-M) is recommended for summer or winter operation because of it's corrosion inhibition and lubrication properties. A 50-50 solution of antifreeze and water is preferred and it gives freeze protection to about 30 degrees F below zero. Ultimate protection is attained at 68% antifreeze (about 92 degrees F below zero) a higher concentration of antifreeze should never be used.

The approximate (dry) cooling system capacity is 48 quarts.

The system requires 6.0 gallons of antifreeze for a 50% solution or 8.2 gallons for a 68% mixture. Final solution should always be tested with a thermo-hydrometer or equivalently reliable testing device to determine actual protection.

If it becomes necessary to completely refill the chassis coolant system, the following procedure must be followed. Pure antifreeze can be used initially until prescribed amount has been installed and then water for final filling.

1. Fill the engine, radiator, and engine hoses. Locate and close the manual gate valves separating the engine from the heater system. Pressure and return gate valves are located on the engine with access through the left hand engine compartment. Remove the radiator cap and fill to the top. Replace cap and run engine @ 1500 to 2000 RPM for one minute to purge air from the engine water jacket. Shut off engine; carefully remove the radiator cap; refill and replace the cap.

CAUTION

Use extreme care at all times when removing the radiator cap as hot coolant under pressure can cause injury.

2. Fill the heater system.

Air bleeder valves are located at behind the left hand rear bumper and at the right hand front heater with access through the front access panel

(black tubing). Leave the return line gate valve closed and open the pressure line valve. Slide the FRONT HEAT control to warm.

Using suitable containers to catch coolant, open the bleeder valves and run the engine slightly over 2,000 RPM until a steady flow of coolant passes through the front heater bleed valve. Close front heater bleed valve. Continue until a steady flow comes form rear bleed valve.

NOTE

The radiator must be filled often during bleeding procedures.

Close rear bleeder valve and open return gate valve (engine compartment). Refill radiator using coolant recovered from bleeder valves and additional coolant as necessary. Start and rev engine to maximum governed RPM 2-3 times. Shut down engine and allow to cool. Fill radiator completely so that coolant goes to the top of the sight glass in surge tank.

COOLING SYSTEM ADDITIVES

Automotive cooling systems are subject to various types of corrosion, rust, pitting and cavitation-erosion. These are common factors which prevent efficient cooling and contribute to engine overheating and higher maintenance costs resulting from replacement of hoses, fittings, filters and cracked heads. The manufacturer of the engine used in your motor home recommends the use of Nalcool 2000 -- a chemically buffeted liquid additive which effectively neutralizes the formation of acids caused by dissolved exhaust gases, and inhibits the cooling system against corrosion and scale formation. This additive is compatible with most commercial automotive antifreeze solutions containing ethylene glycol; however, its use is not recommended in cooling systems using DOWTHERM 209. When refilling the coolant system, add four pints of Nalcool before topping off with antifreeze solution. To ensure constant system protection, replenish Nalcool 2000 additive, periodically, in accordance with manufacturer's instructions.

SWING OUT RADIATOR

A feature of the WLSP is a swing-out radiator which facilitates engine accessory belt changes.

CAUTION

Do not swing out radiator with engine running. Fan could start unexpectedly and cause serious injury.

BATTERY MAINTENANCE

Your motor home is equipped with separate engine and coach battery systems for greater assurance that there will be sufficient voltage to crank the motor home engine.

Two engine batteries are located in the engine compartment on the road side. Those located in the road side front compartment are used for coach loads.

The coach batteries are charged from either the alternator or battery chargers.The engine batteries are charged from only the alternator (unless the auxiliary battery switch is in the ON position which permits the engine batteries to be charged by the battery chargers.) In order for the battery chargers to operate, either the generator must be running or the coach must be connected to a shoreline supply.

To make sure that the batteries are always ready for use, periodically check and charge as necessary.

A dirty battery may eventually dissipate its charge through conductive surface contamination. Clean battery top surface with a damp cloth and dry thoroughly. Check the battery terminals and associated battery jumper terminals are tight and free of corrosion. To clean terminals, neutralize corrosive deposits with a solution of baking soda, rinse with clear water, and dry. Note that commercial type spray-on battery cleaners are available at automotive supply stores. Use as directed to keep the batteries clean. Spray-on cable and terminal protective coatings are also available, easy to use, and effective.

CAUTION

Avoid sparking of any form in the vicinity of the batteries.

CAUTION

Do not wear metal rings, watches or jewelry when working on or near the batteries, cables, solenoids, or chassis wiring. These can short out electrical wiring and cause injury.

BATTERY STORAGE IN FREEZING WEATHER

Batteries that are not kept full-charged must be given protection against freezing. Partially-charged batteries will freeze at low temperatures, so batteries must either be left charged or removed from the vehicle and stored in a warm location.

The motor home can be left connected to the shoreline ac supply and

the coach battery chargers will keep the coach batteries charged. Note that even in a warm location it is advisable to keep the batteries charged to prevent deterioration. The engine batteries are the sealed type and require no electrolyte service.

SERVICE

Replenish cells of coach batteries with distilled water to 3/8 inch above plates.

Coat Battery terminals with lubricant or protective coating.

BATTERY JUMP STARTING

Proper procedure for jump-starting, using the Wanderlodge engine batteries, is as follows:

1. Turn off all main battery-operated accessories in both vehicles .. lights, radio, etc.
2. Connect one end of the positive-coded jumper cable to the positive (+) battery terminal, and the opposite end of the cable to the positive (+) terminal on the other battery.
3. Connect one end of the negative-coded jumper cable to the negative (-) terminal on the other battery and the opposite end of the cable to the Wanderlodge engine block.
4. Once the engine of the disabled vehicle is started and brought up to idle, reverse the above procedure to remove the jumper cables. Always remove the jumper cable connected to the Wanderlodge engine block first to prevent sparks at the other battery.

CAUTION

Avoid sparks in the vicinity of a charging battery. The gas produced is explosive.

ENGINE SPECIFICATIONS

MAKE
Caterpillar 3208TA (AAAC)

TYPE
4 Cycle Diesel, Valve-In-Head, Turbo-charged Aftercooled

NUMBER OF CYLINDERS
8-90 Degree Vee

BORE (INCHES)
4.5 Inches

STROKE (INCHES)
5.0 Inches

DISPLACEMENT (CUBIC INCHES)
636 Cubic Inces

COMPRESSION RATIO
16.5 to 1

GROSS BHP @ RPM
300 @ 2800

PEAK TORQUE (LB-FT) @ RPM
750 LB.-FT. @ 1400 RPM

MAXIMUM GOVERNED RPM-LOAD
2800

MAXIMUM GOVERNED RPM -NO LOAD
3000

GOVERNOR-TYPE
Hydra-Mechanical

PISTON MATERIAL
Aluminum Alloy

CRANKCASE CAPACITY

Dry - 20.0
(Quarts) Refill - 16.0

COOLING SYSTEM
Capacity (Quarts) - 48 approximately
Fan - 29" Diameter - 6 Blade with Air Clutch

WATER PUMP CAP. @ ENG. RPM
90 GPM @ 2800

ALTERNATOR
Capacity - 12 Volt, 160 Amp

OIL FILTER
Type - Full Flow, Two Disposable

FANS, VENT & EXHAUST

KOOL-O-MATIC FAN

12 vdc power ventilator located in the kitchen.

OPERATION

1. Open inlet dampers on fan.
2. Be sure windows are open to provide proper air flow cooling and ventilation.
3. The heat-cool thermostat located in the kitchen activates the fan. The selector switch (at the bottom) must be moved to COOL and the temperature lever set so the fan will operate. The fan will then start automatically whenever the temperature rises above the desired level.

FANTASTIC FAN

12 vdc exhaust fan located in the bathroom.

OPERATION

1. Open damper from control located on the face of the vanity.
2. Turn on fan from control located on the fan. Set desired speed. Switch on fan may be left on in order for the vanity (remote) switch to operate all functions.

FRESH WATER SYSTEM

WATER SUPPLY AND DISTRIBUTION SYSTEM

The dual purpose Tank Water Fill/Commercial Water inlet connection is located on the road side at the rear of the coach. The Tank Fill On-Off switch, located in the shoreline/utility compartment, diverts the commercial water input to fill the pure water storage tank, located under the wardrobe. The tank is a non-pressurized type so that system water pressure is developed by pumping action directly into the supply lines, rather than by tank pressurization. A bacteriostatic water purifier system purifies all the water supplied to the coach.

COMMERCIAL WATER HOOKUP

When facilities are available, the Commercial Water hookup can be used to supply all coach water system requirements. In this manner, the coach water tank and pump system are automatically bypassed and water pressure is developed by the external connection. Water inlet pressure is regulated to 40-psi maximum, by a valve which is part of the city (commercial) water fill.

FILLING THE TANK - CAPACITY 96 GALLONS

To fill the water supply tank, connect the water hose to the commercial water inlet, set Tank Fill switch to ON, then turn on the water supply. When tank is full, as indicated by water overflow beneath the coach, turn the Tank Fill switch off, shut off the water supply and disconnect the hose. At this time, check that the Monitor panel readout indicates a full water tank. To check, press the Pure tank switch and observe that the E through F indicator segments are lit.

NOTE

The Tank Fill switch should be On only when the water tank is being filled. This switch must be in Off position at all other times.

SANITIZING THE WATER SYSTEM

Water system sanitizing procedures should be followed before the system is used for the first time, after long idle periods, where water may become stagnant; or after any suspected contamination of the water supply. Whenever possible, use a commercially approved tank sanitizer and follow the procedures on the product package. If it is not possible to use a commercial product, prepare your own mixture and sanitize the tank in accordance with the following procedures:

1. **Empty the Water Tank** - To drain tank, open the Cold Water Drain (manual) valve located in the rear curbside compartment. After tank is completely drained, close Cold Water Drain.
2. **Prepare the sanitizing solution -** using 1/4 cup of household bleach (sodium hypochlorite solution) for each gallon of water. Use one gallon of the 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 use 1/2 cup of household bleach with one gallon of water to prepare the chlorine solution. Seven gallons of solution will be adequate for the tank. (100 Gallons)
3. **Add sanitizing solution to water tank** - Disconnect overflow hose from tank accessible through trap door in wardrobe floor, and pour solution into vent fitting. A curved piece of 1 1/4 I.D. hose, clamped to the vent fitting, will facilitate this process. Reconnect overflow hose.
4. **Fill tank to capacity** - Connect hose to the commercial water inlet, set the Tank Fill Switch to On and fill water tank completely. Shut off hose, and set Tank Fill switch to Off. Turn on water pump. Open each faucet (hot and cold) and run the water until a distinct odor of chlorine can be detected. Shut off water pump.
5. **Allow the system to stand** - for at least 4 hours when disinfecting with 50 ppm residual chlorine. If a shorter time period is desired, then a 100 ppm chlorine concentration should be permitted to stand in the system for at least 1 hour.
6. **Drain Tank** - Open the Cold Water Drain valve and allow the tank to drain completely.
7. **Refill Tank** - Close the Cold Water Drain valve, and turn on the water supply to the commercial water inlet, set Tank Fill switch to On and fill tank completely. When the tank is full, set Tank Fill switch to Off, shut off water supply and disconnect hose, replace fill cap and turn on water pump. When water flows from opened faucets, close them and open other faucets until water flows. This flushes the system, removing trapped air from the piping and ensures that the fresh water supply is ready for use.

NOTE

Residual tastes or odors can be removed by again draining and rinsing the system with a vinegar solution mixed to the ratio of one quart of vinegar to five gallons of water.

POTABLE WATER DISTRIBUTION SYSTEM

The major components of the potable water distribution system are the bacteriostatic water purifier, water tank, "Demand" water pump, air accumulator, water heater, piping and fixtures.

WATER PURIFIER

The bacteriostatic water purifier, located under the bed, filters and purifies the potable water supply to eliminate tastes, odors and coloration produced by chlorine, rust, insecticides, detergents, sediment and other foreign objects. Satisfactory elimination of water-borne disease-carrying bacteria is accomplished by a hygienic filter bed which consists of silver ions absorbed on sponge silver metal which is deposited in a finely divided form on granular activated carbon of high surface area.

The water purifier is a self contained unit, requiring no routine or periodic maintenance.

Each time the filtered water supply is used for drinking or cooking purposes, run the tap for a few seconds to clean out the line prior to using the water. This is particularly important if the water tap is not used on a daily basis. If the water supply has not been in use for extended periods, allow the water to flow for a minute or two before use.

CAUTION

Do not permit sanitizing or antifreeze solutions to enter water purifier.

PURIFIER REPLACEMENT

Depending upon the condition of the municipal water used, the filter media will normally process 75,000 gallons of water before the purifier will need to be replaced. For the majority of "Wanderers" this means there will be at least five years of useful life.

The only practical way to determine when replacement is required is to go by the sense of taste. If a faint taste of chlorine is detected, it is time for a change. Even when there is a noticeable taste, the bacteria stopping properties have not been compromised.

AIR ACCUMULATOR

An accumulator located in the curbside rear compartment in the water system smooths out the water flow, and eliminates water hammer and pulsations from the water pump. This accumulator has a diaphragm which separates the air on top from the water so it will not become water logged. It comes chartged with 20 psi, which may be increased to 25 psi through Schrader valve on top if desired.

WATER HEATER

The 10 gallon Marine Electric Water Heater located in the curbside rear compartment, has a "motor aid" heat exchanger to ensure a supply of hot water while in transit and upon arrival at your destination. The electrical heater can be used whenever 120 volts ac is available. The heater switch, located in the kitchen base cabinet, should be switched Off when heated water is not needed.

CAUTION

Do not turn water heater off if outside temperature is 32 degrees or lower when potable water system is not drained.

CAUTION

Be sure water heater tank is full before turning switch on.

OUTSIDE FAUCET

An outside faucet is provided in the curbside rear compartment. This also serves as the low point system drain.

WATER PUMP

The water pump, located in the curbside rear compartment, is equipped with a factory-calibrated pressure control switch which is preset to turn the pump on when the system pressure falls below 20 psi; and turn the pump off when the pressure reaches 35 psi. If the pump has been out of service for a period of time, it is advisable to open a faucet before turning the pump on. When water flows steadily from the opened faucet, close faucet and observe that pump shuts off when system becomes pressurized. (It may also be necessary to bleed the air from the other faucets as well.) When the potable water supply tank level is low, or empty, shut the pump off to prevent possible damage to the pump motor. In addition to integral

motor overload protection, the pump mechanism is also protected from jamming by the presence of an in line filter (pump guard) between the pump and the supply tank.

Under normal usage, the water pump should require no periodic maintenance other than ensuring that the input water supply is properly filtered of particles that could damage the pump mechanism. Pump failures can generally be tied in to the plumbing system, or to electrical wiring. If the pump fails to operate properly, refer to the general troubleshooting guide. Note that detail pump repairs and overhaul should be performed by a qualified repair facility.

The pumpgard filter should be cleaned periodically.

WATER PUMP SWITCH

Three Water Pump On-Off switch/indicators are provided for separate control of water pump operation. One switch is located on the control panel in the galley area; the second is located in the bathroom medicine cabinet while the third is on the pilot's overhead panel. The pump may be operated On or Off from each location. The associated indicator is lit whenever power is being supplied to the pump. Setting any switch On pressurizes the water system, with the pump operating on demand to maintain constant pressure. Continuous or erratic pump operation can indicate an empty water tank, system leakage, or air lock in hot or cold water lines.

TOILET SHUT OFF VALVE

Located through an access below the bath vanity.

WATER PUMP TROUBLESHOOTING GUIDE

Symptom
  Possible Cause
    Corrective Action

Pump operates but no water flows through faucet.
  Low water level in tank.
    Add water
  Suction lines or filter clogged.
    Clear water lines and clean filter.
  Kink in water suction hose.
    Check water hose connections to tank and straighten or replace, as necessary.
  Air leak in suction line.
    Replace suction line.

Pump cycles on and off when faucets are closed.
Water leak in plumbing.
Check for signs of leakage and tighten or replace fittings, pipe, etc.
Defective toilet flush valve.
Repair flush valve.

Pump operates roughly and has excessive noise and vibration.
Intake line is restricted, kink in suction hose or fittings too small.
Check input hoses and straighten or replace, as necessary.
Loosened screws at pulleys and connecting rod.
Tighten screws.
Deformed or collapsed pulsation dampener in pump.
Replace dampener.

Pump fails to start when faucet is opened.
Clogged pressure piping.
Blow out water lines with compressed air.
No voltage to pump.
Check input wiring circuit breaker and switches.

Pump fails to stop when faucets are closed.
Empty water tank.
Add water.
Insufficient voltage to pump motor.
Check battery voltage. If voltage is OK, pump is defective.

WINTERIZING

If you are planning on storing your motor home in an unheated area during cold weather, it will be necessary to winterize the water system to prevent damage from freezing conditions. Winterizing procedures are covered in the following paragraphs.

DRAINING AND WINTERIZING THE FRESH WATER SUPPLY SYSTEM

The following procedures show the use of the various drain valves, controls and pressurized air system to remove the water from the plumbing and appliances in the fresh water supply system.

1. Open the main circuit breaker box and turn off the Water Heater and Instant Hot circuit breakers or open kitchen base cabinet doors and turn off switches.

2. Turn on Water Pump switch and open all faucets (galley sink, lavatory, shower, outside hose connection and toilet water valve - after depressing pedal insert block to maintain position). Also remove drain plugs at rear of toilet and at bottom of Instant Hot. Refer to the **Ice-Maker and Toilet Manuals** for winterizing these units.
3. Open the Cold Water Drain valve and the Hot Water Drain valve (located on heater). Both valves are located in the curbside rear compartment.
4. Allow water to drain completely before proceeding to the next step.
5. Turn On Water Purge Air Pressure switch to activate the solenoid which applies air pressure to the input water line to purge the water system. Note that it may be necessary to start the engine to build up air pressure.
6. When only air remains in the lines, close drain valves and all faucets. Replace drain plugs in toilet and Instant Hot. Operate the Instant Hot valve to clear the heat exchanger of remaining water.
7. Turn Water Purge Air Pressure Switch and Water Pump switch off, and shut down engine.
8. Disconnect both hoses from the water pump to prevent residual water from backing up into the pump.
9. At this point, the only water remaining in the system is contained in the P traps beneath the lavatory and kitchen sink. To prevent this water from freezing and damaging the traps, pour one pint of RV system anti-freeze into each drain. See **WASTE SYSTEM WINTERIZING**.

Note

When reactivating system, make sure Instant Hot and Water Heater are full of water before switching on.

FREEZE PROTECTION

Thermostatically controlled-heat blankets (120 vac) are located under the water supply tank and holding tanks. These will come on when the outside temperature drops below 40 degrees F. (approximately) provided there is a 120 volt source.

The LPG Hydronic Heating System has eliminated the need for freeze protection heaters and heat tape on water lines while the coach is heated. If coach is to be stored in cold climates, follow winterizing procedures.

NOTE

The optional hydronic immersion heater will prevent freeze-ups during storage as long as the coach shore line is plugged into outside power.

GENERATOR

GENERATOR OPERATION

The generator can be started and stopped from any of three locations within the coach. At the left hand overhead dash panel, at the galley panel, or at the bedroom panel. In addition, the generator can also be operated from the controller box located on the generator.

To start the generator, push the generator switch to the start position and hold until the generator starts, as indicated by the indicator light. Do not hold switch on for longer than 5 seconds at a time! If the generator does not start the first time, wait a minute and try again. Release the switch when the indicator light glows. After starting, there will be a delay of approximately 25 seconds before the automatic changeover switch will permit the generator to pick up the load. The generator may be stopped by holding the switch to the Stop position until the generator stops (light extinguishes).

NOTE

Run generator at no load for three to five minutes before stopping.

In cold weather, it is necessary to activate the cylinder glow plugs before starting. Push Start-Stop switch to Stop position and hold for 15 to 20 seconds. See operator's manual for more detailed information.

GENERATOR MAINTENANCE

Refer to operator's manual in your owner's kit for maintenance requirements.

CAUTION

The generator tray is electrically operated and extends outward with considerable force. To extend the tray, move around to the road side and operate the tray switch in the front compartment to out position. Be sure that there is sufficient clearance in front of the tray and that nobody is in the way! Use extreme caution when observing and operating generator with tray extended.

NOTE

The generator hourmeter is located in the road side front compartment as is the generator IN/OUT switch.

AIR CLEANER

Donaldson does authorize cleaning the DuraLite unit (throwaway type) but this can be impractical in most cases. If it is cleaned, the following should be observed:

Blow air into the DuraLite's outlet neck causing dirt to flow off the media and out the dirty air inlet opposite the normal airflow direction. This procedure keeps the abrasive contaminants away from the clean air side.

Do Not use pressurized air higher than 100 psi.

Do Not use compressed air cleaning when the filter media is wet.

OIL CHECK/CHANGE

To be on the safe side, check oil (dipstick located on curb side of generator) in engine crankcase daily, or before each start, to ensure that the level is in the safe range between the upper (**F**) and lower (**E**) marks on the dipstick. Do not operate generator if level exceeds the upper mark, or is below the lower mark.

CAUTION

Do not check oil level while engine is operating. Engine must be stopped to obtain a true reading, as well as for safety reasons!

Whenever possible, drain the oil while the engine is still warm. To drain, place a container below the unit, open the oil drain petcock and allow sufficient time for the old oil to drain completely. After draining, close petcock and tighten securely.

COOLING SYSTEM

Cooling system capacity is about 10 quarts of liquid. System should be filled using equal parts of water and ethylene glycol. (A drain petcock is provided on the underside of the radiator.)

When draining the coolant, remove the cap from the tank and open the engine block drain cock located below the fuel injection pump.

Check coolant level frequently and add antifreeze mixture as needed to maintain full system and 1/2 full expansion tank.

GENERAL TROUBLESHOOTING

Refer to the **Generator Service Manual** for repair and maintenance data. Generator repairs should be accomplished by a qualified repair agency.

GENERATOR OVERLOADS

If the rated capacity of the generator is exceeded, the safeguard circuit breaker, located on the road side of the generator controller box, will trip to protect the generator against damage. This condition could be caused by a short in the coach ac supply circuits, or by operating too many appliances simultaneously, resulting in an overload condition. If the safeguard circuit breaker trips, the generator will continue running but no ac output will be supplied. Before resetting the circuit breakers, turn off some of the coach appliances and lighting to reduce the load to within the operating limits of the generator. If this is done, and the generator breakers still trip, a short circuit is indicated. Turn off the generator, locate and correct the cause of the short circuit.

OIL PRESSURE

Always ensure that with the engine running, oil pressure is registering on the overhead dash generator oil pressure gauge.

STORAGE PROCEDURES

If the generator is to be out of service for a long period of time, perform the following procedures before placing the unit in storage:

1. Drain oil from crankcase (while hot) and refill with specified oil. Run generator after change to circulate new oil.
2. Clean exterior surfaces of generator set, then spread a light film of oil over any unpainted metallic surfaces which could corrode.

GENERATOR SPECIFICATIONS

ELECTRICAL RATING
8.0 KW at 120 Vac

FUEL SUPPLY
Diesel, separate pickup in main tank

FUEL FILTER
WL P/N 2154276

COOLING SYSTEM
10 Quarts (approx.)

CRANKCASE CAPACITY
4 Quarts

OIL FILTER
WL P/N 4178612

OIL SPECIFICATIONS FOR GENERATOR
API Classification
CD 10W30/10W40
(See operator's manual)

AIR FILTER ELEMENT
WL P/N 3838158 (Donaldson ECB05-5001)

CHASSIS HEATING SYSTEM

Heat generated by the engine is supplied through the coolant to a 90,000 BTU unit for the pilot and co-pilot area.

OPERATION FOR DRIVER/CO-PILOT HEATER

1. The coach ignition switch must be on for operation of blower motors.
2. Select driver or co-pilot heat by the Hi-OFF-LOW heat switches on the lower dash.
3. Move slide control on the left hand lower driver's auxiliary dash panel to warm position.
4. Heated outside air can be provided for the co-pilot by opening the vent switch on the right hand upper auxiliary dash panel. For chassis heat on the pilot side, the left hand vent switch must be in closed position.

The driver and co-pilot heater is equipped with three squirrel cage dual speed blowers. One blower provides defroster air, one provides air to pilot side and the third provides air to the co-pilot side.

HYDRONIC HEAT EXCHANGER

Heat generated by the engine coolant is supplied to a heat exchanger which provides heat to the right side convectors and fresh water heater, while in transit, without the necessity of using an LPG boiler.

HYDRONIC HEAT EXCHANGER (OPTION)

When this option is selected, heat generated by the engine coolant is also supplied to a second heat exchanger which provides heat to left side convectors of the Hydronic System while in transit, without the necessity of using the LPG boiler.

LPG HYDRONIC HEATING

INTRODUCTION

The LPG fired Central Hot Water Heating System is electronically controlled and will keep you comfortable in the most severe cold.

Your coach incorporates two separate heating systems. The left road side system heats the left side of the coach and is controlled by the panel in the bedroom. The right curb side system heats the right side of the coach and is controlled by the panel above the pilot's overhead dash.

With the use of an electronic thermistor to sense inside coach temperature the system can control temperature variation in the coach down to less than one degree. The left side thermister is located over the dinette while the right side is over the kitchen counter in the standard floor plan.

The system uses low amounts of 12v dc current to operate, so it is not overloading batteries. With all systems on, the 12v dc current draw is less than 8 amps.

Propane usage is reduced as the boilers are 95% efficient, and are incapable of consuming more than 1.08 pounds of propane per hour.

The coach interior is heated with baseboard natural convectors on both sides augmented by power (12v dc) convectors. In the standard floor plan, the left side system has a power convector under the bed with a rheostat on the bath vanity while the right side has power convectors under the galley area and living room sofa with rheostats at the bottom of the overhead cabinets.

OPERATION

In order to start the boiler (located on curb side of engine) and circulation pump of each system, the temperature set/adjust knob must be rotated above the ambient temperature and button #1 (left side) depressed. The green boiler indicator light will come on.

The triangle in the upper left of panel contains a red light.This is a fault indicator. If for any reason the LPG source or the 12v dc current source is interrupted, this light will come on and the boiler will no longer function. The reason for the fault should be determined and then re-start the boiler by releasing button #1 and depressing again. Reset is automatic. The boiler indicator light (green) will remain on when the fault indicator light is on.

For more details see **Primus Operating Instructions** in owner's kit.

To heat the coach (right side) and fresh water while in transit, (engine aid heating) depress button #4 (right side) on front panel and turn on ENG. PREHEAT switch mounted on the pilot's overhead dash.

To heat the fresh water, only, while in transit, turn off the valves above the boilers (engine curb side), depress buttons #2 and 4 on front panel and turn on ENG. PREHEAT switch mounted on the pilot's over head dash.

To preheat engine, the boiler for the right side should be on. Then turn on ENG. PREHEAT switch on pilot's overhead dash.

ELECTRIC HEAT

Electric forced air heaters (120 vac) are located in the bathroom, and living room. Your electric heaters are provided for auxiliary heating. Since each heater draws 10-15 AC amps, operator load management becomes an important consideration.

LIVINGROOM HEATER OPERATION

1. The thermostat must be set to HEAT and set for desired temperature.
2. AC/HEAT master front switch on shifter panel must be on.

BATHROOM HEATER OPERATION

On/Off thermostat control on heater must be turned on and set.

ROOF AIR CONDITIONERS

Additional heat may be obtained from the heat strips in the two roof air conditioners.

INTERIOR & EXTERIOR CARE

CORIAN TOPS

Even stubborn stains ... such as grape or beet juices ... wipe off with a damp cloth and household cleanser. Because CORIAN is solid all the way through, it cannot be harmed by abrasive cleansers and normal household cleaners.

CORIAN is strong and tough, but slicing on it with knives can cause scratches. Use a cutting board.

While CORIAN does provide an extra measure of protection (better than ordinary counter tops), it is not recommended as a hot pad. Do not place hot pots and pans directly on your CORIAN counter top.

Since it's a solid material with color and pattern all the way through, unusual damage such as cigarette burns, scratches, or other surface abuse can usually be removed using ordinary household cleansers or fine sandpaper. If the stain persists, or if the scratch is particularly deep, first use a medium sandpaper (120 or 240 grit) then fine sandpaper (320 or 400 grit) followed by circular motion buffing with a scotch Brite pad to match the gloss of adjacent surfaces. Household cleanser, steel wool or Du Pont No. 7 polishing compound can also be used if higher gloss levels are needed.

CAUTION

Certain chemicals found in the home - such as paint removers, paint brush cleaners, acid drain cleaners and certain brands of nail polish and polish removers - can harm CORIAN if left in contact even for short periods of time. These materials should be wiped away promptly and flushed with water. Depending on time of exposure, surface damage caused by these materials can sometimes extend too deeply for practical repairs.

INTERIOR CARE

The interior can be kept in good condition with the use of approved cleaning agents for wall coverings and ceilings, plastic fixtures, stainless steel, formica and so on. Never use abrasive cleaning agents on interior of refrigerators, or on the lavatory, tub/shower, or toilet, as they can cause permanent scratches. Be sure that the cleaning agent will not damage the material. Note that some plastics are incompatible with certain cleaners. Read the directions on the container before using. For the most

part, the cleaners and polishes that would normally be used in your home are equally well-suited for use in your motor home.

EXTERIOR CARE

Exterior paint finish life can be extended by periodic cleaning and waxing. This will preserve the paint and allow easier removal of dirt and road tars. Use touch-up paint for small areas to keep the coach finish in like new condition.

Frequent washing of the coach is necessary to prevent corrosion in areas where heavy salt sprays are evident. A clear acrylic spray may be used, with care, to control corrosive effects of salt spray on metal surfaces.

Caution

Some car/truck wash facilities may use strong detergents or other chemicals that could cause permanent staining or streaking of exterior paint and aluminum trim. A strong alkaline solution, while useful for dissolving dirt, is a suspected harmful ingredient.

Before enlisting any commercial wash service or facility, you should determine that cleaning agents used will not damage the finish of your coach.

CAUTION

Avoid spraying water through the refrigerator vent door. Refrigerator PC control boards are not completely sealed and are vulnerable to an inadvertent dousing.

LEVELING JACK OPERATION

LEVELING JACKS CONTROLS

The motor home is equipped with four heavy-duty leveling jacks; one at each corner of the chassis.

Overall system operation is controlled and monitored at the leveling jack controls, while each jack is independently operated by one of four respective EXTEND-RETRACT levers located on the floor to the left of the driver. A dash indicator and a buzzer (when ignition switch is on) provide visual and audible signals to show that the associated leveling jacks are not stowed to a safe travel position.

CAUTION

Severe injury or death may result. Do not use the leveling system for changing tires or working under the vehicle. Keep the rear wheels in firm contact with the ground with the parking brake set. With the leveling jacks extended, there is a possibility the vehicle may move either toward the front or the rear.

NOTE

12 Volt master switch (A/T Switch) must be on to operate leveling jacks.

EXTEND JACKS

1. Set parking brake.
2. Depressurize suspension with SUSP. DUMP switch (on lower dash panel).
3. Turn ignition switch OFF.
4. Refer to HWH operator's manual in owner's kit for leveling instructions.

RETRACT JACKS

Refer to HWH operator's manual in owner's kit for retract procedures.

LEVELING JACKS RESERVOIR

The leveling jacks oil fill is located beneath the center entry step. Lift up the hinged step top (hinge at door side) and remove the screws attaching the square metal cover plate to gain access to the oil fill to check oil level.

LEVELING JACK FLUID

Specification	Dexron II
Capacity	10 quarts

LPG SYSTEM

The coach is equipped with a permanently mounted 44 gallon (148 pounds of fuel-net) LP gas tank which is the energy source for the cooktop-range, hydronic heat system and alternate source for the refrigerator.

LPG TANK AND CONTROLS

The LPG supply tank is located in a curbside compartment. LPG system controls include a main gas service valve, solenoid shut-off valve, two stage pressure regulator, filler connection with Auto Stop (80%) fill valve, 20% vapor (stop filling when liquid appears) valve, and the pressure relief valve.

WARNING

When coach is to be stored in a confined area, turn off the LPG at the main tank shutoff valve. With the LPG leak detector this may now be accomplished by turning off the LPG master switch on the galley panel.

LPG tank level can be monitored at the galley panel above the microwave oven.

FUEL REQUIREMENTS

Liquefied petroleum gas is a material composed of various hydrocarbons such as propane, butane, or a mixture thereof. In its gaseous form (vaporized) it is colorless and has a garlic-scented additive to ensure detection. In addition to being highly inflammable, it is also dangerous to inhale. For ease of transportation and storage, LPG is compressed into a liquid state and stored, in this form, within the LPG tank. As fuel is used, vapor passes from the top of the tank into the two stage pressure regulator and to the various gas appliances.

Appliances will not function if the LP gas does not vaporize. Butane will not vaporize below 32 degrees F. (the freezing point of water), but propane will continue to vaporize down to 44 degrees below zero. Propane has become the main type of LP gas used in RV's in recent years. Your LP supplier will have the correct type or blend for your locale. If your travels will take you into an area where climate differs, ask your LP dealer for his recommendations. The names of LP suppliers can be found in the yellow pages of your telephone directory under "Gas-Liquefied Petroleum - Bottled & Bulk". Many campgrounds now have LP gas fill facilities, as do

some service stations.

Prevent condensation and possible regulator or line freeze-ups, when filling the tank, by requesting the dealer to add a small amount of Methyl Alcohol to the fill up. A common mixture is one ounce of Methyl Alcohol to each 20 pounds of LPG.

NOTE
Liquefied petroleum gas is heavier than air.

FILLING THE LP GAS TANK

When the tank is being filled, the Service valve must be Closed and the 80% liquid level valve (20% vapor valve) must be Open. The 80% Auto stop fill valve may close before liquid appears at the 80% liquid level valve, but if liquid does appear, stop filling immediately; the tank is filled to its LP capacity. Close the liquid level valve. Do not use a wrench to tighten this or the Service valve; they are designed to be closed leak-tight by hand. If you cannot hand-tighten properly, the valve probably needs repair or replacement.

CAUTION
Be sure that the main LPG supply is shut off during re-fueling to prevent accidental ignition of gas fumes by appliance igniters.

CAUTION
All gas appliances must be cut off before filling the LPG tank. Check gas lines and fittings periodically for tightness and leakage.

REGULATOR

The two stage pressure regulator regulates the pressure of the LPG supplied to the appliances. The regulator functions automatically and is factory-preset to provide the correct line pressure. Do Not attempt to tamper with or reset the regulator! Even a small variation above the normal gas line pressure can be sufficient to create a dangerous situation and cause possible damage to individual appliance components. If there is any doubt about the regulator setting it can be checked by your Wanderlodge® dealer or LPG supplier. The correct setting is 11-14 inch water column.

OPERATION

To operate any LPG appliance, the main gas (Service) valve, must be Open. Also individual valves at each appliance must be opened prior to use. When first used, or after a refill, there may be some air in the gas lines which will escape when you open a range burner or similar LP gas valve. The air may extinguish your match or igniter the first time or two, before you get ignition. Remember, too, that when you close the tank's service valve some of the gas will remain in the lines. To completely bleed the lines of gas, close the tank's service valve and light a range burner to use up the excess. When the flame burns out, turn the range burner Off.

CHECKING FOR LEAKS

Periodically check the LPG system for possible leakage. Do not wait for an alarm condition to occur before correcting a leak! Although the entire system and associated appliances undergo extensive factory testing for leakage, road shocks and heavy vibrations may loosen or damage piping or fittings. Leaks will usually become noticeable by the characteristic odor of the garlic-scented gas additive. To check, turn off all burners and pilot lights. Open all doors and windows. Open LPG tank service valve and use an ammonia & chlorine free soap-bubble solution on all connections. Any bubbles are evidence of leakage.

NOTE

The gas leakage detectors may momentarily sound an alarm when the engine is initially started or when a heavy electrical load is placed on the system. Further, the ultra sensitive response of these units may also cause an alarm to be given in the presence of certain pressurized-can sprays or cleaning agents. Do not Assume! Always Determine the Reason for this Vital Alarm Being Given!

LPG CONSUMPTION

Most gas appliances are intermittently operated. However, operation during cold weather conditions does cause heavy consumption. The amount of LPG consumption depends on the total use and manner of use of these appliances.

Note that each gallon (4 1/4 lb.) of LPG fuel produces approximately 91,500 BTU's of heat energy. The LPG tank used in your coach will furnish over 3 million BTU's.

For your guidance in estimating your anticipated fuel consumption, the following is a listing of typical appliance consumption ratings when the appliance is operated for one hour:

Refrigerator	1,500 BTU's
Cooktop Burners	5,200 BTU's each
Hydronic Boilers	(2) 21, 500 BTU's each

LPG SYSTEM WARNINGS

WARNING

LP gas containers shall not be placed or stored inside the vehicle. LP gas containers are equipped with safety devices which relieve excessive pressure by discharging gas to the atmosphere.

WARNING

It is not safe to use cooking appliances for comfort heat.

This warning label has been located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike homes, the amount of oxygen supply is limited due to the size of the recreational vehicle, and proper ventilation when using the cooking appliance(s) will avoid 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.

Cooking appliances need fresh air for safe operation. Before operation:

1. Open overhead vent or turn on exhaust fan.
2. Open Window.

A warning label has been located near the LP gas container. This label reads.

WARNING

Do not fill container(s) to more than 80 percent of capacity.

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

WARNING

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

WARNING

Do not bring or store LP gas containers, gasoline or other flammable liquids inside the vehicle because a fire or explosion may result.

The following label has been placed in the vehicle near the range area:

IF YOU SMELL GAS

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

LP gas regulators must always be installed with the diaphragm vent facing downward. This will minimize any chances of vent blockage which could result in excessive gas pressure causing fire or explosion.

WARNING

Never check for leaks with an open flame. Do not check copper plumbing lines for leaks using ammoniated or chlorinated household-type detergents. These can cause cracks to form on the line and brass fittings. If the leak cannot be located, take the unit to your Wanderlodge® dealer or LPG supplier.

LPG LEAK DETECTOR SYSTEM

The system has been developed to the point where it is unique; it shuts off the LP gas at the high pressure source, yet holds the valve open to provide ample appliance flow with a minimum amount of current usage.

Three components make up the system

1. **Gas Detection Control Unit:** mounted on the rear dinette seat base. This is the "brains" of the system and provides an electrical signal to the solenoid valve when LPG service is required.
2. **Solenoid Valve:** installed in the high pressure LPG line feeding the two stage regulator. It is a "normally closed" solenoid valve and has a special winding of 22 ohms (approximate) resistance, so it uses very little current in the "hold open" position. In order to close the valve, it is only necessary to break the circuit. This provides a "fail-safe" feature in the event of loss of 12 volt power.
3. **LPG MASTER switch:** located on the galley panel.

The following events will result in an open/low voltage circuit and allow the solenoid valve to close and shut off the LPG supply:

1. Pushing the switch to OFF on LPG MASTER switch or the Gas Detection Control Unit. Green light will go out.
2. The Gas Detection Control Unit senses the presence of LP gas (or can be triggered by a propane lighter or even hair spray!) Green light out, Red light on, along with audible signal.
3. The Electronic Master Switch is turned off. Green light will go out.

NOTE
System is not Master Switch activated.

In order to restore LP gas flow to the coach, use the following procedures corresponding to the events above:

1. Push switch on the LPG MASTER and the Gas Detection Control Unit to ON. Green light will come on.
2. Correct the cause of LP gas leak, or determine if other fumes caused the shut down. Green light will come on.
3. Turn Electronic Master Switch on. Green light will come on.

NOTE
Because of the presence of an excess flow valve in the LPG tank outlet (safety feature), sometimes an appliance will not relight after a shutdown. In this circumstance, wait five (5) minutes for LPG pressures to equalize before relighting.

LP GAS GRILL

The LPG grill is stored in the right rear compartment.

1. Unfasten the rubber tie-down and remove grill.
2. Position legs and place grill on solid surface at right side of coach near LPG compartment.
3. Remove red plastic (large) cap from hose and screw fitting into back of grill regulator. On most installations this has been done at the factory.
4. Remove blue plastic (small) cap from other end of hose and insert plug (male) fitting into female quick disconnect (after removing cap) at regulator in LPG compartment. Valve handle at quick disconnect must be in off (crosswise) position in order to make connection.
5. Open valve at quick disconnect.
6. Push in knob on regulator, at right of grill and turn to HIGH.
7. The grill is equipped with an Electric Spark Generator that may be used to ignite the grill. Depress the red button on the electric spark generator to discharge a spark that should ignite the burner. If ignition does not occur the first time the red button is depressed, repeat depressing the red button until ignition does occur.

CAUTION

Do not grasp the black body of the electric spark generator when depressing the red button because a mild electric shock may be experienced.

8. After complete ignition has been established, it may be desirable to close the lid on the grill and allow it to pre-heat for a period of up to 10 minutes prior to the start of grilling or broiling.
9. At the end of use, turn off the valve at the quick disconnect, wait for flame to extinguish, then turn the knob on the regulator clock wise to full Off. The LP gas hose should then be disconnected from the quick disconnect fitting.

NOTE

The valve at the quick disconnect must be Off before the hose can be removed, also this valve must be off so gas in hose will be used completely before a disconnect is made.

10. Replace plastic cap both end of hose.
11. The grill should be allowed to cool so the castings are cool enough to touch before returning to compartment.
12. Replace cap on female quick disconnect.
13. Reinstall rubber tie-down.

OPTIONAL EQUIPMENT

AUXILIARY AIR COMPRESSOR

This unit provides a quick source of air so there is no need to wait for pressure to build up after starting engine. It can be used to operate air tools and accessories without starting the coach engine. It also serves as a standby unit in the rear case of a malfunction in the engine driven air compressor system.

The compressor and starting relay are located in the right curb side front compartment while the 12 volt switch to operate the relay is located on the lower dash panel.

OPERATION

The compressor operates from 120 volt ac power so the coach must be plugged into shore power or the generator must be running. Press dash switch On.

Refer to **Operating Manual** for additional information.

MAINTENANCE

No lubrication is required for life of the unit.

The air inlet filters should be inspected once or twice a year. The black plastic air inlet covers can be removed by turning counter-clockwise. This will reveal the felt filters. If there is evidence of dirt on filters and covers they may be washed in a solvent and air dried.

BATTERY HEATERS

120 volt ac battery heater pads provide faster engine starts during cold weather conditions by increasing the available cold cranking power.

NOTE

To avoid premature deterioration of the batteries, heaters should be used only when the temperature is below 32 degrees F.

The battery heater switch is located in the kitchen base cabinet.

PREMIUM SOUND SYSTEM

Sound system features compact disc player, graphic equalizer, and tuner cassette. Graphic equalizer features nine bands of equalization, three programmable memory presets, and three built in memory presets. Tuner cassette features direct access tuning, 30 channel preset memory, seek and manual tuning, Dolby "B" noise reduction, metal tape capability and loudness switch, includes four full range coaxial speakers and 114 watts of power. (See manufacturer's operation manual for additional information.)

SPARE PARTS KIT, ENGINE 3208

Option includes additional belts, filters, hoses, Racor element, oil, transmission fluid, and grease gun.

SPARE PARTS KIT, AIR SUSPENSION

1 ... 1349182 ... Rear Air Spring
1 ... 0871376 ... Height Valve Control
1 ... 0962183 ... Air Filter
1 ... 1349042 ... Front Air Spring

TIRE CHANGE KIT

Includes a 12 ton hydraulic jack, jack handle, torque multiplying lug wrench and handle.

EXTERIOR LIGHTING PACKAGE

This lighting package includes an additional porch light on the curb side in the rear and an additional porch light on the road side above the utility box. Also includes twin spotlights, and landing lights.

MUSICAL HORN CONTROLS, REMOTE

With this option, a remote horn panel is located on the co-pilot's kick panel. (See **Musical Horn** for operating instructions.)

TABLE, INFINITY

This option provides an infinity table in lieu of the standard living room table. Table is two tiered with wood tops. Top is smoked glass with vista lighting. Inside of table includes mirrored back and sides with provisions for bottle storage. Front of table includes two smoked glass doors.

The vista lights operate from a 12 volt DC source. The On/Off switch is located in the drape channel on the back of the table just below the top.

SEAT, PILOT CO-PILOT W/LUMBAR SUPPORT

Seats have an electrically controlled lumbar support. This allows individuals to adjust the seats lower back (lumbar) area, to fit their lower back contour.

GARBAGE DISPOSAL

The disposal is located under the sink bowl and requires 120 vac power via the generator or shoreline hook up. The switch controlling the disposal is on the bottom of the overhead cabinet. (See manufacturer's operation manual for further information.)

DRIVING LIGHTS

Replace standard fog lights. Will operate only when headlights are on high beam.

DUCTED ROOF AIR CONDITIONING

This system has remote thermostats. THere are no heat strips with ducted air conditioning.

SKYLIGHT

To open the skylight for fresh air or light, slide covers outward by applying pressure on the cover handles.

To Adjust Covers for Optimum Sliding Tension:

1. Remove caps over the screws which hold the skylight trim in place. Caps may be removed by lifting the edge with the tip of a small screw driver or knife blade.
2. Screws along straight section of frame may be loosened or tightened as required to obtain the desired sliding tension.

NOTE

Do not adjust the two screws on each end for slide tension purposes.

Occasional glass adjustment may be required to maintain weatherproof integrity. Follow adjustment instructions that are printed on the skylight glass to obtain proper sealing between glass and rubber gasket.

CAUTION

Improperly installed glass can lift while vehicle is in motion.

AWNINGS

For awning operation refer to **Zip Dee** owner's manual.

CAUTION

The patio awning is equipped with a manual lock at both ends of the awning. Before driving your coach, verify that both front and rear locks are properly engaged. Failure to lock both ends may allow the awning to unroll while in transit.

CAUTION

Be sure to raise patio awning high enough to clear the top of the entrance door.

ELECTRIC DRAPES

Operate on 120 VAC supplied from shoreline, generator or inverter. Drapes are installed in bedroom and living room. Bedroom drapes are controlled by switches on bedroom overhead control panel. Living room drapes are controlled by switches under the living room overhead cabinets.

TOILET, ELECTRIC OPERATED

Includes vitreous china toilet, ultra-low water use and 12 volt electric flush. (See manufacturer's operation manual for further information.)

WASHER AND DRYER

The Washer/Dryer combo is mounted on a slide out tray with an access panel on the shelf above washer/dryer. Shut off valves for hot and cold water are located behind the washer dryer. 120 vac power is supplied by shoreline hook up or generator. A ground fault interrupter circuit breaker controls power to washer dryer. (See manufacturer's operation manual for further information.)

KEYLESS ENTRY SYSTEM

A keypad is located adjacent to the entrance door. By entering a preset code the entrance door dead bolt lock is unlocked.

HEAT EXCHANGER, ENGINE FOR LPG HYDRONIC HEAT

Permits transfer of heat between engine coolant and left side convectors of Hydronic Heat System medium.

Allows left of coach to be heated with engine heat, while in transit, without burning LPG.

BAY HEAT

This option allows outside pass through storage compartments (not holding tank) to be heated for freeze protection by the LPG hydronic heating system. It contains 2-10,000 BTU fan forced power convectors that are activated by a thermostatically controlled switch at approximately 40 degrees F.

ELECTRIC IMMERSION HEAT, HYDRONIC SYSTEM

This is an accessory to the LPG Hydronic heat system. It's primary use is to provide freeze protection heat for the interior of the coach when it is stored in an enclosed area where LPG heat is not safe because of combustion gasses. It can also serve as a low requirement heat source. It is NOT intended to heat the coach in extreme cold conditions. In these conditions LPG must be the source of energy.

SAFETY & SECURITY SYSTEMS

FIRE EXTINGUISHER

A portable, multi-purpose dry chemical fire extinguisher is located behind the rear living room companion chair. A second fire extinguisher is located in an outside coach compartment. To use, release the clamp and remove the fire extinguisher from the bracket, pull safety pin from handle, squeeze handle and apply chemical under flame.

SMOKE DETECTOR

A smoke detector (now code mandated) is installed over the rear dinette seat.. A warning label is attached to the exterior of the smoke detector.

LP GAS LEAKAGE DETECTOR

The gas leakage detector, is located below the rear dinette seat. In the event of an LP leak, the unit sounds an alarm and closes the main LPG supply by deactivating the solenoid valve located in the high pressure gas line just before the regulator. See **LPG Leak Detector System** for additional information.

HEAT ALARM

Heat alarm sensors are located at the 120V distribution panel and in the refrigerator vent stack. A buzzer in the pilot's front overhead will sound if excessive heat is detected in either area.

BURGLAR ALARM

The security of your motor home and contents are assured by an intruder alarm system which protects windows and entry door. Each window is protected by a magnetic proximity switch which triggers an alarm if window is opened. The entry door uses a door jamb switch which operates when the door is opened. The system is armed and disarmed by a radio frequency (RF) key fab module.

A/T SWITCH

Anti-theft switch for the ignition circuits (A/T switch on lower dash) can be operated so that the unit cannot be started. This also serves as the coach master switch.

POWER CORDS & HOOK UP

Your coach is supplied with a permanently attached 50 amp power supply cord, in the utility compartment (road side rear), for hook up to an external power source.

In addition, a single 30A twist lock connection is supplied to provide two 30A 120 vac lines (from separate external circuits in conjunction with the 50A fixed cord and 50A/30A adapter). This will permit use of all motor home appliances without overloading the supply lines. The total cord complement is as follows:

50A male (1) fixed
50A female to 30A male (1)
30A female to 30A male (1)
30A female to 30A male extension (2)
30A female to 20A male adaptor (2)

Note that each cord has a ground pin which provides proper electrical system grounding. The ground pin is your personal protection from electrical shock hazards. **Do not use any adapter, cheater, or extension cord that will break the continuity of the grounding circuit. Never remove the grounding pin for convenience of being able to make a connection to a non-grounded receptacle!**

Never operate your coach with a "hot skin"! If you can feel even a slight "tingling" shock from touching the coach body while standing outside on the ground, immediately disconnect the electrical hookup until the trouble is located. This fault is usually caused by a break in the grounding circuit, which should be continuous from the coach skin or frame to the distribution panel board to the ground pin on the power supply cord, and from there to the park receptacle and earth ground.

SHORELINE OPERATION (COMMERCIAL POWER)

CAUTION

Your motor home has been wired in accordance with the National Electrical Code. All 120 volt ac wiring is two-wire service with ground; all 240 volt wiring is three-wire service with ground. For personal safety, check the polarity detector indicators on the power line monitors to be sure that lines are properly connected and grounded.

CAUTION

During thunderstorms lightening strikes may detrimentally impact the electrical system of your coach just as it would your home. To avoid potential catastrophic damage to sensitive electronic devices in your coach, disconnect shore power and cable television service prior to electrical storms reaching maximum intensity.

CAUTION

If the ground pin is used as a starting point for insertion of the 50 amp plug, the possibility exists that an over voltage condition will occur on the 120 volt lines, ie, the neutral pin of the plug will not make contact at the same time the two 120 volt pins and thus, without the neutral pin making contact as a voltage reference 240 volts may be presented to the 120 volt appliances.

Therefore, to reduce the possibility of over voltage, switch off the 50 amp main breakers located in the 120 volt ac load center prior to insertion and removal of the 50 amp plug. In addition, insert and remove the 50 amp plug straight into the receptacle instead of tilting the plug. (See Power Cord Hookup Illustration in last section of manual.)

For purposes of safety, observe all precautions when making SHORELINE connections. Poor grounding or incorrectly-wired receptacles can cause personal harm as well as equipment damage or fire hazards. Check reverse polarity indicator in shoreline/utility compartment to verify correct polarity and grounding of hookup.

30 AMP ADDITIONAL SERVICE HOOKUP

First, connect the shoreline to the coach (rotate plug clockwise to assure firm connections). The coach receptacle is located in the left side utility compartment. Connect the other end of the shoreline to the power source. Poor grounding or incorrectly-wired receptacles can cause personal harm as well as equipment damage or fire hazards. Check reverse polarity indicator in shoreline/utility compartment to verify correct polarity and grounding of hookup.

ELECTRICAL RATINGS FOR MOTOR HOME APPLIANCES

In many instances, the shoreline hookups will not be rated to operate all electrical appliances in your coach. Check with facility personnel to determine the maximum current capability of the hookup. Sometimes, only one air conditioner may be operated.

ITEM	CURRENT RATING (AMPERES)
Air Conditioners 13,500 BTU	(Run) 15.0-18.0
Water Heater	10.0
Television Receivers (Color)	1.0
Battery Charger (depends on battery condition/load)	0 to 14.0
Engine Block Heater	10.0
Electric Heaters	
Interior Heater	12.5
*Battery Heaters	1.2
Heat Tapes	3 watts/ft
Microwave Oven	15.0
Food Center	4.0
Refrigerator	2.7
Ice Maker	Start 15, Run 2.5
Instant Hot Water	6.5

*Optional Item

SHORELINE OPERATION ... TROUBLESHOOTING

Your coach is designed and tested to make sure the 120 volt ac Neutral (white) wire and the Ground (bare copper or green) are not tied together (no continuity). This will prevent any danger of a "hot skin" if the source of power has reversed polarity (red LED lit) as indicated on the polarity indicator panels located on the right hand overhead aux. panel and in the utility compartment.

Problem
Probable Cause
Corrective Action

Yellow LEDs lit ... Normal (desired)

Red LEDs lit
Reversed Polarity at power source.
Convince park management to correct or change lot assignment.

Neither Red or Yellow LED lights
No ground connection with park service
Use jumper lead from ground pin on shore cord to service box.

Power source (park) circuit breaker trips.
Reversed polarity in park and coach neutral and ground tied together.
Use on-board generator until qualified electrician can correct coach problem. (Generator polarity is correct).

Yellow LED's lit plus Red LED's glow when additional load is turned on (Air Conditioner or Water Heater).
Poor ground connection at park (floating ground).
Make sure shoreline plug is fully engaged. Twist locked (clockwise) at coach.

SAFELINE ALARM

See **Left Hand Overhead** dash for function.

TRANSMISSION

TRANSMISSION SPECIFICATIONS

TRANSMISSION TYPE

ZF Automatic (5 HP 500 Ecomat with integral input retarder)

NO. SPEEDS

5 Forward - 1 Reverse

RATIOS

FIRST	3.43
SECOND	2.01
THIRD	1.42
FOURTH	DIRECT
FIFTH	0.83
REVERSE	4.84

LUBRICANT CAPACITY

32 QUARTS (Including Oil Cooler)

BELLHOUSE SIZE

SAE #1 W/Adaptation to SAE #2

END YOKE

1710 SPICER

TRANSMISSION CALIBRATION

2800 RPM

DIPSTICK LOCATION

The transmission dipstick is located inside the left rear engine side access door. It is the "T" handle closest to the engine.

Refer to ZF - Ecomat operator's manual for all other operating and maintenance information.

TRANSMISSION OPERATION

The ZF Ecomat transmission provides five forward ranges, one reverse gear, and one neutral gear. Gear range selection is determined through the transmission shift selector located on the SHIFTER PANEL.

The selector must be in N (neutral) position to start the engine. If the engine can start in any other position, the neutral interlock relay is defective and should be replaced as soon as possible. Use D position for all normal driving conditions so that the coach begins moving in first gear and upshifts automatically into 2nd, 3rd, 4th and 5th gear. As the coach slows, the transmission automatically downshifts to the correct gear. Use 2 or position 3 when road load or traffic conditions make it desirable to restrict automatic shifting to a higher range. Use 1 or 2 when pulling through mud and snow or if required, driving up steep grades. The vehicle must be completely stopped before shifting into reverse.

ACCELERATOR CONTROL

Foot pressure on the accelerator pedal influences the automatic upshifting or downshifting within each driving range. When the pedal is fully depressed against the floor pedal stop, the transmission automatically upshifts near the recommended governed speed of the engine. A partially depressed position of the pedal causes the upshifts to occur sooner at a lower engine speed. Shift timing is accomplished by using an electronic automatic shift control unit in conjunction with pressure modulation linkage. This throttle-modulation method provides the accurate shift spacing and control necessary for maximum performance.

TRANSMISSION OIL TEMPERATURE

Extended operation at low vehicle speeds, with the engine at full throttle, can cause excessively high temperatures in the transmission. These temperatures may tend to overheat the engine cooling system as well as cause possible damage to the transmission. If excessive temperature (215 degrees F.) is indicated by the coolant temperature gauge, stop the vehicle and determine the cause. If the cooling system appears to be functioning properly, the transmission is probably overheated, shift to N and apply parking brake. Check transmission oil level. If OK, while in N, accelerate the engine to 1,200 to 1,500 RPM.

This should reduce the transmission oil sump temperature to normal operating range within a short time. If high temperature persists, stop the engine and have the overheating condition investigated by service personnel.

For additional information, see the **ZF Operator's Manual**.

TRANSMISSION MAINTENANCE

Transmission Oil Specification	Dexron II
Change Capacity	12-16 QUARTS
Oil/Filter Change Interval	Initial 5,000 miles, 12,000-18,000 afterwards
Filter Change Kit	ZF P/N 4139-298-936

RETARDER OPERATION

USE OF TRANSMISSION RETARDER

The retarder is a hydrodynamic brake and application is recommended on lengthy down grades (maintain constant coach speed) and when slowing down from high speeds. The retarder operation will increase service brake life and in emergency conditions assist in bringing coach safely to a stop.

The retarder is activated by the Retarder Hand Control lever by the driver's left leg and/or by the brake pedal when the main Retarder switch is in the ON position. This switch is located on the shifter panel.

A safety circuit inside the transmission ECU makes it necessary to meet three (3) requirements for the retarder to activate.

1. Shift selector must be in a forward gear range.
2. Coach must be traveling above 3 mph
3. Operator must have no pressure on accelerator pedal.

If one of these conditions is not met, the retarder will not activate.

To activate the retarder using the hand lever, make sure the above conditions are met and push the hand lever forward. To deactivate, pull the hand lever to it's original condition.

To activate the retarder using the brake pedal, make sure the above conditions are met and the Retarder Switch is in the ON position. The first several degrees of brake pedal travel are only retarder activation. This means the driver presses the brake pedal, the retarder will activate prior to utilizing the service brakes. To deactivate, remove foot from brake pedal.

IMPORTANT

If the accelerator is accidentally pressed when the retarder is engaged, the retarder automatically disengages. Only when the accelerator has been released will the retarder come back into operation.

CAUTION

Since retarder operation normally raises the temperature of the oil, it is possible that the permissible oil temperature will be exceeded. Check transmission oil temperature using dash gauge. The green section is normal operating temperature. The yellow section is normal retarder operation range. If excessive oil temperature is indicated (red section) the vehicle must be slowed with the service brake until downshift is made into a lower gear or the retarder must be switched off completely.

RETARDER SWITCH

When in ON position, the transmission retarder will operate from both hand lever and brake pedal activation. When in OFF position, the transmission retarder will operate only from hand lever activation. The adjacent indicator light activates when the retarder switch is ON.

VIDEO & AUDIO

STEREO TELEVISION RECEIVER

Installed in the front overhead. Operates from a 120 volt source (inverter, shoreline or generator). Will not operate while in transit. Refer to owner's manual supplied with set for operating instructions.

TELEVISION RECEIVER

Installed in the bedroom. Operates from a 120 volt source (inverter, shoreline or generator). Refer to owner's manual supplied with set for operating instructions.

AUTOMOTIVE STEREO

Installed in the lower right dash. Is comprised of a tuner/cassette with two (2) 6 x 9 inch coaxial speakers, and two (2) 4 x 10 inch coaxial speakers. The tuner/cassette has auto reverse, electronic tuning sensor, Dolby noise reduction and metal tape capabilities.

The speakers are located two (2) in the living room and two (2) in the front overhead. See instruction manual for operating instructions.

STEREO SYSTEM

AM/FM tuner cassette with electronic tuning and auto reverse located in the bedroom night table with two (2) 6 1/2 inch coaxial speakers.

TV ANTENNA & ROTATOR SYSTEM

The control components of the radome-type TV roof antenna, are a hand-held rotator, switcher for the antenna or cable inputs and a switch for raising and lowering the antenna.

The antenna rotators, located in the co-pilot's front overhead compartment, and in bedroom control the position of the TV antenna within the radome. The three-position momentary switch (center OFF) provides right/left antenna rotation.

The A-B switch, also located in the co-pilot's front overhead compartment, switches antenna (A) or cable (B) input.

The switches for raising or lowering the antenna are located in the Pilot's Area Overhead Dash, and in bedroom.

The radome includes an amplifier and rotator mechanism. The remote power supply operates from 12 volts dc. Low-loss coaxial cable and three wire rotator control cable interconnect the antenna and power supply.

Note that the system is protected by a fuse in the front overhead load center. In the event that the TV set exhibits problems relating to low antenna input (ghosts, etc.) check this fuse before servicing the TV set.

With the TV on and a station tuned in, rotate the antenna by pressing the rocker switch located on the control unit. Press the right side of the switch to run the antenna clockwise; press the left side to turn the antenna counter-clockwise. Although the actual antenna movement is not visible, the indicator arrow on the control unit lights and shows the direction of movement. When the antenna has made one full turn (360 degrees), the End of Rotation light comes on. Observe the picture while rotating the antenna, first in one direction, then the other, to obtain best picture quality.

MUSICAL HORN

The lower dash panel has three different switches for use with the musical horn. The POWER switch provides power to the horn. When this switch is turned on, the selection display will light up and indicate selection number 0.

The SONG select switch controls the scanning of the song desired. When this switch is pressed in the up position, the selection display will begin to increment up, slowly at first and then increase in speed. When this switch is pressed in the down position, the selection display will increment down.

The PLAY switch, when depressed, initiates the selection displayed on the selection display. If this switch is depressed while a song is playing, the horn will automatically reset and repeat the song.

The volume control operation is controlled by operating the PLAY switch and the SONG select switch simultaneously. To increase volume, depress the PLAY switch and the SONG select switch in the UP position at the same time. To decrease volume, depress the PLAY switch and the SONG select switch in the DOWN position at the same time. The volume level will be displayed on the selection display in levels from L1 (lowest) to L5 (highest).

CLOSED CIRCUIT TV SYSTEM

Includes a monitor which enables the operator to view behind the coach for purposes of backing, or passing other vehicles on the highway. See RH lower auxiliary panel for controls.

The rear-facing CCTV camera transmits images directly to the monitor via coach cabling.

Note that the system requires a brief warmup period before achieving full resolution. CCTV camera controls are preset and the standard lens supplied with the unit is designed to focus from about two feet to infinity.

CB RADIO

CB radio is in compartment (floor) at driver's right leg. Refer to **CB Operator's Manual** for additional information.

DOOR BELL

The door bell is located forward of the curio cabinet, just above the floor.

PHONE OUTLETS, LAND LINE

Phone outlets are located in the bedroom and at rear of sofa. Connection is in utility box.

WASTE SYSTEM

Separate holding tanks for gray water and body waste are located in compartments directly in front of the drive wheels. In the standard walk through bath coach, the gray water holding tank is the receiver for the water from the bathroom lavatory and the shower; the waste holding tank stores toilet wastes and waste water from the kitchen sink. Each holding tank has a separate drain valve, dumping gray water and wastes through a common single discharge connection. Separate vents from each holding tank extend through the roof of the coach.

These holding tanks have a triangulated configuration so the major portion of the body waste holding tank is on the right (curb) side of the coach while the major portion of the gray holding tank is on the left (road) side.

CAPACITIES:	Body Waste	90 Gal.
	Gray	94 Gal.

DRAINING THE HOLDING TANKS

The waste holding tank is drained first, then the gray water tank. Drain the holding tanks as follows:

NOTE

It is advisable to drive your unit for a short distance to agitate the contents of the holding tank before dumping.

1. Check that both drain valves are in a closed position before removing drain cap.
2. Remove the safety cap from the single discharge connection by turning ring in a counter-clockwise direction and connect the 3-inch sewer hose to the end of the valve. Tighten securely, in a clockwise direction. The sewer hose is stored in a tube under the coach. Place the discharge end of the hose into the sewer connection and check that all connections are secure to prevent accidental spillage.
3. Move the waste tank toggle switch on the power dump valve control panel (located in the roadside holding tank compartment) from the closed to the waste position. Then dump the gray tank by moving the toggle switch from the closed to the gray position.

NOTE

The air system must be pressurized to use the power dump valve system. A manual operating tool is provided in the case of low or no air pressure.

4. After contents are emptied, flush out the waste holding tank to dislodge remaining solids.
   After dumping both tanks, move the toggle switches to the closed position.

Note

To clean the holding tank, add a detergent solution into the tank after it is emptied. The agitating action from vehicle movement will clean the tank.

5. Disconnect and wash out drain hose, replace hose and replace safety cap securely.

HOLDING TANK DRAIN VALVE MAINTENANCE

Periodically the drain valve may become difficult to open. It is recommended that the (2) two screws in top of mechanism be removed and pull paddle out. After cleaning paddle, a coat of vaseline should be added to both surfaces and valve reassembled.

WASTE TANK LEVEL INDICATORS

Each holding tank has a level detector which provides an electrical input to the Systems Monitor panel in the galley area. Activate the display to read the level of liquid remaining in each tank by pressing the appropriate push button switch.

HEATED HOLDING TANKS

Both holding tanks on the coach are equipped with 120 VAC electric heating pads with thermostats to prevent freezing down to 0 degrees F.

WINTERIZING HOLDING TANKS

Drain the holding tanks and add RV antifreeze (several quarts) to each tank through the toilet (into the sewage tank), and through the tub/shower drain (gray water tank).

WINTERIZING FIXTURE TRAPS

In addition to the above, pour a pint of RV antifreeze into the kitchen sink and bathroom lavatory drains.

TOILET

The toilet operates from the fresh water supply and flushes wastes directly into the sewage holding tank. After use, depress bowl drain pedal until water swirls, draining waste into tank, then release pedal. A water saver feature, consisting of a manually operated spray hose, is located at side of bow. To raise the level of water in the bowl, lift up on the foot pedal.

NOTE

The water pump must be on or coach connected to city water to operate toilet.

WINTERIZING TOILET

See toilet user manual in owner's kit.

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AUTHORIZED SERVICE CENTERS

Blue Bird Wanderlodge
No. 1 Wanderlodge Way
Fort Valley, GA 31030
1-800-992-6337 (Outside GA)
Phone: (912) 825-2021
Service Manager - Kevin Rodgers

Buddy Gregg Motor Homes
11730 Snyder Road
P.O. Box 23408
Knoxville, TN 37933
Phone: (615) 675-1986 or 1-800-421-0031
Fax: (615) 675-2077
Service Manger - Jim Gregg

Buddy Gregg Motor Homes
940 Crevasse Street
Lakeland, FL 33809
Phone: (813) 859-5656
Service - Troy Moody

Dallas Motor Coach
1706 North I-35 East
Lewisville, TX 75067
Phone: (214) 221-4959
Service Manager - Jim Christian

Elkhorn Construction, Inc.
Highway 460 & 23
Pikeville, KY 41501
Phone: (606) 432-2897
Service Manager - Tom Epling

Florida Motor Coach, Inc.
5808 East Hillsborough Avenue
Tampa, FL 33610
Phone: (813) 628-4747
Fax: (813) 628-0677
Service Manager - Melvin Gladstone

Holland Motor Homes
670 East 16th Street
Holland, MI 49423
Phone: (616) 396-1461 or 1-800-221-7197
Fax: (616) 396-1391
Service Manager - Scott Vroon

Holiday On Wheels
Robin Hill Corporate Park
Route 22
Patterson, NY 12563
Phone: (914) 878-9400
Fax: (914) 878-3647
Service Manager - Chris Grindley

M.A. Brightbill
2701 East Cumberland Street
Lebanon, PA 17042
Phone: (717) 272-7691
FAX: (717) 272-0970
Service Manager - Fred Warner

Miller's RV
12912 Florida Boulevard
Baton Rouge, LA 70815
Phone: (504) 275-2940
Service Manager - Doug Miller

Minuteman RV
1021 Memorial Drive
Chicopee, MA 01020
Phone: (413) 593-5591
Service Manager - Jack Miller

Northwest Cortez
16616 Pacific Highway, South
Seattle, WA 89188
Phone: (206) 244-1140
Service Manager - Jim Fisher

Royal Palm Motor Coach, Inc.
6601 North Federal Highway
Ft. Lauderdale, FL 33308
Phone: (305) 491-6330
Fax: (305) 491-6479
Service Manager - Kenny Rodgers

Sunset Motors
10900 Kalama River Avenue
Fountain Valley, CA 92708
Phone: (714) 968-2264
Fax: (714) 968-4497
Service Manager - David Garrison

Sunet Motors
3362 El Camino Real
Santa Clara, CA 95051
Phone: (408) 243-2463
General Service Manager - Frank Reis

Tampa's RV Repairs
515 Rosslyn Road
Houston, TX 77018
Phone: (713) 688-6557
(713) 688-3259
Service Manager - Harry Knight