

## SECTION I

### INTRODUCTION

#### CONTENTS

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

The remaining sections of this manual, Sections II through XI, describe in detail the operation and use of the individual items and systems which comprise your motorhome. The following paragraphs summarize the contents of these sections:

**SECTION II OPERATION** — Covers driver's instrumentation, operating controls, gauges and indicators. General data on operation of coach vehicular systems are also covered in this section.

**SECTION III LIVING AREA FACILITIES** — Covers operation of heating and air conditioning systems, use of accessories and appliances and related general coach facilities data.

**SECTION IV ELECTRICAL SYSTEMS** — This section describes operation of coach electrical systems, ac/dc operation and generator switching are also covered.

**SECTION V WATER DISTRIBUTION SYSTEMS** — Covers internal supply and distribution, plumbing, city water hookups, tank fill and sanitizing, holding tank dumping and operation of hot water supply system.

**SECTION VI LPG SYSTEM** — This section describes LPG internal supply and distribution, tank filling procedures, system component locations, and precautions to observe regarding LPG handling.

**SECTION VII AIR BRAKE SYSTEMS** — This section covers operation of the service brakes and spring brake systems, fail/safe features and general brakes system operation.

#### SECTION VIII OWNER MAINTENANCE

**DATA** — Includes information on maintenance procedures which may be within the scope of the owner. Coverage is provided for preventive maintenance schedules, specifications and system capacities, cold weather operation, storage and winterizing. Interior/exterior appearance care and emergency maintenance procedures are also described.

**SECTION IX GENERAL INFORMATION** — A list of major components, including model numbers, name and address of manufacturer.

**SECTION X DIAGRAMS** — Contains wiring, schematic, piping and general-purpose diagrams to assist in troubleshooting and understanding how these systems function.

**SECTION XI OPTIONAL EQUIPMENT** — This section provides you with information on optional equipment and features used in your motorhome.

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

Your satisfaction is our assurance that we are fulfilling our responsibilities to our owners.



## 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; let him know your basic itinerary.
- Notify police.

### CHECKOUT YOUR COACH -- OUTSIDE:

- Disconnect and stow:
  - a. Electrical hook-up cord.
  - b. Sewer hose hook-up (flush out).
  - c. Water hook-up hose.
- Check all exterior lights for damage.
- Check wheel lug nuts for tightness.
- Check tires for correct pressure.

- 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 listed in Section VIII, 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.

### CHECKOUT YOUR COACH -- INSIDE:

- Turn off water pump switches.
- Close windows and vents.
- Check that cabinet doors and drawers are closed.
- Check that refrigerator door is fastened.
- Check that no heavy items are stored in overhead cabinets.
- 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 step is in closed position.
- Secure and lock the entrance door.
- Adjust exterior and interior mirrors.

### CHECK YOUR AUTOMOTIVE SYSTEMS:

- Check that fluid levels are normal (oil, power steering, engine coolant, battery electrolyte, windshield washers, transmission, 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.



- Start engine and check gauges for signs of trouble.
- Check operation of foot brakes, emergency brake. (See that brake pressure builds up and steadies at about 90 to 105 psi.)
- Check tire pressure.

#### AND, BEFORE DRIVING AWAY:

- Check operation of appliances and special equipment.
- Check that fire extinguisher is fully charged.
- Check operation of interior and exterior lighting.
- Start generator and check 120v ac 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 fore-aft 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 an accident.
- 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 note of these items to prevent duplicating the same errors.

- Spare water filter element.
- 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 chemical and toilet articles.
- Spare belts for engine-operated equipment.
- Spare parts for generator: suggested spares include sparkplugs, oil filter, fuel pump, air filter, solenoid. Four quarts of approved generator oil.
- A professional-type double-action tire pressure gauge.
- Under the heading of "Emergency Equipment", it is advisable to consider outfitting your coach with these items:
  - a. First-aid kit
  - b. Emergency highway flares
  - c. Flashlight or lantern (with extra batteries)
  - d. Tool kit
  - e. Replacement lamp assortment
  - f. Replacement fuse assortment
  - g. A 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! Be a "Good Buddy" — don't hesitate to use your CB if you see someone else in need of assistance. Remember that you will need a Canadian license to operate your CB radio during your travels in Canada.

#### 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 full-length side awning will



be especially useful in lowering inside temperature. Roof-mounted air conditioners 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 wall-mounted voltmeter when in doubt.

### COLD WEATHER OPERATION

LPG appliances, furnace, and gas refrigerator are designed with sealed combustion areas. This is for your protection to prevent danger from carbon monoxide or depletion of oxygen. Your motorhome is equipped with Lifeguard One, a highly accurate and sensitive propane gas detector. Heed alarm indications!

If frost or condensation accumulate 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 oven or burners.

### 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 coverages for personal liability, theft, collision, overturn, property damage, 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 insurance 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 coverages. The principal differences between them are the "fringe benefits", received in the form of informational travelogs 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 a 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. The coach construction provides access to all gas line connections. Apply a soapy water solution to the outside of gas piping connections to find gas leakage (bubbles). Usually, tightening of connections will close leaks. (Be sure to first shut off the gas supply!) 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, such as does water. It will sometimes pocket in a low area. LP gas can usually be detected by an identifiable odor characteristic to onions or 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 during refueling to prevent accidental ignition of gasoline fumes by appliance pilot lights.

Do not exceed the rated liquid capacity of the LPG tank. Overfilling may cause LPG to flow through the regulator causing it to freeze and create excessive gas line pressure. It is a good practice to watch while the tank is being filled to insure that this safety precaution will not be violated.

### 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!

### BUILT-IN POWER CORD ADAPTER

Approved power supply cords are supplied with the coach for hookup to external power sources. One cord is intended for hookup to 110-volt ac 30 ampere power, and a 20-ampere adapter is also supplied with this cord. A second cord is supplied for hookup to 220 volts ac, single-phase, 50 ampere power. Note that each cord has a ground pin which provide 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 third (ground) pin on the power supply cord, and from there to the park receptacle and earth ground. Your motorhome is equipped with dual polarity-protector alarm panels, located on the galley wall. These panels are for your protection in ensuring against improper grounding or reversed hookups, both of which will be indicated by an alarm condition. Heed alarm signals.

A power cord adapter is also supplied which will allow connection of two 30-ampere 120-volt lines (from separate external circuits) to the shore-line plug in the rear of your coach. This will allow use of all motorhome appliances without overload of the supply lines.

### 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.



## ENGINE EXHAUST GAS(CARBON MONOXIDE)

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. If you must drive under these conditions, drive **ONLY** with **ALL** windows fully **OPEN**!

The best protection against carbon monoxide entry into the vehicle body is a 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 extinguisher 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 regularly.
- Check brake operation in a safe area — not

- while traveling on a busy highway!
- Use seat belts!

## VEHICLE LOADING

### WEIGHT DISTRIBUTION AND LOAD RATING

The Federal Certification Label, located beneath the hood ledge, and to the rear, describes the maximum weight-carrying capacities of your motorhome and for each axle, respectively abbreviated by "GVWR" and "GAWR". A typical identification plate is shown in figure 1-1.



Figure 1-1. Identification Plate

The Gross Vehicle Weight Rating (GVWR) is the maximum motorhome 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).

A typical motorhome rating might be as follows:

GVWR . . . . . 31,700 lbs  
GAWR (Front) . . . 12,000 lbs  
GAWR (Rear) . . . 18,500 lbs

Generally, a 31-foot unit will weigh about 24,000 pounds; a 33-foot unit will weigh about 25,000 pounds; and a 35-foot unit will weight about 26,500 pounds. If optional equipment is installed, add the weight of the these items to determine the total weight.

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 exceed the difference in load capacity.



When loading your motorhome, store heavy gear first, keeping it on or as close to the floor as possible. Heavy items should be stored centrally so as to distribute the weight more or less 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.

To find the actual weight, with the motorhome fully loaded, drive to a scale and read the weight on the front and on the 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.

Additional data plates located underneath the hood table provide information useful for identifying your coach if you are planning on ordering parts. A typical identification plate, figure 1-2, provides the following information:

1. Body Serial Number
2. Chassis Serial Number
3. Model, Year
4. Model Number of Axle (if axle parts are to be ordered)

FURNISH INFORMATION BELOW WHEN ORDERING AXLE PARTS	
CHASSIS SERIAL	ENGINE SERIAL
FRONT AXLE	
BRAKE LINING KIT NO.	
REAR AXLE	
BRAKE LINING KIT NO.	
RATIO	
CHASSIS SERVICE NO.	

BLUE BIRD BODY CO.		
BODY NO.	CAP.	MODEL YR.
FORT VALLEY, GEORGIA		
BRANTFORD, ONT. - MT. PLEASANT, IOWA - GUATEMALA, C.A. - BUENA VISTA, VA.		
FACTORY SERVICE NUMBER 128746		

Figure 1-2. Typical Identification Plate

## 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. The careful attention you give your vehicle, as far as maintenance and repairs are concerned, will also contribute to fuel economy.

## ENGINE OPERATING HINTS

It is recommended that you use Number 2 diesel fuel for your diesel engine. In the event that emergency assistance is required, contact Caterpillar Tractor Company, Engine Division, Peoria, Illinois, via this emergency number:

(800) 447-4986

[In Illinois, call: (800) 322-2806.]

## "JACKRABBIT" STARTS

Fuel can be conserved — and engine and tire life prolonged — by avoiding unnecessarily rapid acceleration away from lights and stop signs.

## STOP-AND-START DRIVING

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

## EXCESSIVE IDLING

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 on.



## LUBRICATION AND MAINTENANCE

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

### AIR CLEANER

The mixture of fuel and air which powers the engine is taken into the system through the air cleaner. Replace the air cleaner at required intervals to maintain peak engine efficiency.

### EXCESS WEIGHT

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.

### TIRE INFLATION

Under-inflation causes needless tire wear and promotes excess fuel consumption. Check tire pressures on a regular basis. (Michelin recommends that front tires be inflated to 105 pounds; rear tires should be inflated to 75 pounds.)

## TRAVELING IN YOUR MOTORHOME

### OVERNIGHT STOPS

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 motorhome 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 in-

stalled 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).

### EXTENDED STAYS

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 motorhome level. To be sure of this, check the attitude (level) with a small bubble level set on the refrigerator freezer shelf, or on the work counter. If corrections are necessary, level the coach from side to side first. This can be done most easily by driving the coach up a small ramp consisting of 2" x 6" boards, about 4 feet long, tapered at both ends. Do not place tires in a hole to level the coach!

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!

Attach sewage and waste hookup into the disposal facility.

### WINTER TRAVELING

Certain precautions should be taken when traveling in your motorhome 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 120v ac is unavailable.





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

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.