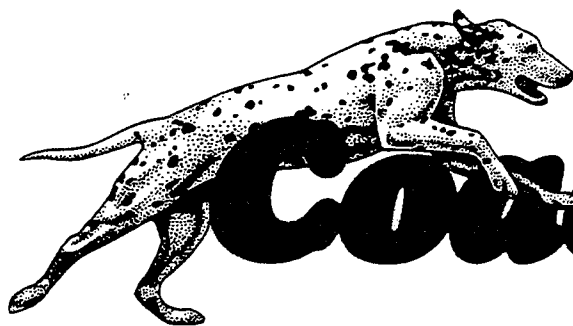


1993 - 1996



OWNER'S  
**CAMPING TRAILER**  
MANUAL

Welcome to Coachmen's growing family of happy RV owners. Hours of relaxation, adventure and enjoyment await you in your new Coachmen unit. Thousands of Coachmen RV owners have been enjoying their units for many years.

This Owner's Manual has been prepared to help you and your family enjoy your new Coachmen RV to its fullest by providing basic instructions for the operation and maintenance of its appliances, accessories and RV systems. Please read it carefully and follow the instructions. Also read and follow the instructions contained in the chassis, appliance and accessory manufacturers' instruction booklets provided as part of the "Coachmen Information Packet."

If you have any questions regarding operation, maintenance or service, please contact your Coachmen dealer so he can assist you. Your satisfaction is of the utmost importance to your dealer and to Coachmen.

Operation and maintenance instructions regarding appliances in this manual were obtained from the manufacturer's booklets and are used with the permission of those various manufacturers. Coachmen Industries reserves the right to present edited portions of these materials.

Coachmen Industries, Inc. works year round to improve its product. As a result, all specifications, equipment and prices quoted are subject to change without notice or obligation to the consumer.

Coachmen offers a wide variety of recreational vehicle models and choices of standard and optional equipment; therefore, certain descriptions in this manual may not apply to your unit. Ask your authorized dealer, or see the current brochure for information on the availability of standard or optional equipment.

Thank you for selecting our product. The entire Coachmen Industries family strives to merit your confidence.

## JOIN THE INTERNATIONAL COACHMEN CARAVAN

The International Coachmen Caravan is your owners' club. It is designed to help you get the most pleasure from owning a Coachmen recreational vehicle. With your membership you'll receive:

**MEMBERSHIP PACKAGE:** The first benefit a member receives is a complete Caravan Identification Package. It includes a membership card, Coachmen Caravan decals and unit numbers. These are all important to identify you as a full-fledged Caravanner eligible for all other Caravan benefits.

**PERSONALIZED TRIP ROUTING SERVICE:** We'll tell you the best way to go. Let us plan the itinerary that leads to your fun and traveling pleasure.

**MAGAZINE DISCOUNTS:** Save on a variety of America's popular subscriptions. The magazines about camping, traveling and the great outdoor world are especially right for you and your lifestyle - and so are the savings!

**CARAVAN TRIPS:** Hit the Caravan trail. It's the high road to adventure all year long. Interesting places and events are a big benefit of Caravan membership. There's so much to see and do when you're a member of the Caravan. The professional Caravan staff is constantly striving to develop outstanding tours and events. Traveling to special places with a Caravan of friends is a memorable experience that families can enjoy together.

**CARAVAN CAPERS:** Catch the news that features you. Capers is the quarterly magazine that brings you news about Caravan members and chapters across the continent, information about forthcoming trips and

rallies, and a variety of timely articles about the wonderful world of Coachmen Caravan. Capers is the special edition that's right for you.

**PETE'S MARKET:** Pete's Market is the Caravanner's mail-order store. And it's stocked with a vast array of distinctive items to make your RV adventures more fun. Special decals, patches, clothing, accessories, jewelry and some featuring Pete, the Dalmatian, our symbol - all reasonably priced with discounts for Caravan members.

**DISCOUNT FILM PROCESSING:** Capture those beautiful memories on film. And see the sights again when you take lots of pictures of your Caravan trips and other RV travels. Mail in your film to Caravan's special discount film processing center.

**CAMPGROUND DISCOUNT PROGRAM:** We have Campgrounds all over the U.S. and Canada that will give active Caravan members a camping discount. All you need to do is present your Caravan Membership Card at the check-in counter of those Campgrounds listed in the Campground Directory. Staying at about 10 campgrounds listed will make up for the cost of your yearly dues.

continued on back

## SUBSEQUENT OWNER INFORMATION

If you are the second or subsequent owner of this recreational vehicle, it is important that you notify Coachmen RV of your name, address, date of purchase and the Serial Number of your RV. This information is vital for Coachmen RV to maintain up-to-date records of current ownership. You also may be entitled to the remainder, if any, of the warranty coverage. See the warranty explanation in the WARRANTY section of this manual. Complete the form below, clip it, and mail it to Coachmen RV Company.

Date of Purchase \_\_\_\_\_ RV Serial No. \_\_\_\_\_

Name of Former Owner \_\_\_\_\_

Your Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Phone No. \_\_\_\_\_ / \_\_\_\_\_

## INTERNATIONAL COACHMEN CARAVAN MEMBERSHIP APPLICATION

Name \_\_\_\_\_ Spouse's Name \_\_\_\_\_

Occupation \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone (\_\_\_\_) \_\_\_\_\_ Ham Call Letters \_\_\_\_\_

Previous Caravan Member? ☐ Yes ☐ No

International No. \_\_\_\_\_ Expires \_\_\_\_\_

Type of Unit \_\_\_\_\_ Length of Unit \_\_\_\_\_

Children's Name and Date of Birth

1. \_\_\_\_\_ 3. \_\_\_\_\_

2. \_\_\_\_\_ 5. \_\_\_\_\_

4. \_\_\_\_\_

Referred by \_\_\_\_\_

☐ 1 Year \$18.00

☐ 2 Years \$30.00

☐ 3 Years \$43.00

☐ Bill Me

**CAMPGROUND MANUAL DISCOUNTS:** Take the scenic route! It's fun and it's easy-when you have your guidebook, available at a special price, for RV campgrounds.

**LOCAL, STATE AND DISTRICT ACTIVITIES:** Enjoy get-togethers and outings with other Caravanners throughout the year. In addition to International Caravan trips and rallies, you can enjoy your local, state and district Caravan Chapter activities too! There's always something exciting to plan and attend.

**ANNUAL INTERNATIONAL CARAVAN RALLY:** Come and share your good times with fellow Coachmen travelers.

**KEY RETURN:** If you loose your key ring identified with a special key tag number and the keys are found and dropped in a mail box, they will be returned to you through your Caravan office.

**MEMBERSHIP DRIVE AWARDS:** There is an excellent awards program with many awards available for bringing your friends into the International Coachmen Caravan as members. You can receive a lifetime membership, rally and trip discounts. Details and awards break down will be in your membership packet.

**ICC MASTER CARD:** As you support the Caravan, you help yourself. Caravan MasterCard special benefits include; No annual fee, Low 16% A.P.R., 25-day grace period on purchases, Automatic common-carrier

travel insurance of \$100,000 at no additional cost, Access to more than 23,000 CIRRUS network automated teller machines in more than 3,000 cities across the U.S. and Canada - fast cash - 24 hours a day - every day-added recognition for the Caravan whenever your card is used.

**VISA OR MASTER CARD ACCEPTED:** Membership Fees, Pete's Market, International Rally Fees, Coachmen Caravan Trip Fees.

**EMERGENCY ROAD TOW SERVICE:** You have available at a very low price an emergency Road program that covers not only your RV, but your tow vehicle or vehicle being towed.



To join the Caravan, complete, clip and mail the Membership Application, to the International Coachmen Caravan, P.O. Box 30, Middlebury, IN. 46540.

---

PLACE  
STAMP  
HERE



RECREATIONAL VEHICLE CO.  
P. O. BOX 1000  
MIDDLEBURY, INDIANA 46540

**\*SUBSEQUENT OWNER**

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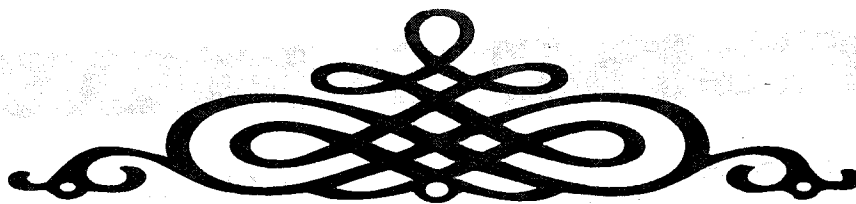
PLACE  
STAMP  
HERE

INTERNATIONAL COACHMEN CARAVAN  
P. O. BOX 30  
MIDDLEBURY, INDIANA 46540

**\*NEW MEMBERSHIP**

# Table of Contents

<b>APPLIANCES &amp; ACCESSORIES</b> .....	21	<b>HOOK-UP</b> .....	12
Range.....	21	<b>INSURANCE</b> .....	9
Ice Box.....	21	<b>LEVELING</b> .....	14
Refrigerator.....	21	<b>LP GAS SYSTEM</b> .....	19
Furnace .....	22	Climate Differences.....	20
<b>APPLIANCE IDENTIFICATION FORM</b> .....	30	Regulator Pressure .....	20
<b>BASIC SYSTEMS</b> .....	18	Regulator Freeze Ups.....	20
Electrical System.....	18	Filling LP Gas Bottles.....	20
Fresh Water System .....	18	<b>LICENSES</b> .....	9
Drainage System.....	19	<b>LOADING</b> .....	12
LP Gas System .....	19	<b>MAINTENANCE</b> .....	24
<b>BRAKES</b> .....	9	<b>MAINTENANCE RECORD</b> .....	33
<b>CAMPING</b> .....	14	<b>PRE-TRAVEL CHECK</b> .....	27
<b>DRIVING</b> .....	13	<b>SET UP</b> .....	14
Pulling into Traffic .....	13	Bunks.....	15
Passing .....	13	Door .....	16
Braking .....	13	Galley.....	16
Turning.....	14	Inside/Outside Cooking .....	17
Backing .....	14	Raising the Roof .....	15
Upgrades.....	14	Wardrobe.....	17
Downgrades.....	14	<b>STORAGE</b> .....	23
Swaying or Fishtailing.....	14	<b>TOW VEHICLE SELECTION</b> .....	9
Parking on a Grade.....	14	<b>TRAVEL PREPARATION</b> .....	10
Freeing a Stuck Vehicle .....	14	<b>TRAVEL PREPARATION CHECKLIST</b> .....	29
<b>ELECTRICAL SYSTEM</b> .....	19	<b>TRAVEL RECORD</b> .....	32
120-Volt System .....	19	<b>VISITING CANADA OR MEXICO</b> .....	11
Shoreline Connection.....	19	<b>WARRANTY</b> .....	6-7
12-Volt System.....	19	<b>WEIGHT DETERMINATIONS</b> .....	12
Converter .....	19	<b>WEIGHING</b> .....	13
<b>EXTERIOR COMPONENTS</b> .....	34-35	<b>WINTERIZATION</b> .....	23
<b>FEDERAL STICKER</b> .....	12		
<b>FIRE SAFETY</b> .....	24		
<b>FRESH WATER SYSTEM</b> .....	19		
City Water .....	19		
Water Tank .....	19		
Galley Hand Pump .....	19		
Sink.....	19		
Leaks .....	19		



## NEW RECREATIONAL VEHICLE LIMITED WARRANTY

Your new Coachmen Camping Trailer is warranted for one year from the date of retail purchase to be free from defects in material and workmanship.

### WHAT WE WILL DO

Coachmen Recreational Vehicle Company will, for one year from the initial retail purchase date, or as outlined below, make repairs which are necessary because of defects in material or workmanship. We will repair or replace any defective part at no cost to you. Because of design changes and improvements, we may substitute parts or components of substantially equal quality without incurring any obligation to incorporate these changes in any product previously manufactured.

### ADDITIONAL COVERAGE

The crank lift system (used to raise and lower the roof) is warranted for the lifetime of the original purchaser against any functional defects in material or workmanship. Parts and labor on this lift system are covered for the first three years. Parts only are covered for the remainder of the warranty period. This warranty is not transferrable and is limited to functional defects.

The independent suspension (rubberized axle system) is warranted to the original retail purchaser for the period of five (5) years from the date of retail purchase against functional defects in material and workmanship, provided regular maintenance has been performed.

The vinyl tent is warranted to the original retail purchaser for the period of five (5) years from the date of retail purchase against functional defects and workmanship, except for fading, discoloration, soil, misuse, abuse, or environmental damage. Torn vinyl and/or screens will be repaired or replaced at Coachmen's sole discretion, if the problem is reported to Coachmen prior to retail delivery.

### WHAT YOU MUST DO

For warranty service, take the product, at your expense, to your dealer or authorized service center and present your Owner Registration Card or Temporary Owner Registration Card.

You must perform regular maintenance, for example grease bearings, maintain seals around extrusion, keep the vinyl clean and dry for storage, etc. Refer to your owners manual for more detailed instructions.

Your dealer will advise you when the warranty service is complete. All payments for warranty service and parts will be made by Coachmen to the dealer only.

### WHAT IS NOT COVERED

Tires and batteries are warranted separately by their manufacturers.

Damage such as that caused by misuse, abuse, collision, alterations, lack of proper maintenance, improper repairs or environmental damage.

Normal deterioration or wear of fabrics and decorative items due to wear or exposure.

Maintenance service—it is your responsibility to maintain the product in accordance with the instructions provided in the owner's manuals.

Any product which is not registered and normally used in the United States or Canada.

Any promises made by any person beyond those stated in this warranty.

WE SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, such as expenses for transportation, lodging, loss of income. Some states do not allow exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you.

\* \* \* \* \*

IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE TERM OF THIS WRITTEN WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation 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.

We want you to be satisfied with your new product. For further help or information, contact: COACHMEN RECREATIONAL VEHICLE COMPANY, SERVICE DEPARTMENT, P.O. BOX 1000, MIDDLEBURY, INDIANA 46540.



# OUR WARRANTY

**GENERAL**—Your new recreational vehicle is backed by our position as an industry leader, achieved through decades of experience in producing RV's noted for their quality and dependability. Our one-year warranty demonstrates our confidence in our products and is a commitment to customers' continued satisfaction.

Every effort has been made to provide you with a safe, dependable recreational vehicle. Your RV complies with applicable federal and state regulations and the requirements of ANSI A119.2, the nationally recognized "Standard for Recreational Vehicles—Installation of Plumbing, Heating and Electrical Systems." The Recreation Vehicle Industry Association (RVIA) periodically inspects our production and assist in maintaining strict compliance with installation and safety standards for those systems. Similar periodic inspections of the systems are made by representatives of various states. You, the owner, must also perform periodic inspections of the systems and provide a program of preventive maintenance as described in the Owner's Manual and instruction booklets.

**WARRANTY SERVICE**—We recommend that warranty service be performed by the authorized dealer from whom you purchased your RV because of the dealer's continued and personal interest in your satisfaction. But if you are traveling or in the event that you move, service under the warranty will be performed by any of our authorized dealers. Whenever possible, make an appointment to avoid unnecessary delays.

**Always Carry Your Owner Registration Card**, which must be presented to obtain warranty service. The card is proof of purchase and provides the date of retail sale, which are necessary to determine warrantability. If you cannot locate an authorized dealer, contact our Service Department at the address on the back of this manual.

**WARRANTY PERIOD**—The warranty period shall be for 12 months and begin on the date your new recreational vehicle is purchased, or the first in-service date, whichever is first.

**WHAT IS COVERED**—The Manufacturer warrants to owners that an authorized dealer or service center will make repairs made necessary by defects in material or workmanship during the warranty period. Such repairs will be made without charge for parts and labor to the owner.

**WHAT IS NOT COVERED**—Our warranty does not cover tires, batteries or adjustments required because of neglect, accident, misuse, failure to follow service and use instructions, normal wear and/or exposure, unauthorized repairs or unauthorized modifications to any part of the systems or body that might cause defective performance.

Your new recreational vehicle is designed as a temporary living quarters for recreational camping, travel or seasonal use and not as a permanent dwelling place. Usage as a permanent accommodation is a breach of warranty and we are not liable for any damage that results because of such misuse.

The manufacturer does not assume responsibility for loss of use of the recreational vehicle, loss of time, inconvenience or expenses due to equipment failures (refer to the warranty statement for other exclusions and limitations).

**OTHER WARRANTIES**—Be certain to complete and submit to the appropriate manufacturers the warranty forms for tires and batteries, which are not covered by our one-year warranty. If service or parts are required for these products, please refer to the furnished list of factory-authorized service centers. If the list is not available, write or call the manufacturer concerned to obtain the location of the nearest authorized service center.

**OWNER RELATIONS**—Owner satisfaction and goodwill are of primary concern to us. We recognize that our continued success as a leading manufacturer of recreational vehicles depends upon your complete confidence in our products and service. A pleasant and effective relationship through our dealers is as important as maintaining the technical excellence of our product. Your authorized dealer will assist you in providing service, maintenance, selection of options and instructions concerning the operation of your recreational vehicle.

Occasionally, a warranty or service matter may not be handled to your satisfaction. Often it is the result of a misunderstanding and can be resolved at the dealer level. Discuss the situation with the dealership management. If you cannot find satisfaction at the dealer level, we invite you to contact our Customer Service Department, where we will make every effort possible to find an agreeable solution. In most instances, we will eventually refer you back to the local dealer with our recommendations.

Write or telephone Customer Service at P.O. Box 1000, Middlebury, IN 46540, 219/825-7000.

# IMPORTANT SAFETY REGULATIONS

## ... please read carefully.

### LP GAS SYSTEMS AND APPLIANCES

The manufacturer of this recreational vehicle is required to furnish the following consumer information as provided by the National Fire Prevention Association and the American National Standards Institute. The information and warnings found here may also be found in other sections of this Owner's Manual. Please see sections titled "Liquid Petroleum Gas System" and "Appliances" for other safety and operating information.

#### **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 heating. Cooking appliances need fresh air for safe operation. Before Operation:

1. Open overhead vent or turn on exhaust fan, and,
2. Open window.

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.

#### **WARNING!**

Portable fuel-burning equipment, including wood and charcoal grills and stoves, shall not be used

inside this 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.

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

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. Regulators that are not in compartments have been equipped with a protective cover. Make sure that regulator vent faces downward and the cover is kept in place to minimize vent blockage which could result in excessive gas pressure causing fire or explosion.



## INTRODUCTION

Congratulations on the purchase of your new RV. We sincerely thank you for choosing our product. To help you enjoy your new RV, you'll find in this owner's manual many useful tips for camping trips as well as basic operation and maintenance information for your RV's systems and appliances.

**TRY A SHORT TRIP FIRST.** The experience you will gain from this will help make your future RVing more enjoyable.

To complement the standard and optional equipment you've chosen for your unit, there are many other accessories available. You may wish to use your unit several times before you invest in these accessories. What may be a necessity for one RV owner could prove to be of no value to you. Remember, your dealer is always ready to help and advise you.

We go into great detail in this manual and for good reason. If you are a first-timer, we want you to learn to operate your RV correctly, to be able to use its components, appliances and any optional equipment in the most efficient manner.

At first glance, you may be overwhelmed by all the detail. But after you've used your new RV a couple of times, you'll be able to perform all the checks, start-ups and systems in much less time than it takes to read our instructions.

If you're a veteran RV owner, you know that things change and a quick review of this manual will bring you up to date on what's new.

So read on. Happy camping!

**Note:** Because of the variety of models we offer, your RV may not have all of the components illustrated or described in this owner's manual. Ask your dealer for details concerning the specifics of your unit.

## LICENSES

Vehicle licensing laws vary from state-to-state. Check with your state license bureau or the nearest licensing branch office for the requirements of your state. Be sure to renew your driver's license if it has expired or will expire during your trip.

## INSURANCE

Personal liability, property damage, collision and theft of contents may be features of your automobile insurance policy that apply to your RV. Talk to your insurance agent about the details of your coverage. Always carry your insurance policy and/or card with you when you travel.

## TOW VEHICLE SELECTION

If you plan to tow your RV with an automobile or truck you already own, you might wish to upgrade your vehicle by adding heavier-duty shocks, heavier-ply tires, larger battery, larger alternator, etc. Contact your tow vehicle dealer to find out your vehicle's towing capacity. If you plan to purchase a new tow vehicle, be certain to tell your dealer the size and type of RV the vehicle will be towing. Some automotive manufacturers publish brochures that discuss towing considerations. Ask your RV dealer how to obtain a copy of this information.

## ENGINE SIZE

The engine must have enough horsepower to handle the tow vehicle, passengers, the RV unit and all of its cargo. Most automotive manufacturers offer a trailer towing package that usually includes the following: larger alternator and battery, heavier-ply tires, sideview mirrors, heavier electrical wires, and larger engine and transmission cooling systems. Consult your vehicle's owner's manual for recommendations.

**Note:** The use of heavier suspension components (springs, shocks, axles) or heavier ply tires **does not** increase the weight ratings printed on the tow vehicle's "certification" plate. The Gross Axle Weight Rating (GAWR) of each axle is determined by the components with the lowest load-carrying capacity. To avoid overloading your vehicle, check the Gross Vehicle Weight Rating (GVWR) and the GAWR.

## HITCH SELECTION

Your camping trailer fits a 2-inch hitch ball. Ask your dealer about the proper class of loadcarrying hitch to use. The selection of the hitch is important since it affects towing and handling characteristics. Read the information supplied by the hitch manufacturer to achieve best possible performance. The hitch weight for your unit is listed in the sales brochure; be certain your tow vehicle can carry the hitch weight.

**Note:** Installation of a Weight-Distributing (Load-Equalizing hitch) is NOT recommended on any vehicle towing a camping trailer.

## TRAILER BRAKES

Some models of camping trailers are equipped with electric trailer brakes and the brakes are offered as options on all other models.

## HOW YOUR BRAKES WORK

The trailer brake basically is the same as your automobile brake. The major difference is the automobile uses hydraulic pressure to expand the brake shoes. Your trailer brake uses an electric circuit.

When the electric circuit is complete, high-capacity

electromagnets are energized and attracted to the armature surface on the brake drum. As the drum rotates, the electromagnets move the magnet lever arm in the same direction. This movement causes the actuating block to push the primary brake shoe against the drum. The force of the primary shoe pushes the secondary brake shoe in contact with the drum.

## BRAKE SYNCHRONIZATION

Proper brake synchronization is obtained when the trailer brakes have a slight lead over the tow vehicle's brakes. This is done by turning the optional controller adjustment to decrease or increase the application rate of the trailer brakes. After this adjustment, there should be no sensation of the trailer pushing the vehicle. Also, there should not be an excessive sensation of the trailer pulling the vehicle when you come to a stop.

## BRAKE ADJUSTMENT

To maintain the safe, reliable stopping power of your brake system, the brakes should be serviced at regular intervals or, if performance dictates, more frequently. To adjust the brakes:

1. Jack the trailer UP until the wheel rotates freely;
2. Secure the trailer with jackstands;
3. Locate the adjusting slot in the backing plate and remove the protective plate;
4. With a standard adjusting tool or screwdriver, rotate the star wheel until the brake drag makes it difficult for the wheel to turn.
5. The star wheel not must be turned the opposite direction to allow the wheel to turn freely 3/4-to-1 revolution when spun;
6. Replace the protective plug;
7. Repeat the procedure for the other wheels; and
8. Lower trailer.

**Note:** Brakes on new trailers may require repeated brake applications during the first 25 miles of travel to "burnish" the lining material. The burnish process assures a proper match between lining material and drum surface. It also allows the magnet to set itself to the armature plate. These brake burnish applications should be made at 20 to 30 mph without overheating the brake system. Overheating occurs when brakes begin to fade. DO NOT burn-in your brakes by "dragging" them!

## TRAVEL PREPARATIONS

It's always a good idea to plan your trips. Make arrangements for someone to check your house periodically while you're on your trip. Stop mail and newspaper delivery. If you intend to be away for more than two weeks, request police surveillance for your house. Carry an extra set of vehicle and house keys with you on a separate key ring.

Fill your fresh-water tank before leaving. When traveling in winter, however, don't fill the water tank until the interior of your unit is thoroughly warmed or until you reach your destination.

Decide on the various items of equipment, clothing, food and other supplies you'll need for the length and destination of your trip.

Each moment you spend loading your RV is time you lose from the length of your stay. To reduce loading time, stock your RV with a supply of plastic or paper dinnerware, stainless steel or plastic flatware, pots, pans, towels and bedding. Try to use paper, plastic and aluminum whenever possible. They are lighter and less likely to break when the vehicle is moving. If you are planning an extended trip, pack only enough food for two or three days; you can replenish your supply along the way. Don't try to take enough food for the whole trip. Plan meals so that fresh or refrigerated items are used before they spoil. Keep a basic supply of seasonings (sugar, salt, pepper, spices) in your RV.

## GENERAL DRIVING CHECKS

For your safety, make certain that the following items have been checked and rechecked before you take your RV on the road. Be sure to read APPENDIX A: PRE-TRAVEL CHECK for additional driving checks.

**Three-Way Tongue Jack**—The jack must be raised as far as possible or removed and stored.

**Lights**—The following lights should be tested on both the RV and the tow vehicle: brake lights, warning lights, flashers, clearance lights, taillights and tow vehicle headlights. Clean all lens covers.

**Pigtail**—The pigtail should be connected properly to the tow vehicle's electrical harness.

**Hitch Coupler**—Inspect the hitch coupler to be sure they have not loosened.

**Rearview Mirrors**—Adjust the rearview mirrors so that the driver can see the right and left sides of the unit.

## IMPORTANT DOCUMENTS

Always carry your vehicle registration, insurance policy card(s) and owner warranty registration card. If you are borrowing a vehicle, it is best to have with you a notarized letter of approval from the owner authorizing you to be in possession of the vehicle.

## COURTESY

Common courtesy will help make your stay more pleasant. Campsites often are close together and loud noises may disturb neighboring campers. Follow the posted rules of the campsite. Open fires might not be permitted. If you are permitted to build a campfire, clear the area of all flammable materials; never leave a campfire unattended, and always make certain the embers are completely extinguished before leaving the campfire or before going to sleep. Good RVers are proud of the fact that they always leave a campsite cleaner than they found it.

## TOURIST INFORMATION

Obtain current road maps and tourist information for each state you'll visit or drive through. You also may want to purchase a tourist guide book and/or a campground directory.

If you will be visiting federally-operated national parks, monuments and recreation facilities, you might find the Golden Age Passport and/or the Golden Eagle Passport useful. These passports can help families cut expenses at areas where fees are involved.

**GOLDEN AGE PASSPORT** is a free lifetime pass for persons age 62 and over. It covers all admission fees and includes a 50 percent discount on usage fees (except fees charged by privately operated concessions). This passport is available only at park service offices and at parks where entrance fees are charged. It cannot be obtained through the mail or at post offices. To obtain the Golden Age Passport, you will need proof of age, such as a driver's license. (Medicare cards are not accepted as proof of age.) If you do not have adequate proof of your age, be prepared to sign an affidavit swearing that you are at least 62 years of age.

**GOLDEN EAGLE PASSPORT** is designed for persons who plan to visit in a single year several parks or federally-operated facilities. It covers all admission charges, but does not cover usage fees. It is good only during the calendar year in which it is issued. It may be purchased in person or through the mail from the National Park Service Headquarters, department of the Interior, Washington, D.C. 20240; at regional National Park Service offices, or at similar facilities where entrance fees are charged.

Both Golden Age and Golden Eagle Passports cover admission fees for passengers accompanying the permit holder. Where entry to the recreation facility is not by private vehicle, such passport covers only the permit holder and the permit holder's immediate family.

## VISITING CANADA OR MEXICO

The information in this section is general and is subject to change by the Canadian or Mexican government. For specific information, including rules for re-entering the U.S., as well as points of interest and campsites, contact the consulate nearest the point at which you plan to enter the country.

Passports or visas are not required for entry into CANADA or MEXICO. You must, however, carry your birth certificate, voter registration card, baptismal certificate or similar proof of identity when entering one of these countries. Naturalized U.S. citizens should carry their naturalization papers or other proof of citizenship. Persons under 18 years of age should carry a notarized letter from their parents or guardians giving them permission to travel in CANADA or MEXICO.

No special driver's license or permit is necessary in either country; but, renew your license if it has expired, or will expire during the trip. proof of vehicle ownership is required at the border. If you are using some else's unit, you should have a notarized letter authorizing its use.

**Note:** A driver's license may not be recognized as a valid proof of identity.

## MEXICO

A tourist card is necessary for visiting in MEXICO if you will be staying more than 72 hours or travel more than 40 miles from the border. Cards can be obtained at the port of entry or from a Mexican consulate.

### VEHICLES

MEXICO requires a vehicle permit for every self-propelled vehicle. The permit can be obtained only from Mexican Auduana (customs) offices upon presentation of tourist card, vehicle registration and title or notarized statement from owner. Your insurance policy is **not** valid in MEXICO. Temporary insurance must be purchased from Mexican companies (usually offices are located near the border).

### CB RADIO

MEXICO currently prohibits the use of CB radios.

### HUNTING AND FISHING

Hunting and fishing laws in MEXICO are extremely complicated. To request information, contact:

Secretaria de Comunicaciones  
Estados Unidos Mexicanos  
Mexico DF

### DOGS AND CATS

MEXICO requires a certificate signed by a licensed veterinarian. The certificate should describe the pet and show that the pet has been vaccinated for rabies within the past six months. A fee is charged for the required verification of the certificate by a Mexican consulate.

## CANADA

### VEHICLES

CANADA requires a Canadian Non-Residential Interprovincial Motor Vehicle Liability Insurance card, which is available only from U.S. agents. All provinces in CANADA require evidence of financial responsibility if visitors are involved in an accident. Limits vary from province to province. Contact your insurance agent for details.

### CB RADIO

CB radio operation in CANADA requires a temporary license. To obtain such a license, write to:

Regional Director  
Telecommunications Regulation Branch  
Department of Communications  
20th Floor  
2085 Union Avenue  
Montreal, Quebec H3A 2C3  
Canada

## HUNTING AND FISHING

Revolvers, pistols and fully-automatic firearms are prohibited in CANADA. Each province has its own laws and licensing requirements. You must provide a written description and the serial number of each gun at the border. A license must be obtained from the province in which you intend to hunt or fish. Further information can be obtained by writing to the Department of Lands and Forests, Wildlife Branch, in the province you intend to visit.

## DOGS AND CATS

CANADA requires a certificate signed by a licensed veterinarian in the U.S. or Canada stating that your dog has been vaccinated for rabies within the past 12 months. The certificate must contain a description of the dog and date of vaccination. Puppies under three months need no certificate. There is no restriction on the entry of healthy cats.

## TOWING HOOK-UP

Turn the front jack crank (Figure 1, Page 35) counterclockwise and raise the coupler above the hitch ball. Position the tow vehicle so that the ball is directly under the coupler. Lift the coupler lever up as far as possible (Figure 1, Page 35). Turn the jack clockwise to lower the coupler onto the hitch ball. Secure the connection by pushing the coupler lever down. Make sure that the coupler is securely attached to the hitch ball. After attaching the coupler to the hitch ball, adjustments may be necessary to eliminate hitch rattle. This is done by tightening the coupler adjustment nut located beneath the coupler (Figure 2, Page 35).

## THREE-WAY TONGUE JACK

To raise the three-way tongue jack assembly, unscrew the release lever (Figure 1, Page 35). Raise the jack up as far as possible. Tighten release lever. Turn jack clockwise to raise dolly wheel.

To remove jack, unscrew release lever until outer half of bracket swings open. Remove jack and close bracket. Screw in release lever.

**Note:** Never unscrew release lever until front of unit is securely blocked or hitched to tow vehicle.

## SAFETY CHAINS/ELECTRICAL CONNECTIONS

Cross the safety chains under the "A" frame and attach them to the tow vehicle's hitch platform. Plug the pigtail (Figure 1, Page 35) into the tow vehicle's electrical harness. Leave enough slack in the chains and the pigtail to allow the unit to turn freely. Safety chains and p should **not** touch the ground.

## HITCH BALL HEIGHT

When the loaded trailer is hitched to the tow vehicle, check the hitch ball height. This can be done by measuring from the top of the curved portion of the coupler to the ground (Figure 1, Page 35). A high hitch will transfer weight behind the axle, causing the unit to fishtail. A low hitch will transfer additional weight to the hitch. For proper hitch ball height see APPLIANCE IDENTIFICATION FORM on Page 30.

## LOADING

A properly loaded vehicle is safe and easy to tow. Distribute your cargo evenly from side-to-side and from front-to-back. Heavier items should be stored as centrally as possible, on or near the floor. They should be stored so that they cannot slide during a sudden stop and cause damage. (Loose cargo can alter the balance you had when you started.) Lighter items can be stored in cabinets and drawers. A properly loaded unit can help conserve fuel and can prevent excessive wear on your tow vehicle's automotive system.

MFD. BY:		DATE			
INC. VEH.		DATE			
MFD. BY:					
GVWR LB	TIRES	PSI COLD SINGLE	PSI COLD DUAL	RIMS	
FRONT					
INTER-MEDIATE					
REAR					
GVWR LB	MODEL NUMBER				
TYPE:	VEHICLE I.D. NUMBER				
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT IN:					

## FEDERAL STICKER

## WEIGHT DETERMINATIONS

It is extremely important that you weigh your unit prior to leaving on a trip to determine whether your cargo is within the allowable limits for the various suspension components of your unit and tow vehicle. Check the Gross Axle Weight Rating (GAWR) and the Gross Vehicle Weight Rating (GVWR) listed on the Federal Sticker found on the road side of your camping trailer. Your tow vehicle will also have a Federal Sticker. The ratings are for the specific rim and tire sizes which are listed.

We suggest that you record this sticker information in the space provided here to ensure that you always have the information close at hand.

GVWR \_\_\_\_\_ GAWR Front \_\_\_\_\_

GAWR Rear \_\_\_\_\_ with \_\_\_\_\_ tires

RIMS \_\_\_\_\_ at \_\_\_\_\_ PSI cold \_\_\_\_\_

You can weigh your vehicle at a grain elevator, sand and gravel dealer or government weighing station. Make an appointment to weigh your unit fully loaded. There may be a small fee for weighing your vehicle; however, it is an investment in safe traveling and peace of mind. Check your Yellow Pages for the address and telephone number of the weighing facility nearest you.

## DEFINITIONS

**GAWR**—The allowable weight, including cargo, which can be safely supported by each axle.

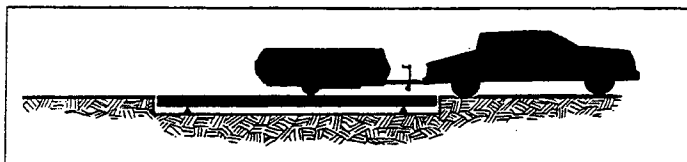
**GVWR**—The maximum permissible weight of your unit, including cargo, all options and passengers.

**GVW and GAW**—These are found by weighing the vehicle fully loaded. GVW is the actual weight of the pickup truck and all standard and optional equipment, cargo and passengers. GAW is the portion of the fully-loaded vehicle which is transferred to the axle(s).

## WEIGHING

Follow this procedure to weigh your RV and tow vehicle.

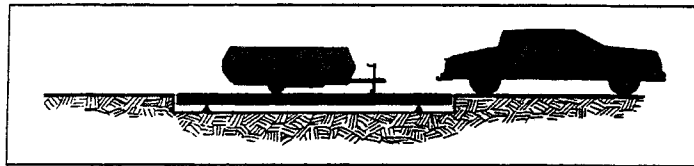
**STEP 1**—As shown in the illustration, pull your fully loaded and hitched-up trailer onto the scale; stop when only the trailer axle is on the scale. This will give you the Gross Axle Weight (GAW). The GAW must not exceed the Gross Axle Weight Rating (GAWR) of your unit. If it does, shift/remove cargo to achieve proper tolerance.



**STEP 1 - GROSS AXLE WEIGHT**

**STEP 2**—Unhitch the tow vehicle, leaving the fully loaded trailer with the axle and front jack on the scale.

This will give you the Gross Vehicle Weight (GVW). If the figure exceeds the listed GVWR on the Federal Sticker, remove cargo to achieve proper tolerance.



**STEP 2 - GROSS VEHICLE WEIGHT**

**STEP 3**—To find the hitch weight, deduct the GAW, determined in Step 1, from the GVW, found in Step 2. If the hitch weight exceeds 15% of the GVW of the unit, move part of the cargo toward the rear. If it is less than 10%, move part of the cargo toward the front. Be sure, also, not to exceed the load rating of your hitch.

## \* CAUTION \*

*Extending the rear bumper or adding rear supports to carry tool boxes, bikes, motorcycles or other heavy equipment may seriously overload the trailer brakes, axle, wheels and tires. In addition, rear-end loads reduce the hitch weight and can cause severe fishtailing. Never exceed the GAWR for your unit. Never tow with less than 10% of the trailer Gross Weight on the hitch.*

## DRIVING

Get to know how your tow vehicle handles with the added weight of your RV. The brakes and steering operation will be different. Before leaving on a trip, practice making right and left turns, braking, backing and accelerating. Your RV is designed to travel at maximum legal highway speeds under ideal conditions. Under less than ideal conditions, your vehicle should be operated at reduced speed and it should never exceed the posted legal speed limits. Before you travel be sure to read APPENDIX A: PRE-TRAVEL CHECK in this manual. Below are tips to help you.

## PULLING INTO TRAFFIC

Check for oncoming traffic in all directions. Signal before entering the flow of traffic. Always accelerate slowly and smoothly; the added weight of your RV makes quick acceleration not only difficult but potentially unsafe.

## PASSING

Avoid sudden maneuvers when passing a slower-moving vehicle. Remember that additional time and distance are required to pass safely. Wait until the road is clear of oncoming traffic for at least 1/2 mile. Check the outside rearview mirrors and signal lane changes before passing other vehicles. When you have safe clearance, signal lane change and return to your original lane.

## BRAKING

Allow a safe distance to stop; follow no closer than one combined tow vehicle/RV length for each 10 mph. Pump the brake pedal lightly to stop on wet or icy roads. If you start to slide, turn the wheel in the direction of the slide. DO NOT "slam on" the brakes—a panic stop may increase the slide and could cause your unit to jackknife.

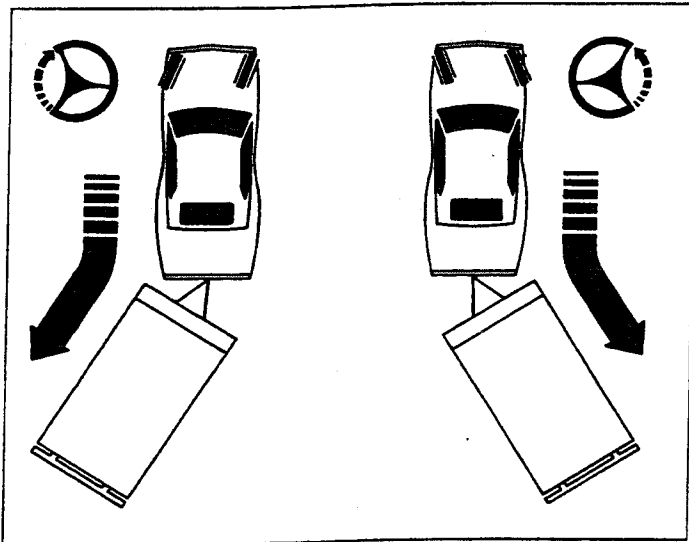
## TURNING

The wheels of your RV may be set wider than those of your tow vehicle. Pull several feet farther ahead before turning. This will compensate for the extra width and length of your RV and will help you avoid hitting curbs or parked vehicles.

## BACKING

It is extremely important that you back the RV slowly. Trying to maneuver the RV as you would in normal driving could cause the unit to jackknife, hit your tow vehicle or cause other damage. The same hazards could result from turning the wheels too sharply when you back the vehicle or when you are driving normally.

Backing the unit may require stationing someone beside the unit to guide the driver. When backing your RV, place your right or left hand at the bottom of the steering wheel. To move the trailer to the left, move your hand to the left; to move the trailer to the right, move your hand to the right. If the trailer starts to jackknife, stop, pull forward and start the procedure again.



**BACKING TRAILER**

If you have never backed a tow vehicle and trailer before, it is almost always a good idea to practice backing in an empty parking lot before you "hit the road." Your dealer will usually be willing to assist you by teaching you maneuverability techniques.

## DOWNGRADES

When you are going downhill, reduce your speed and shift the transmission to a lower gear to assist in braking on long or steep downgrades.

## UPGRADES

To avoid engine overheating when climbing a steep grade, reduce speed and shift the transmission to a lower gear.

## SWAYING OR FISHTAILING

If this happens, accelerate slightly and then gradually slow down. If your unit still sways, pull off the road and check the following:

1. Distribution of cargo,
2. Tire pressure, and
3. Tow vehicle front-end alignment and suspension.

## EMERGENCY STOPPING

Do not "slam on" the brakes if the coupler disconnects from the hitch; the camper may strike the tow vehicle. Steer toward the shoulder of the road and gradually reduce speed. The safety chains, which must be crossed under the coupler and hooked to the hitch platform, will prevent the tongue from dropping to the road.

## PARKING ON A GRADE

Parking vehicles on an upgrade or downgrade is not recommended. If it is necessary in an emergency, always apply the brakes and have a passenger place wheel chocks behind the tires of your RV. When in place, slowly release brakes until the unit is stopped by the chocks. Apply parking brake and shift transmission into PARK position (place manual transmission vehicles in gear).

## FREEING A STUCK VEHICLE

To pull your unit out of the snow, sand or mud, apply slight pressure to the accelerator pedal and move the gear selector lever rhythmically between first gear and reverse gear. If possible, keep the front wheels pointed straight ahead. Avoid sharp turns. Once the unit starts to move, do not stop until it is on firm ground.

## CAMPING

### CAMPSITE SELECTION

There are many campground guides that will assist you in making your selection. Many campgrounds accept reservations, and during peak seasons, it is wise to make a reservation. If possible, arrive early so you can inspect and choose your campsite during the daylight hours.

### SET-UP

It is very important that your unit is level. This allows your drainage system, which functions by gravity, to operate properly. Place a small level on the roof of the unit to check levelness. You may wish to permanently attach levels (available at your dealer) on the front

and/or back and sides of the RV. This will allow you to tell at a glance if you've stopped on a level site and will help speed the leveling process.

### SIDE-TO-SIDE LEVELING

If the unit needs side-to-side leveling, make a step leveling ramp on the low side out of 1 x 6" or 2 x 6" boards of varying lengths. Pull the unit forward or back onto the leveling ramp until the tire(s) on the low side is level. Many experienced RVers carry level boards or blocks in their unit for this purpose (Figure 3, Page 34).

### FRONT-TO-BACK LEVELING

Unhitch the trailer from the tow vehicle, and crank the front jack down. If the ground is soft, also place a board under the dolly wheel. The stabilizing jacks must be placed under the frame. Lower the front about 2 inches below level. Place a jack under each main frame member—NEVER THE FLOOR—at the rear of the trailer. Raise each jack until it touches the frame. If you have four stabilizing jacks, raise the front jack about 2 inches above level and place jacks under the main frame members near the front of the unit. Check levelness from front-to-back and side-to-side. If the unit is not level, adjust the appropriate stabilizing jacks.

## RAISING THE ROOF

### CRANK LIFT SYSTEM

Open door and remove crank. Close door. Unlatch all four roof latches (A). Open hatch near right hand rear taillights (B) and insert crank. Crank clockwise until

height indicator cable (C) is taut. Remove and store crank handle until you lower roof.

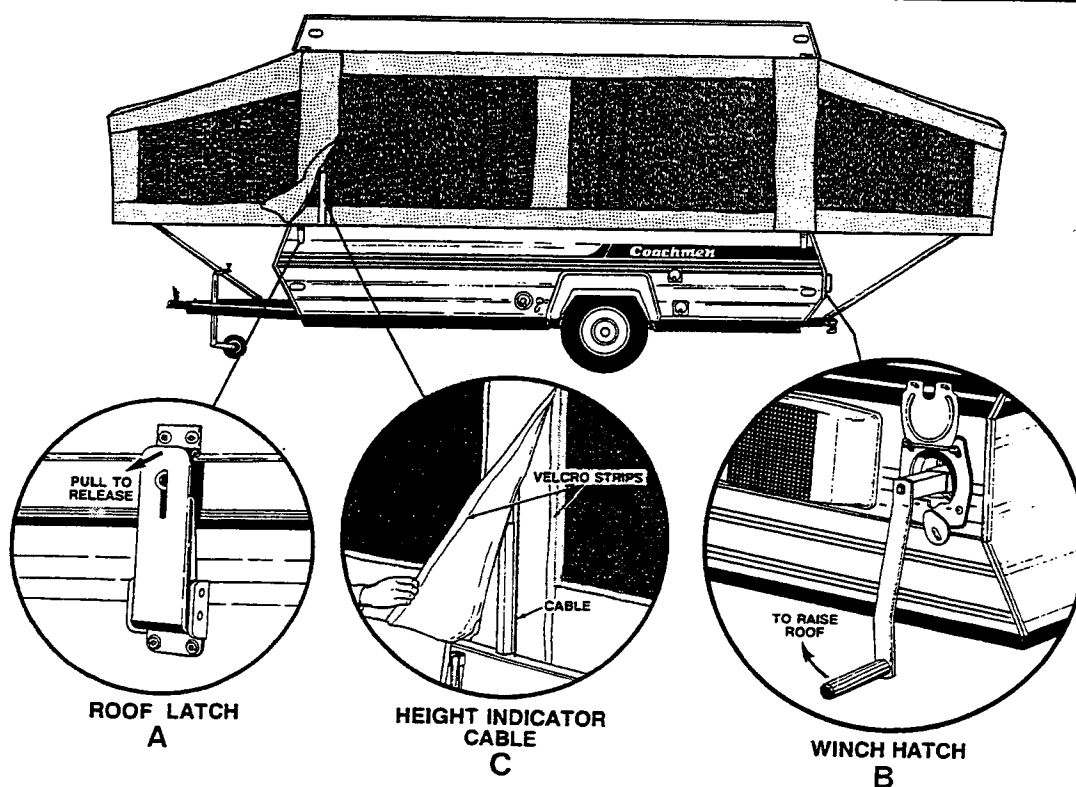
To lower the roof, crank winch counterclockwise. Stop cranking when the roof is approximately one foot from the camper body and tuck the tent into the unit. Continue cranking until the roof is about six inches from the body; tuck remaining tent fabric into the unit, then finish lowering roof. Should you be closing the roof on a windy day you may want to stop cranking and tuck in the tent several times to prevent the canvas from becoming caught in the lift system. Secure roof latches.

After securing the roof latches, put slight tension on the cable by cranking the handle clockwise one or two turns. This will lift the cables off the floor and help prevent in-transit damage.

## BUNKS

Remove bunk support rods from storage. On some models these are found behind a hatch in the front profile of the unit (Figure 4, Page 35); on other models they are stored under the bunk mattress.

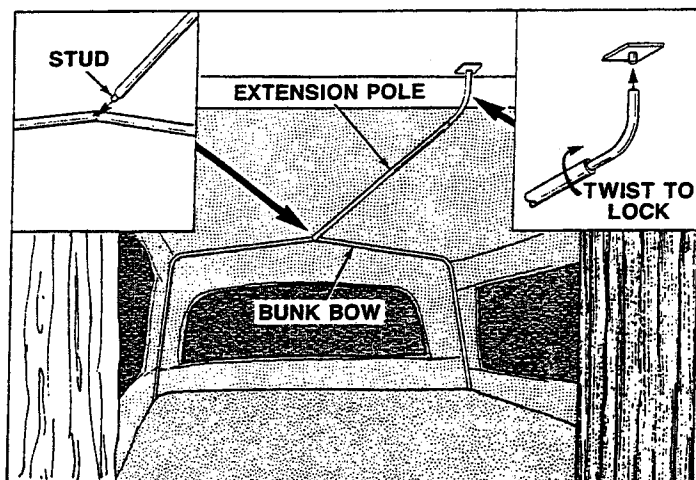
Insert one end of each rod into the sockets on the trailer frame. From the outside, grasp the bunk tray, lift slightly and pull outward until bunk is completely extended. Slightly lift the edge of the bunks until the end of the support rod can be inserted into the tongue of the bunk support plate (Figure 5, Page 35). Do not allow the bunks to hang unsupported as this may cause damage to the bunk slides. Insert extension pole with stud into center of hinged bunk bow. Attach curved bracket to extension pole. Carefully push bunk bow outward until



CRANK LIFT SYSTEM

canvas bunk top is taut. Attach curved bracket to base plate on ceiling. Turn extension pole clockwise to secure rafter. Locate shock cord with "S" hook in flap under bunk tray. Attach to eyelet in opposite side flap to provide a weather-tight seal (Figure 6, Page 35).

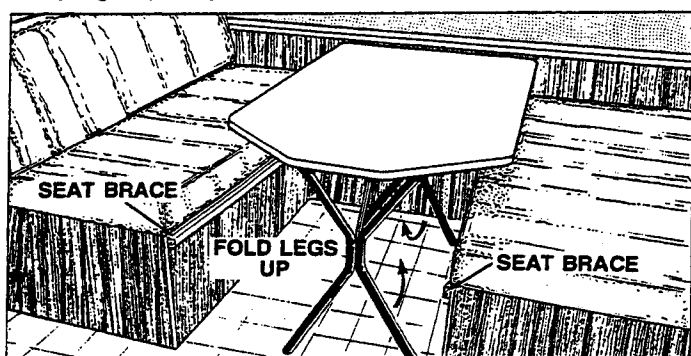
**Note:** As the canvas is permanently attached to the bunk on the outer edge only, do not place small children or infants in bunk area without providing adequate protection around open edges.



**BUNK BOWS**

### DINETTE BED

Fold table legs and secure with straps. Lower table onto seat braces. Arrange cushions on top for additional sleeping capacity.

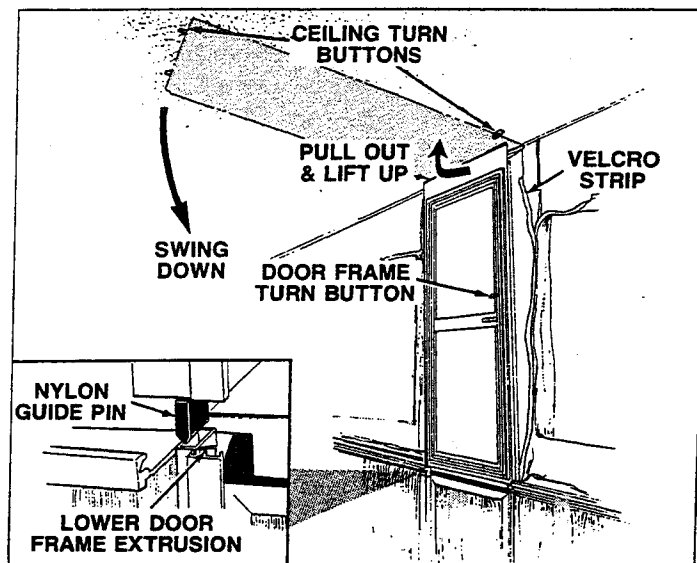


**DINETTE BED**

### DOOR

The lower portion of the door must be closed for proper assembly. From inside the unit, release the ceiling turn buttons and gently lower the upper portion of the door to a vertical position. Pull inward on the top and lift; the door will bend at the hinged plate on top. Position the bottom of the upper door directly over the lower door and insert the nylon guide pins into the lower

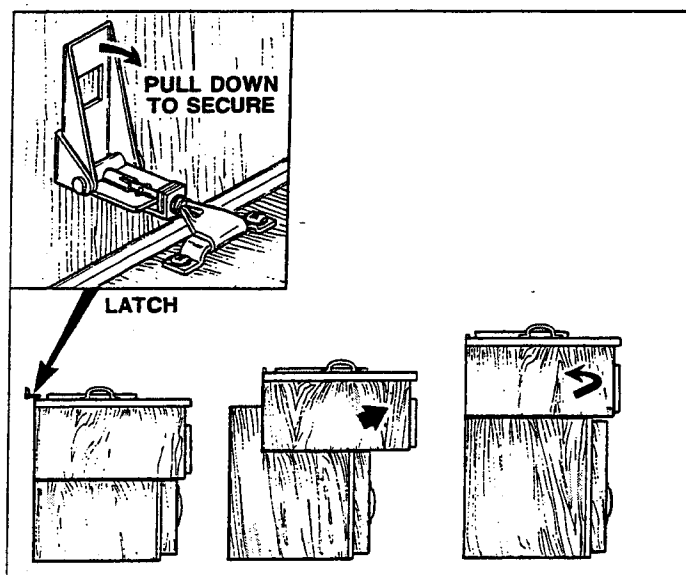
door slots. Push outward on the top of the upper door frame until the hinged plate is flat. Secure in place with turn buttons on the sides of the hinge plate. Release the turn button on the right side of the upper door frame to open the door. Attach the velcro strips on the canvas to those on the inside portion of the door frame.



**DOOR ASSEMBLY**

### GALLEY

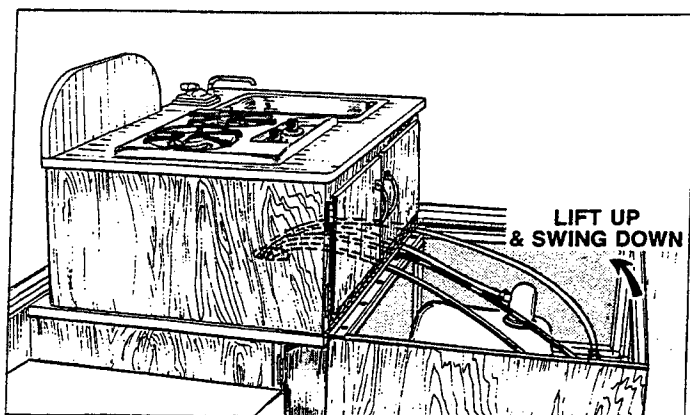
Depending on model, you may have a swing-up or flip-over galley. To set up the swing-up galley, release the safety latch located in the center of the counter, lift and pull forward, then push into position.



**SWING UP GALLEY**

The flip-over galley simply swings down for travel and up for use.

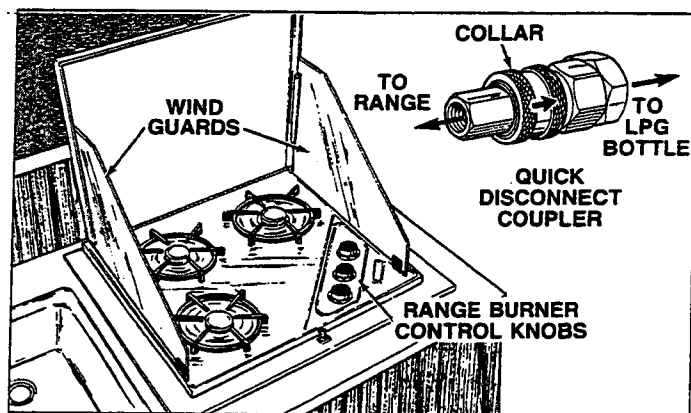




**FLIP-OVER GALLEY**

## INSIDE/OUTSIDE COOKING

Depending on the model of your camping trailer, you may have inside/outside cooking. To use, fold up the wind guards and close the cover. Unlatch and disconnect the LP gas quick-disconnect inside the upper galley. Lift the stove assembly out of the upper galley by grasping the counter top where the finger cut-outs are located. Carry the stove outside.



**INSIDE/OUTSIDE STOVE**

Locate the "J" brackets on the camper side (Figure 7, Page 35), then locate the "H" bar support on the back of the stove. Lift the bar support and snap it on to both of the "J" brackets. While holding the front of the stove up with one hand, locate the support rod under the stove. Pull it free from the holding clip and turn the bottom section to extend it down onto the support bracket located under the floor between the "J" brackets.

Level the stove with the hand you were using to hold it up, then twist the lower section of the support rod to lock it into position. Reconnect the LP gas quick-disconnect under the stove to the fitting located in the hatch (it will pull out) and latch.

**\* CAUTION \***

*Do not lean on stove.*

## WARDROBE

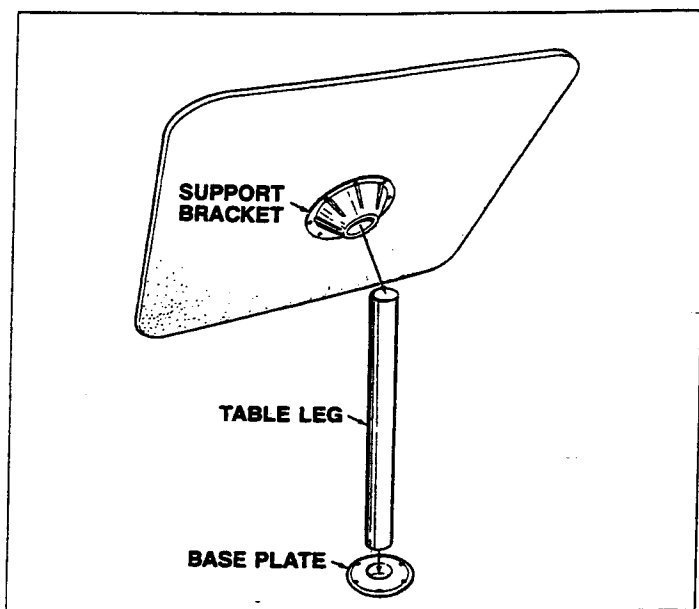
Depending on model, you may have a wardrobe in your camping trailer. To set up, lift the wardrobe and carefully slide it toward the outside wall to an upright position. Position it on top of the storage cabinet and secure in place with the cam lock located at the rear of the wardrobe.

Ask your dealer to demonstrate the complete set-up procedure (roof, bunks, wardrobe, galley, inside/out cooking) and practice it at home before you make your first camping trip.

## TABLES

**Folding Leg Style**—Lift table from seat braces, loosen hook and loop tape, pull table legs down until position is engaged. Place the table where desired.

**Pedestal Style**—Insert table leg into the base plate. Lower table support bracket onto the leg.



**PEDESTAL TABLE**

*Note: Your camper may have one or two table legs, depending on model.*

## VINYL WINDOWS AND SCREENS

Unzip vinyl windows to permit ventilation. Roll vinyl and secure in place with snap-end straps.

## OPTIONAL SIDE DRAPES

Some models require a shock cord retainer on the off-door side to keep curtains from blowing over the stove area. If shock cord is included, fasten "S" hook in end loop, then thread other end of shock cord through the bottom hem of drape, through center loop and through bottom hem of other drape. Hook into tent loop at this point. Please refer to package instructions for diagram.

## BASIC UTILITY SYSTEMS

This section will describe the four basic utility systems found in your RV. They are: Electrical, Fresh Water, Drainage/Sewer and LP Gas. The following will familiarize you with their function, operation and simple maintenance. If a problem should develop with any of the four systems, notify your dealer or any authorized RV dealer for service.

### ELECTRICAL SYSTEM

Your camping trailer contains two separate electrical systems: one 12-volt direct current (DC), similar to the one in automobiles, and one 120-volt alternating current (AC), similar to the one in homes. These systems provide you with power while you are camped or are traveling. The 120-volt system requires an external source of 120-volt electricity, usually a campsite or household receptacle or an auxiliary generator. The 12-volt electrical system is supplied by the battery in your vehicle or the power converter which changes 120-volt AC into 12-volt DC.

#### 120-VOLT SYSTEM

The 120-volt system supplies power for the power converter for the 12-volt system and the 120-volt receptacles located in the camping trailer, which are used to operate regular household appliances. It may also provide 120-volt power for an optional 2-way electrical refrigerator.

When you use the external 120-volt hook-up, the electrical power source is connected directly into the main electrical service panel and is distributed through a circuit breaker.

#### SHORELINE CONNECTION

The Shoreline (Figure 8, Page 34) is a heavy-duty cable with a 3-prong grounding plug on one end, permanently attached at the other end, and connected to the power converter. It can be pulled from its storage compartment through a hatch in the sidewall of your vehicle and connected to a matching receptacle. Some campsites and trailer parks still have two-slot outlets. If it is necessary to use a 3-to-2 adapter, be certain its grounding wire is fastened securely to the outlet grounding screw.

The 120-volt system is protected by the circuit breakers. If a circuit breaker opens, unplug the appliance(s) on that circuit, allow a short period for the breaker to cool, and reset the breaker. If the breaker continues to open, notify your dealer.

#### 12-VOLT SYSTEM

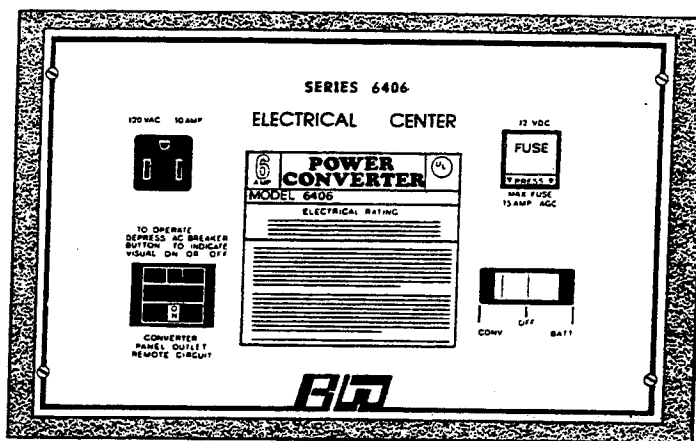
12-volt energy is supplied by the automotive battery, through the pigtail connection, or the power converter.

The automotive battery and alternator supply 12-volt power to the taillights, brake lights, electric brakes,

clearance lights, turn signals, warning flasher lights, and 12-volt side of an optional 2-way refrigerator.

### CONVERTER

The power converter transforms 120-volt AC into 12-volt DC. The converter supplies power to all of the 12-volt systems, except the optional refrigerator, and vehicular lights. The 12-volt circuit is protected by a fuse in the power center. If the fuse breaks, turn off or unplug all appliances. Replace the broken fuse with one of the same ampere rating. If the fuse continues to blow, contact your dealer.



ELECTRICAL CENTER

### FRESH WATER SYSTEM

Fresh water for your unit is supplied either by the vehicle's fresh water tank or by an exterior pressurized source. Both supply water to the sink.

#### CITY WATER

Connect a hose to a "city pressurized" water faucet and to the trailer's fresh water inlet (Figure 9, page 34). When using the city water hookup, the water tank is bypassed. You cannot fill the water tank through the city water inlet. When city water is not being used, tighten cap on city water fill.

Although a common garden hose can be used to fill the water tank and connect to city water, long-time RVers recommend a hose specifically manufactured for this, available at your RV dealer.

**Note:** In areas where city water pressure exceeds 60 psi, you should use a pressure regulator. Excessive water pressure may damage lines and connections. See your authorized dealer for more details.

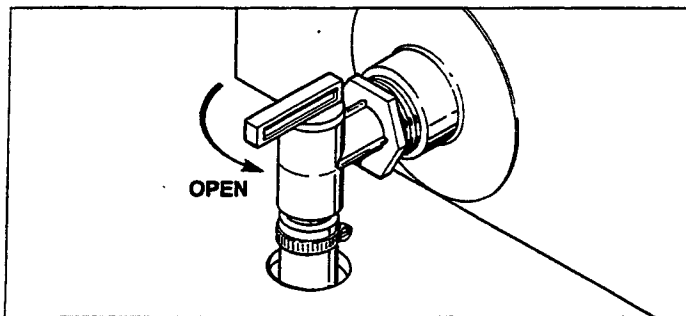
#### WATER TANK

To fill the water tank, open gravity water fill by pulling out the fill spout (Figure 10, Page 34). Use a hose or vessel to fit the fill spout. Water will flow out of the water fill when the tank is full.

The water tank should be sanitized before you use it for the first time; after a period of nonuse; and whenever you suspect the tank is contaminated. To sanitize your

water tank, first empty the tank and then use the following procedures:

Open the drain cock and drain the water out. When the tank is empty, close the drain cock. Mix 3 gallons of water with 1/4 cup of liquid household bleach. Pour solution into the tank through the gravity water fill. Wait 3 hours. Drain the tank and flush with fresh, potable water. If a chlorine taste lingers, pour 1 quart of vinegar and 5 gallons of water into the tank. Wait two to three hours and then flush with fresh water.



WATER TANK DRAIN

### SINKS

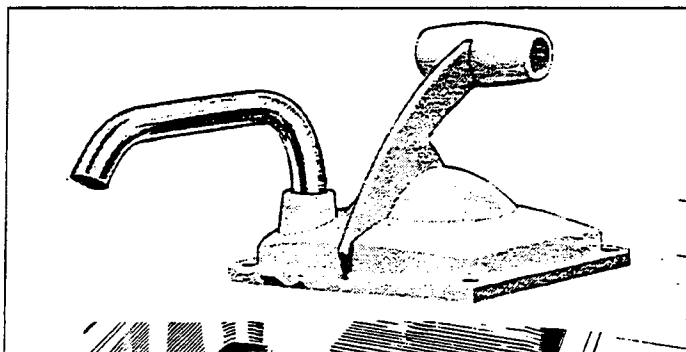
Clean the kitchen sink with non-abrasive cleaner. Stainless steel cleaner may be purchased at most grocery stores.

### LEAKS

Traveling over bumpy or rough roads can cause pipe fittings to loosen. Check the pipe fittings in your unit regularly for signs of leakage.

### GALLEY HAND PUMP

Water to the galley hand pump faucet is supplied by either the water tank or pressurized hookup. To draw water from the tank, pump the handle. Simply push down on the handle for water when using a pressurized connection. When city water is not being used, tighten cap on city water fill.



GALLEY PUMP

### DRAINAGE SYSTEM

The drainage system of your camping trailer consists of a sink drain and a draintrap. The latter maintains a water barrier to prevent odors (caused by drain water) from entering the RV.

### DRAINAGE

Remove the protective cap from the drain fixture (Figure 11, Page 34) and attach a garden hose to the outlet. Some campsites will have septic service for the disposal of sink water at each site. If the site is not so equipped, collect drain water in a bucket or other container and dispose of it as required by the park rules. To avoid contaminating your water system, use different hoses for fresh and drain water. Hoses of different colors will help you to avoid interchanging. The same is true for buckets or vessels used for fresh water and drainage; paint or mark them to prevent contamination.

**\* CAUTION \***

*Do not pour boiling water down the drain as it may damage your flexible drain hose.*

### DRAIN CARE

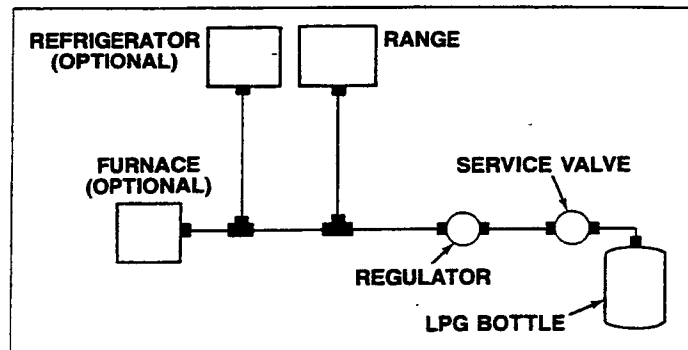
Use clear water to clean exterior pipe surfaces. Do not use harsh drain cleaner chemicals or solvents in drains.

### PORTA-POTTI

If you have chosen to equip your camping trailer with an optional Porta-Potti, please read the manufacturer's owner's manual for complete operating instructions.

### LP GAS SYSTEM

The liquified petroleum (LP) gas system in your unit furnishes fuel for heat, cooking and optional appliances you may choose. LP gas provides a portable, efficient and inexpensive source of energy. It is stored in a gas bottle on the "A" frame of your camping trailer.



LP GAS SYSTEM (TYPICAL)

Under pressure in the tank, the LP gas turns to vapor; it is the latter that burns. Each bottle has a 20 percent liquid level valve that allows space in the tank for vapor expansion. **Never** overfill the bottle. The high pressure of the vapor in the bottle is reduced in two stages through a regulator (Figure 12, Page 34).

LP gas is usually propane or a blend of propane and butane. When you fill your tanks, be sure to use propane **ONLY**. Do not use butane or butane mixtures.

The LP gas system is designed and built to meet

rigid standards, and it is tested before it leaves the factory. Your dealer also tests the system before it is delivered to you. Except for simple maintenance and occasional tightening of a connection, always take your vehicle to an authorized dealer for LP gas problems. Always have an authorized LP gas supplier fill your LP gas bottle.

LP gas burns readily and with intense heat. With proper care and maintenance, it is safe and efficient. There are, however, certain characteristics about LP gas you should know. LP gas is heavier than air and tends to collect in low pockets. As LP gas settles into any closed area, it displaces air and could cause suffocation if not detected. It also could create a fire or explosion hazard. In its natural state, LP gas is odorless. An additive gives it a distinctive mustard odor so that leaks can be readily detected. The following label has been placed in the vehicle near the range area:



If you smell or think you smell gas:

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

Before using any LP gas appliance, read the respective manufacturer's operating instruction manual.

**Note:** LP gas containers should not be placed or stored inside the living area of a vehicle. LP gas containers are equipped with safety devices that relieve excess pressure by discharging gas to the atmosphere.

## CLIMATE DIFFERENCES

The appliance will not function if the LP gas does not vaporize. Propane continues to vaporize down to 44 degrees Fahrenheit below zero. Liquid gas does not vaporize as rapidly in cold weather, so you may place too great a demand on your bottles' capacities in certain conditions. This can cause a refrigeration effect resulting in frosting of the bottle and regulator. Check with your dealer or LP gas supplier about the appliance demands that can be met by your bottle at various temperatures. Always have your LP gas supplier add anhydrous methanol before filling the tank in cold weather.

Propane has become the main type of LP gas used in RVs. It is recommended that you use only propane gas. The names of LP suppliers can be found in the

Yellow Pages of your telephone directory under "Gas-Liquefied Petroleum-Bottled and Bulk." Many campgrounds now have LP fill facilities, as do some service stations.

To operate any LP gas appliance, the LP gas SERVICE valve (Figure 12, Page 34) must be open. When first used, or after a refill, there may be some air in the gas lines that will escape when you first 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 bottles' SERVICE valve some of the gas will remain in the lines. To completely bleed the lines of gas, close the bottle's SERVICE valve and light a range burner to use up the excess. When the flame burns out, turn the range burner off.

## REGULATOR PRESSURE

Check the LP gas regulator at the beginning of each season or whenever a problem is indicated. Correct line pressure is 11 inches of water column. Your dealer or LP gas supplier can perform this check.

LP gas regulators must always be installed with the diaphragm vent facing down. Regulators that are not in compartments have been equipped with a protective cover. Make sure that the regulator vent faces down and that the cover is kept in place. This will minimize vent blockage that could result in excessive gas pressure and could cause a fire or explosion.

## LP GAS REGULATOR FREEZE-UPS

LP gas regulator freeze-up is a problem RV owners can prevent if they are aware of its causes. Although every precaution is taken by fuel producers, tank manufacturer's, and LP gas dealers to keep moisture out of the fuel, this problem at times does exist and causes regulator freeze-ups. Suggestions that you may want to follow to help prevent this moisture are:

1. Always keep the main tank valve closed during periods that gas is not in use, especially if the tank is empty.
2. Contact your LP gas dealer about the addition of methyl alcohol to your tank. Your dealer may do this for a minimal charge, and it will help to prevent freeze-up.

## FILLING LP GAS BOTTLES

Follow these basic practices to ensure safety.

1. Do not fill your tank beyond the legal liquid level capacity.
2. Never use a wrench or pliers to close to POL valve or liquid level on your tank. These valves are designed to be closed leak-tight by hand. If wrenches are necessary to stop a leak, the valve should be replaced.
3. Use a proper wrench to tighten the left-hand thread POL nut on the SERVICE valve. Do not overtighten it or jam it. This is a machined brass fitting that

seats securely against a female seat in the POL valve; it requires no pipe joint compound.

4. Open the POL valve all the way and then close it one quarter turn. This should be done when you are ready to use your tank. This will assist you in determining if the valve is opened or closed.
5. Make periodic checks for leaks in all tank and line connections. Use a propane gas leak detector solution to make these checks. Vibrations during travel may cause leaks.
6. Be sure to fasten your tank(s) securely in place.
7. Turn the dual tanks so that the open part of the tank guard is facing the trailer. This will protect the valve and regulator from flying rocks or mud.
8. Transport your tank in the same position as it is used normally. Make sure the valve is closed. Do this whether you remove your tank for transport to a dealer or for a refill. Always secure the tank to keep it from falling or rolling.
9. Practice safety at all times. LP gas can be dangerous. If you have any questions about the operation of your gas appliances or the LP gas system, contact your local LP gas dealer.
10. You can check the volume of LP gas by weighing the bottle comparing the known weight of an empty and a filled bottle. The TARE (empty) weight is stamped on the LP gas bottle handle.

The following warning label can be found near the LP gas container:

**DO NOT FILL CONTAINER(S) TO MORE THAN 80% OF CAPACITY. Over-filling the LP gas container can result in an uncontrolled gas flow which can cause fire or explosion. A properly filled container will contain approximately 80% of its volume as liquid LP gas. If the tank is over-filled, have the LP gas dealer bleed out the excess. DO NOT smoke, strike a match, or ignite a lighter when the LP gas container is being filled. A spark or flame could ignite fumes. Be certain all burner and pilot flames are out and Service Valve is closed when filling your vehicle's LP gas or fuel tanks.**

## APPLIANCES AND ACCESSORIES

### RANGE

Your camping trailer will have a two or three burner range which is a gas appliance. Read the range manufacturer's manual carefully for complete details on the operation and care of the range.

### **WARNING!**

**IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING. Cooking appliances need fresh air for safe operation. Before operation:**

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

This warning is 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. 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.

### LIGHTING THE RANGE

Be certain the LP gas container Service valve is OPEN. Light a match and hold it close to the range burner, then turn the burner's control knob to full ON. Air in the line may cause a blowing noise and may extinguish the match. When the line is free of air, the burner will light readily. Adjust the burner flame with the control knob.

### CARE OF RANGE

Allow the range top to cool, then clean it with hot, soapy water. Use a damp cloth to clean chrome surfaces. Grease splatters, which may bake onto the surfaces, should be wiped off before they are time to harden. Use chrome polish to remove stubborn stains.

### ICE BOX

Place ice in the top tray. Make sure the hose, located near the back of the tray, is not bent or clogged. Water drains through this hose and onto the ground as the ice melts.

### CARE OF ICE BOX

Remove food and ice after each trip. Clean the interior with warm water and a mild soap. Wipe dry with a soft, dry cloth. Do not use an abrasive cleaning material; it will scratch interior surfaces. Prop the door open during periods of nonuse.

Never use strong chemicals or abrasives to clean the refrigerator; they can do harm to the plastic and aluminum surfaces. If the refrigerator is not in use for a period of time, turn all power off, empty and clean the interior and leave the door slightly ajar.

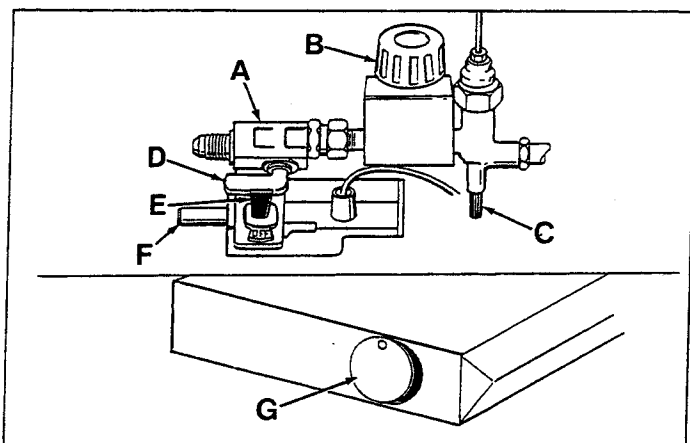
### OPTIONAL 12-VOLT/GAS REFRIGERATOR

The gas controls are located at the rear of the refrigerator and are accessible through the lower ventilator in the wall of the vehicle.

## LP GAS OPERATION

### Lighting the Burner

1. Open the lower vent at the rear of the refrigerator, on the outside of the vehicle, and set the 12-volt toggle switch (E) to "OFF." Turn on the gas valve (A) so that its handle (D) is in line with the gas valve body.
2. Turn the gas thermostat knob (B) to setting No. 4.
3. Push in the plunger (C). Wait 5 seconds. Push button (D) several times in succession. A click sound should be heard each time it is depressed. Continue to press in the plunger (C) for a further 15 seconds. After burner lights, release it and check that the burner is lit by looking at the flame through the opening (E). If the burner has not lit, repeat the lighting procedure. The ice-tray shelf should show signs of cooling after about an hour.



REFRIGERATOR CONTROLS

**Note:** If the gas has to be re-lit when the ice-making compartment is still cold, the thermostat knob (B) must first be turned to MAX and return to its normal setting only after the burner is lit. The refrigerator has a flame failure device which will automatically shut off the gas to the burner if the flame is blown out.

### 12-VOLT ELECTRIC OPERATION

For 12-volt operation turn the gas valve handle (D) to "OFF" and flip the 12-volt toggle switch to "ON." Whenever possible, the cabinet should be precooled together with its contents, by starting up and running the refrigerator on gas for several hours, overnight, before switching to 12-volt and starting on a journey. Do not operate the unit on gas while the vehicle is in motion.

The 12-volt cooling capacity of your optional 12-volt/gas refrigerator draws its power from the tow vehicle battery or from an optional battery pack. It cannot be operated from the camper's power converter. It has been properly wired to the charge line coming from your tow vehicle through the pigtail. DO NOT attempt to bypass this system; it could result in serious damage to your refrigerator.

## TEMPERATURE REGULATION SETTINGS

3 or 4 on the thermostat should provide adequate cooling for most conditions.

When the refrigerator is not in use, turn the gas/electric interlock switch to the OFF position.

**Note:** If the refrigerator has been out of use for an extended period, make sure all air vents are free from obstructions and for gas leaks using soapy water.

Never cover or partially cover the air vents with cardboard or anything else.

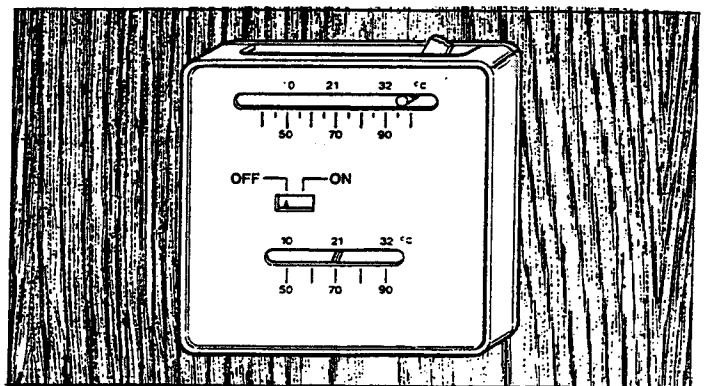
Remember to level the vehicle when stopping for more than about an hour, otherwise the cooling unit could be permanently damaged due to overheating if it is left on.

Keep items to be stored in your RV refrigerator or ice box in your home refrigerator or freezer until you are ready to leave. This will reduce the cooling load on your RV refrigerator or ice box and help keep perishable foods fresh longer. Always store food in sealable containers or suitable wrapping during travel, use the door latch.

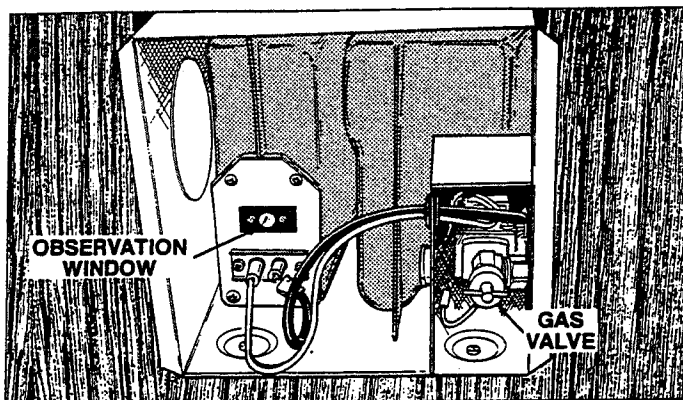
For complete operating and maintenance information of your optional RV refrigerator, please refer to the manufacturer's manual.

## OPTIONAL FURNACE

The RV furnace is an LP gas appliance. Heat is discharged into the unit directly through the furnace grille. To operate the furnace first remove cabinet front. Turn main gas valve control knob to the OFF position. Move OFF lever, located at bottom of thermostat to the right if set on OFF position. Set thermostat above room temperature. A slight delay will occur before the blower starts. allow the blower to run for 5 minutes for combustion chamber purge cycle. After 5 minutes, set thermostat below room temperature. Turn main gas valve control knob to ON position. Set thermostat above room temperature. Allow 30 seconds for ignition to occur after the blower comes on. If burner does not light, repeat previous steps. After main burner ignition, replace cabinet front. To shut down furnace, turn main gas valve control knob to OFF. Set thermostat on OFF.



THERMOSTAT



FURNACE

**Note:** If after 3 attempts with no ignition, go to shut-down and contact a qualified service agency. **DO NOT** continue to cycle furnace through thermostat in an attempt to get ignition.

### CARE OF FURNACE

Your furnace should be inspected before use at least annually by a qualified service agency. Particular attention should be given to the following: combustion chamber, gaskets, soot in vent and main burner. Check your furnace owners manual (supplied with furnace) for more information and before operation of furnace.

### WARNING!

**DO NOT** use catalytic or open flame heaters in your unit. This includes wood and charcoal grills and stoves. The use of this equipment inside the vehicle may cause fires. These devices, either portable or permanently installed, consume oxygen from the interior space and may contaminate the air with toxic fumes which may cause nausea, dizziness or death.

## STORAGE

You should follow these procedures if you will not be using your unit for an extended period.

### LP GAS

Close the LP gas container's Service valve. Extinguish all pilots and close all appliance LP gas valves. Light a range burner to consume any gas remaining in the lines. When the flame burns out, turn the range burner off.

### WATER TANK

Open the water tank drain cock and empty tank. Close the drain cock when the tank is empty.

## ELECTRICAL SYSTEM

Turn off the circuit breaker at the service box.

### EXTERIOR

Store your unit in a garage or other shelter, if possible, or cover with tarpaulin or plastic. Do not allow snow to collect on the roof. If you will not be using your trailer for an extended period, block it up to prevent tire damage.

## WINTERIZATION

Make special preparations for storing your unit in cold winter climates. All systems and components should be inspected and, if necessary, repaired prior to storage.

**Note:** If you will be using your camping trailer during cold weather, be certain to keep the fresh water system drained or use an **approved, non-toxic RV antifreeze** to prevent freeze-ups. Have an LP gas supplier add methanol to your LP gas containers. Consult your authorized Coachmen dealer for more information.

### ICE BOX/REFRIGERATOR

Remove all food from the refrigerator, defrost and wash and dry the inside. Prop the door open so air can circulate.

### CABINETS

Check the staple foods in your cupboards and remove any that could freeze and be damaged. Leave cabinet and closet doors open a little to prevent a musty odor or mildew.

### FRESH WATER SYSTEM

Drain as described in the STORAGE section of this manual, then pour two gallons of non-toxic RV antifreeze into the gravity water fill. This will allow you to winterize the remainder of the fresh water system. Winterize the fresh water system by briefly opening the water faucet and pumping water. Close the faucet when antifreeze flows out. Pour non-toxic antifreeze into kitchen sink.

### \* CAUTION \*

*Do not use automotive antifreeze in the water system. It is poisonous.*

### LP GAS REGULATOR

Cover to keep moisture out of vent. LP gas system should be prepared as described in STORAGE section. Container should have anhydrous methanol added by an LP gas supplier.

## EXTERIOR VENTS

Cover refrigeration and furnace vents with plastic. Inspect roof vent and replace, if necessary.

**Note:** *Never use appliances with vent covers in place.*

## BODY

Clean and wax body; oil locks and hinges. Unit should be stored in a garage or other shelter, if possible, or cover with tarpaulin or plastic. Place unit on wooden blocks or jackstands on a firm, level surface. Tires should be removed, partially deflated and hung on a wall, covered to protect them from sunlight.

## FIRE SAFETY

Prevention is the best form of fire safety. Observe the same precautions in your RV as you do in your home.

Use care with any open flame inside of your unit. Follow the instructions previously listed for the care and maintenance, and operation of the various appliances in your RV.

Make certain everyone in your party is familiar with the emergency features of the unit, the location of exits and the location and operation of fire extinguishers. A chemical fire extinguisher has been furnished with your unit. Check it regularly to be sure it is ready for emergency use. Immediately replace a fire extinguisher that is discharged or partially discharged.

Do not bring or store LP gas containers, gasoline or other flammable liquids inside your RV.

## RV MAINTENANCE

Recreational vehicle owners are noted for the pride they take in the appearance of their units. Proper maintenance will do more than keep your unit looking nice. It can help ensure trouble-free operation and maximum efficiency of the appliance and accessories. Failure to properly maintain the vehicle or its components may also constitute a breach of your warranty obligations. Read the various appliance and component manufacturer's manuals for specific maintenance information.

Unless otherwise noted, maintenance functions should be performed at least annually. All maintenance schedules listed are the minimum requirement; heavy use, unusual temperatures or humidity, or other environmental conditions may require more frequent maintenance. At the start of each season, or after a period of storage, thoroughly inspect and test all systems and components to be certain they are functioning properly before you use your RV.

**Axle and Suspension** system should be inspected frequently; paint and adjust as necessary.

**Body** should be washed to remove dirt, dust, road tar, bird and tree droppings, insects, and other foreign material from exterior surfaces. Use a mild soap in lukewarm water. Apply an automotive-type wax at least once a year.

**Bumpers and Frames** that are painted, or any exposed painted surface, should be inspected for damage and rust. Rust should be removed and bumper and frame painted with rust preventive paint annually.

**Canvas** should be conditioned prior to your first trip. To condition, set up the camper and spray with water. Allow the canvas to dry and then spray again. This will expand the thread inside the stitch holes. Always ventilate and dry the canvas with bows and braces in place, as soon as possible after each exposure to moisture. After every trip, wash dust and dirt, bird and tree droppings, insects and other foreign material from the exterior canvas surfaces. These substances can destroy the canvas' water repellency. Use warm water and a soft bristle brush to remove stubborn stains. Rinse canvas with cool water. Allow the canvas to dry completely before lowering. Mend tears and holes with patching material or cement. Leaks in canvas seams can be repaired by spraying the seam with a quality water repellent, available from your dealer.

### \* CAUTION \*

*Use of sprays (hair, insect, deodorant, etc.) near fabric can destroy fabric finish. NEVER allow spray to come in contact with tent fabric.*

**Counter and Table Tops** should be cleaned periodically with a mild detergent and polished with a product such as Pride or Pledge.

**Electrical System** should be inspected and tested prior to each trip. Check the Shoreline for damage. Test the 120-volt system for proper polarity and voltage. You may want to purchase a ground monitor and a line voltage tester to perform these checks.

**Electric Brakes** should be adjusted after a break-in period of 200 miles. Inspect and adjust brake drums, lining and shoes at the beginning of each camping season or before an extended trip.

**Fabrics** need regular and continuing care. To keep them at their best, vacuum and brush away loose dirt before it becomes embedded and more difficult to remove. Clean spills and stains while fresh.

**Cushions** may be labeled with the voluntary industry cleanability code. Because dyes or backings on some upholstery fabrics will be affected by water or solvents, the cleanability code will indicate the cleaning method that is safe for your fabric. If the furniture is not coded, test the fabric for discoloration on an inconspicuous part of the furniture before spot-cleaning. The code is symbolized by the following letters:



## W

Use only water-based cleaning agents or foam. Mix two tablespoons ammonia or detergent, such as Ajax liquid, with a quart of water. Wipe the stain gently with a clean cloth dampened with the solution. Continue wiping, turning the cloth so that you are always using a clean portion, until the stain is removed. Be careful not to wet the fabric too much. Always wipe from the outer edge of the stain toward the center.

## S

Use only mild, pure, water-free dry-cleaning solvents, such as Energine or Carbona. Dampen a clean cloth with the solvent and follow the same procedure described under W.

## WS

Either of the above methods may be used.

## X

Clean fabric only by vacuuming or light brushing to remove soil. Do not use liquid cleaning agents of any kind.

## TYPES OF STAINS

**Water-Based**—ketchup, soft drinks, milk, etc. Remove using method W.

**Oil-Based**—salad dressing, butter, greasy food, etc. Use method S or, for flat-woven fabrics, not velvet, apply Texize K2R Spot Remover according to directions.

**Combination**—ice cream, gravy, etc. are both watery and oily. Remove these types of stains using the S method and follow with the W method.

**Mud**—lift away what you can easily remove without forcing the mud into the fabric. Allow the remaining mud to dry completely, then vacuum. If the stain remains, clean with method W.

When overall cleaning is necessary, professional cleaners are recommended. However, if you wish to do it yourself, follow these suggestions:

1. Vacuum thoroughly
2. Test fabric for discoloration on an inconspicuous place using a foam cleaner such as Fibre Fresh Concentrate or Glamorene.
3. If no discoloration appears, use cleaner on entire item. *Note:* Many velvet fabrics cannot be cleaned with water-based cleaning agents.
4. After cleaning, you may wish to apply Scotch-guard fabric protector to such areas as furniture arms, backs and cushions.

**Note:** The above information is provided only as a service and should not be interpreted as a warranty. The list of cleaning agents does not constitute an endorsement of products; other similar products may be equally effective.

**Floor Coverings** should be cleaned as necessary. Vacuum carpeting. Avoid using heavy moisture; it could enter and damage your floor.

**Hinges** should be inspected and lubricated with light household oil periodically.

**Hitch Ball** (latch, coupler) should be inspected prior to each trip and lubricated every 90 days.

**Tongue Jack** (manually operated) should be inspected prior to each trip and lubricated every 90 days. Periodically apply a small amount of WD-40 or similar lubricant at friction points of jacks.

**Locks and Latches** should be inspected and lightly lubricated with graphite at least annually.

**LP Gas** system should be inspected and adjusted as outlined in LP GAS section of this manual. Be certain mounting supports for tanks and bottles are secure. Before using, be sure all LP gas orifices and vents are clean.

**LP Gas Line Check** should be performed frequently. Always check the gas line connection after each refill and inspect the connections regularly, at least every 30 days or 5,000 miles of travel. To check, turn off all burners. Open the LP gas bottle Service valve and use an approved LP leak detector solution to test all line connections. Do not use products that contain ammonia or chlorine. Bubbles indicate a leak. Tighten the connection with two open end wrenches until bubbles stop. If leak persists, contact your dealer.

**Lug Nuts** should be checked every 50 miles for the first 200 miles or whenever a wheel has been reinstalled. If lug nuts continue to loosen, they should be replaced. Be certain to use the proper torque (75 to 85 ft/lbs.)

**Pigtail Contacts** should be inspected and coated with WD-40 every 90 days.

**Lift System** should be checked periodically. The telescoping arms of the crank lift system should be lubricated with silicone spray. The bolts in the multiplex system should be checked for tightness.

**Roof** seals around all extrusions, handles, lights, center seams, etc. should be checked frequently. Reseal as necessary with a silicone sealer. With expansion and contraction from weather and use, these seals need to be maintained or damage to your roof from water will result.

**Safety Chains** should be inspected for damage prior to each trip; replaced if weakened.

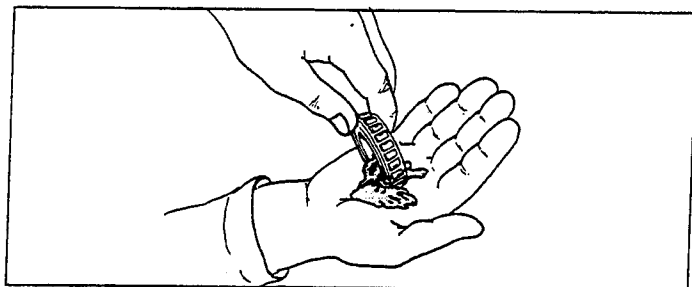
**Vents** should be inspected and cleaned annually; lightly oil all moving parts.

**Wheel Bearings** lubrication should be checked at the beginning of each camping season or before an extended trip. Inner and outer bearings should be packed with a lithium-based multi-purpose, extreme pressure NLGI No. 2 grease. Apply a small amount of grease directly to the bearing by using the following method.

Work the grease into the bearing until the bearing is completely filled. The technique used is to push a segment of the bottom (the wider end) of the bearings into the outer edge of the grease pile nearest to your thumb. Keep doing this until the bearing interior is completely filled, and the grease oozes out from the top and from

between the rollers. Then rotate the bearing to repeat this operation on the next segment. Keep doing this until you have the entire bearing completely filled with grease. Before installing bearing, place a light coat of grease in the bearing cups. Check for damage to rims and hubs.

**Note:** DO NOT overfill the hub cavity with grease. Excessively packed wheel bearings may overheat, depriving the bearings of lubrication and causing premature failure.



**PACKING WHEEL BEARING**

**Wood Cabinetry** should be protected and cleaned several times a year using any good non-silicone wood polish. Careful control of temperature and humidity will help reduce expansion and shrinkage of doors and door panels. If shrinkage occurs and unfinished parts of the door panels are exposed, cover the exposed areas with matching touchup stain available from your dealer.

## Appendix A ✓ Pre-Travel Check

### GENERAL DRIVING CHECKS

For your safety, make certain that the following items have been checked and rechecked before you take your RV unit on the road. Make certain that all items inside of your RV unit are secured. As you travel, these items (if not secured) may become damaged or may damage the interior of your unit.

**Three-way Tongue Jack**—The jack must be raised as far as possible or removed and stored.

**Lights**—The following lights should be tested on both the RV and the tow vehicle: brake lights, warning lights, flashers, clearance lights, turn signals, taillights and tow vehicle headlights. Be sure interior lights are turned off before lowering the roof to prevent damage to the canvas during transit.

**Hitch**—Inspect the hitch to be sure it has not loosened.

**Pigtail**—The pigtail should be connected properly to the tow vehicle's electrical harness.

**Rearview Mirrors**—Adjust the rearview mirrors so that the driver can see the right and left sides of the unit.

### OTHER DRIVING CHECKS

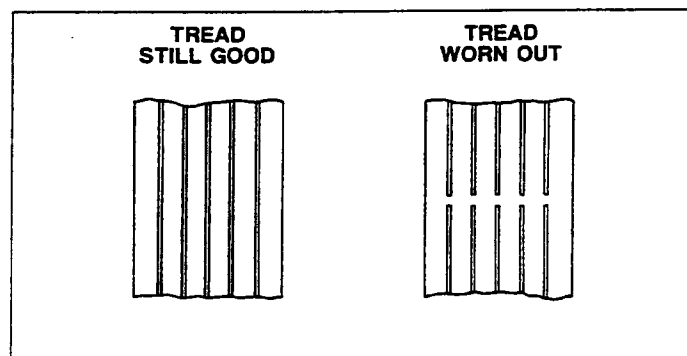
Whether you are departing from your home, rest area or campsite, you should check the following parts of your RV before you take off.

**Tires**—Before each trip, check your tires for uneven wear, road damage, foreign objects or excessive peeling or bulging. Each morning, inspect the condition and pressure. Heat generated by surface friction will increase the tire's air pressure approximately six to nine psi; therefore, do not bleed air out of a hot tire. Inflate the tire to the recommended pressure (indicated either on the tire or in the manufacturer's instruction booklet).

**Note:** *Proper tire inflation is extremely important.*

A tire should be replaced when:

1. It is worn to 1/16-inch depth in two or more adjacent grooves.



TREAD WEAR INDICATOR

2. It is worn to the level of the tread indicators that are molded into the bottom of the tread grooves, or

3. The indicators appear in two or more adjacent grooves at three locations around the tire.

On new tire purchases, be certain that the new tire is the same size as the old tire and that the new tire has the same ply rating and load range as the old one. DO NOT mix radial-ply tires with bias or bias-belted tires.

**To Change Tires** (in the event of a FLAT or WORN tire), turn on tow vehicle's hazard warning flashers. Set up flares or warning lights. Put a chock under the opposite tire and unhitch the trailer from the tow vehicle. Place a scissors-type or hydraulic jack on a block of wood directly UNDER THE FRAME close to the tire you intend to change. DO NOT use a bumper jack; it could damage the sidewalls or floor board. Raise the jack to take some of the weight off the tire. Depending on model, you may have to remove a wheel cover. Loosen the lug nuts. Raise the jack until the tire clears the ground, then remove the lug nuts. Pull off the old tire and put the spare tire on the hub. Replace and tighten lug nuts. Lower the jack until the tire just touches the ground. Tighten the lug nuts to a torque of 75 to 85 ft/lbs. Lower and remove jack. Stop at the nearest service station and have the torque checked and spare tire air pressure checked. You might have to replace the lug nuts after changing tires five times. These nuts could lose their self-locking feature after that many changes.

**Wheel Lugs**—Wheel lugs must be tightened every 50 miles for the first 200 miles whenever a wheel has been reinstalled. Thereafter, check lugs after storage.

**Power Cord**—The 120-volt Shoreline power cord must be unplugged from the external source and placed into its compartment. The cord hatch must be secured before you travel.

**Water Fill Hose(s)**—All hoses must be disconnected and all hose caps must be secured before you travel.

**Canvas** on your camping trailer should be conditioned before your first trip. Set up the camper and spray with water. Allow the canvas to dry and then spray again. This will expand the thread inside the stitch holes. While camping, a leaky seam may be sealed by rubbing it with candle wax. Be sure canvas is dry before closing camper.

**Upper Door** must be disengaged from the lower door and secured by the ceiling turn buttons.

**Refrigerator or Ice Box Door** should be secured with the travel latch.

**Flip-over Galley Cabinet** must be lowered and hand pump screwed down securely to avoid interference with the bunk tray.

**Bunk Trays** must be pushed in. Store bunk support rods and bunk bows.

**Exterior Access Doors and Hatches** for storage and equipment should be closed and locked.

**Step** must be stored for traveling. Lift outer edge of step and unhook, fold and store (Figure 13, Page 35).

**Roof** should be lowered and the latches secured.

**Boat Rack**—If you unit has a boat rack, the weight of the boat is not to exceed 135 lbs. Place the boat, with the bow facing forward, upside down on the boat rack and lash down securely so boat will not shift, causing damage to the rack. DO NOT attempt to raise the roof with the boat on the rack.

**Vents** should be closed and secured.

**LP Gas Bottles**—LP gas bottles and connections should be secured.

**Note:** *Some states prohibit vehicles equipped with LP gas bottles from using tunnels. A few other states prohibit traveling with the Service Valve open and the pilots lit. Check the regulations of the state through which you intend to travel.*

**Stabilizing Jacks** should be removed and stored.

**Safety Chains** must be properly attached to the tow vehicle.

**Door** should be locked.

## Appendix B Travel Preparation Checklist

### CLOTHING

- Underwear
- Socks
- Shoes, sandals, boots
- Shirts
- Blouses
- Trousers
- Slacks
- Dresses
- Shorts
- Sweaters
- Jackets
- Coats
- Rainwear
- Swim wear
- Pajamas

### TOOL CHEST

- Screwdrivers
- Pliers
- Hammers
- Tire pressure gauge
- Small level
- Electrical tape
- Masking tape
- Wrenches
- Allen wrench
- Furnace duct tape

### CAMPSITE COMFORT

- Dishwashing soap
- Dishcloths
- Dishtowels
- Garbage/trash bags
- Mop
- Broom
- Vacuum cleaner
- Dust pan
- Paper towels
- Foil or plastic wrap
- Throw rug

### SAFETY

- First-aid kit
- Flares
- Reflectors
- Tow rope and/or chain

### ADDITIONAL TOOLS

- Hatchet
- Shovel
- Saw
- 12-volt portable tire pump

### SLEEPING GEAR

- Sheets
- Pillow cases
- Mattress pads
- Blankets
- Pillows
- Sleeping bags

### PERSONAL COMFORT

- Towels
- Washcloths
- Toilet paper
- Soap
- Toothbrush
- Toothpaste
- Personal toiletries
- Scissors
- Sewing kit
- Ash trays

### MEAL PREPARATION

- Bottle opener
- Can opener
- Matches
- Pots, pans, skillets
- Plates
- Glasses and cups
- Silverware
- Hot pads
- Knives, spatula, etc.
- Baking pans
- Coffee maker
- Toaster
- Plastic containers

### ENTERTAINMENT

- Books/magazines
- Binoculars/telescope
- Camera, film, flash
- Tape player/tapes
- Toys/games
- Playing cards
- Television
- Radio

### MISC. EQUIPMENT

- Bucket
- Fuses
- Fresh water hose
- Y-type water hose fitting
- Flashlight
- 20-ft. 3-prong power cord
- 3-prong adapter with ground-ing wire
- Wheel chocks, leveling ramp, blocks or jack stands
- Coat hangers
- Folding lawn chairs

# Appliance Identification Form

Should your unit or one of the appliances require warranty service, you will have to identify the manufacturer, model designator and serial number. Fill in this form as soon as possible. It will help you meet identification requirements. Depending on your unit, certain items listed below may not be offered as either optional and/or standard equipment.

EQUIPMENT	MANUFACTURER Coachmen	MODEL DESIGNATOR	SERIAL NUMBER
Camper	_____	_____	_____
Furnace	_____	_____	_____
Range	_____	_____	_____
Converter	_____	_____	_____
Refrigerator	_____	_____	_____
Door Key	_____	_____	_____
Exterior Storage Compartment	_____	_____	_____

## ELECTRICAL SPECIFICATIONS

### PIGTAIL COLOR CODE

White	—	Ground
Brown	—	Right Stop and Turn
Red	—	Left Stop and Turn
Blue	—	Brakes
Orange	—	Converter

### HITCHBALL HEIGHT

160 with 8" tires	—	13½"
165 with 12" tires	—	15½"
190 with 12" tires	—	15½"
220 with 12" tires	—	15½"
220 with 13" tires	—	15½"
230 with 12" tires	—	15½"
230 with 13" tires	—	15½"
232 with 13" tires	—	15½"

### BALL DIA.

2"
2"
2"
2"
2"
2"
2"
2"

### FUSES

Interior — 10 AMP Fuse or 6 AMP Fuse

### TIRES

5.70 x 8 (B) Load Range 50 psi  
 5.70 x 8 (C) Load Range 75 psi  
 4.80 x 12 (B) Load Range 60 psi  
 4.80 x 12 (C) Load Range 90 psi  
 5.30 x 12 (C) Load Range 80 psi  
 ST175/80D 13 (C) Load Range 50 psi

### LIGHT BULBS

Clearance	—	#57
Taillights	—	#1157 Deluxe
Taillights	—	#1141 Deluxe
Interior	—	#1141

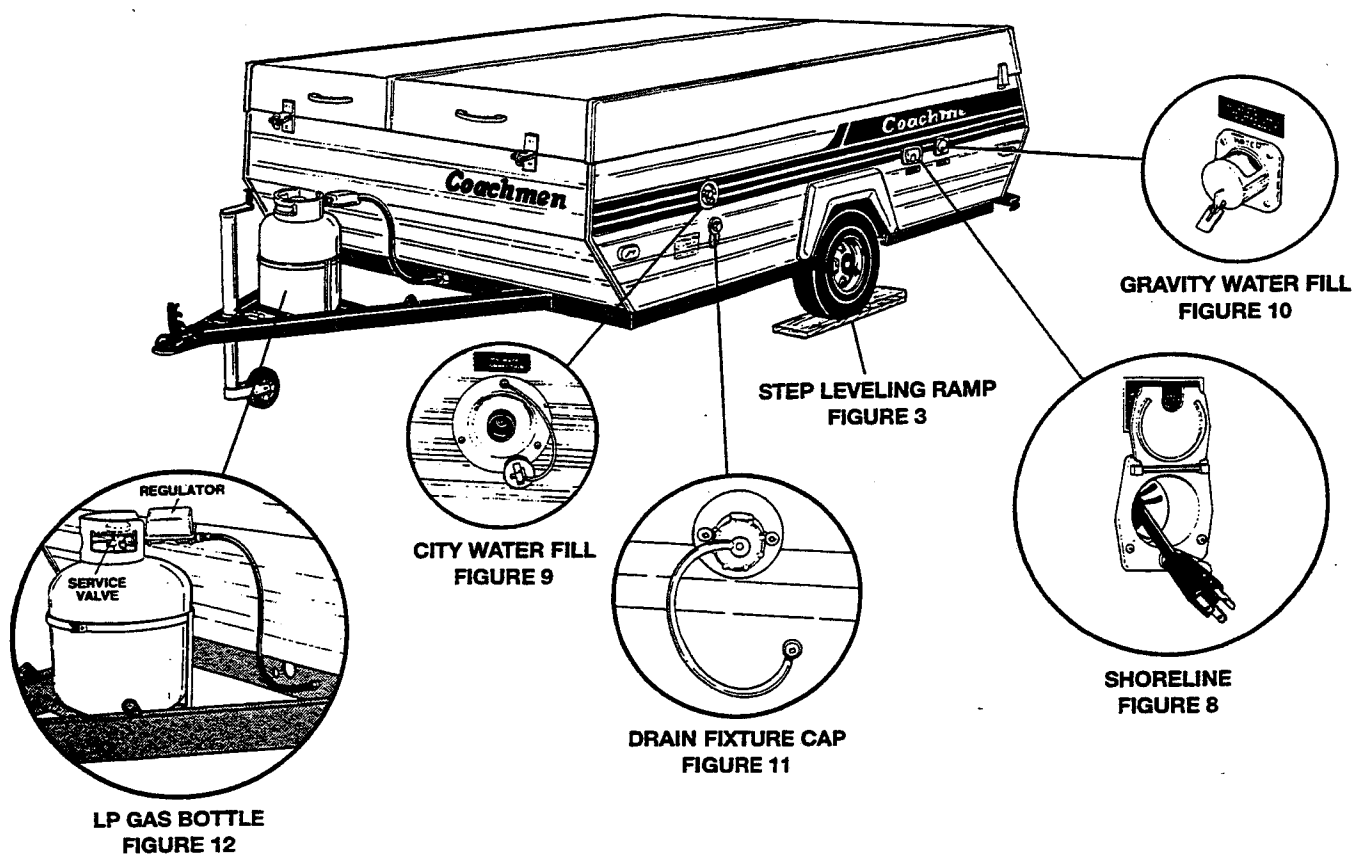
## Travel Record

[illegible]



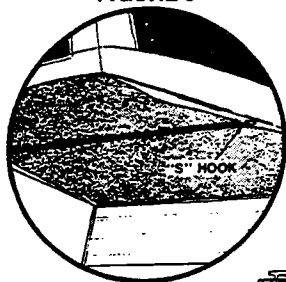
## Maintenance Record

[illegible]

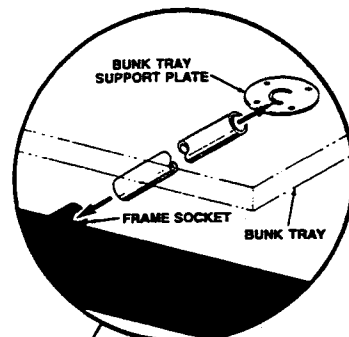


# COACHMEN CAMPING TRAILER

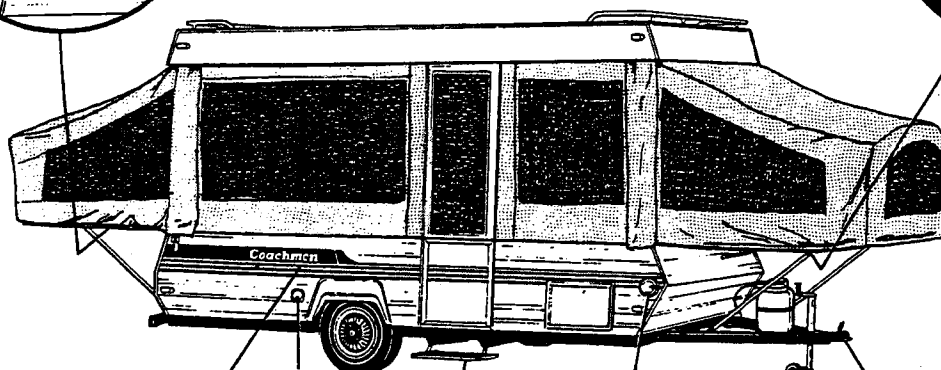
SHOCK CORD  
FIGURE 6



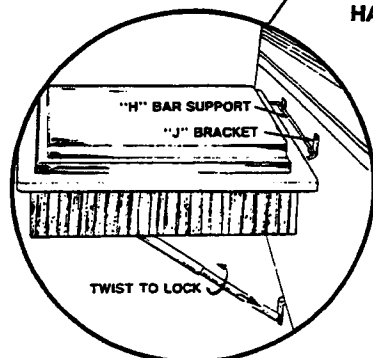
BUNK TRAY  
SUPPORT PLATE



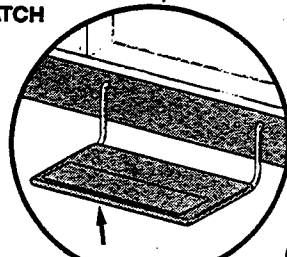
BUNK SUPPORT  
PLATE  
FIGURE 5



LP GAS  
CONNECTOR  
HATCH



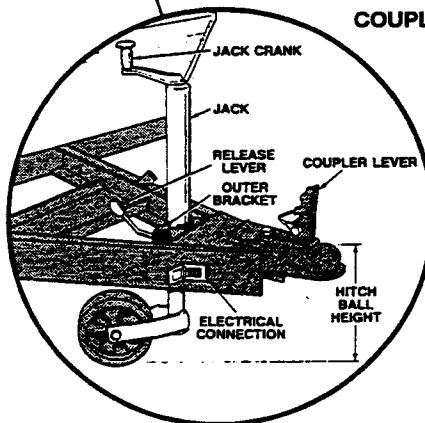
OUTDOOR STOVE  
SET-UP  
FIGURE 7



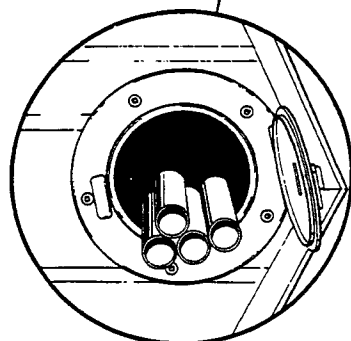
STEP  
FIGURE 13



COUPLER ADJUSTMENT  
NUT  
FIGURE 2

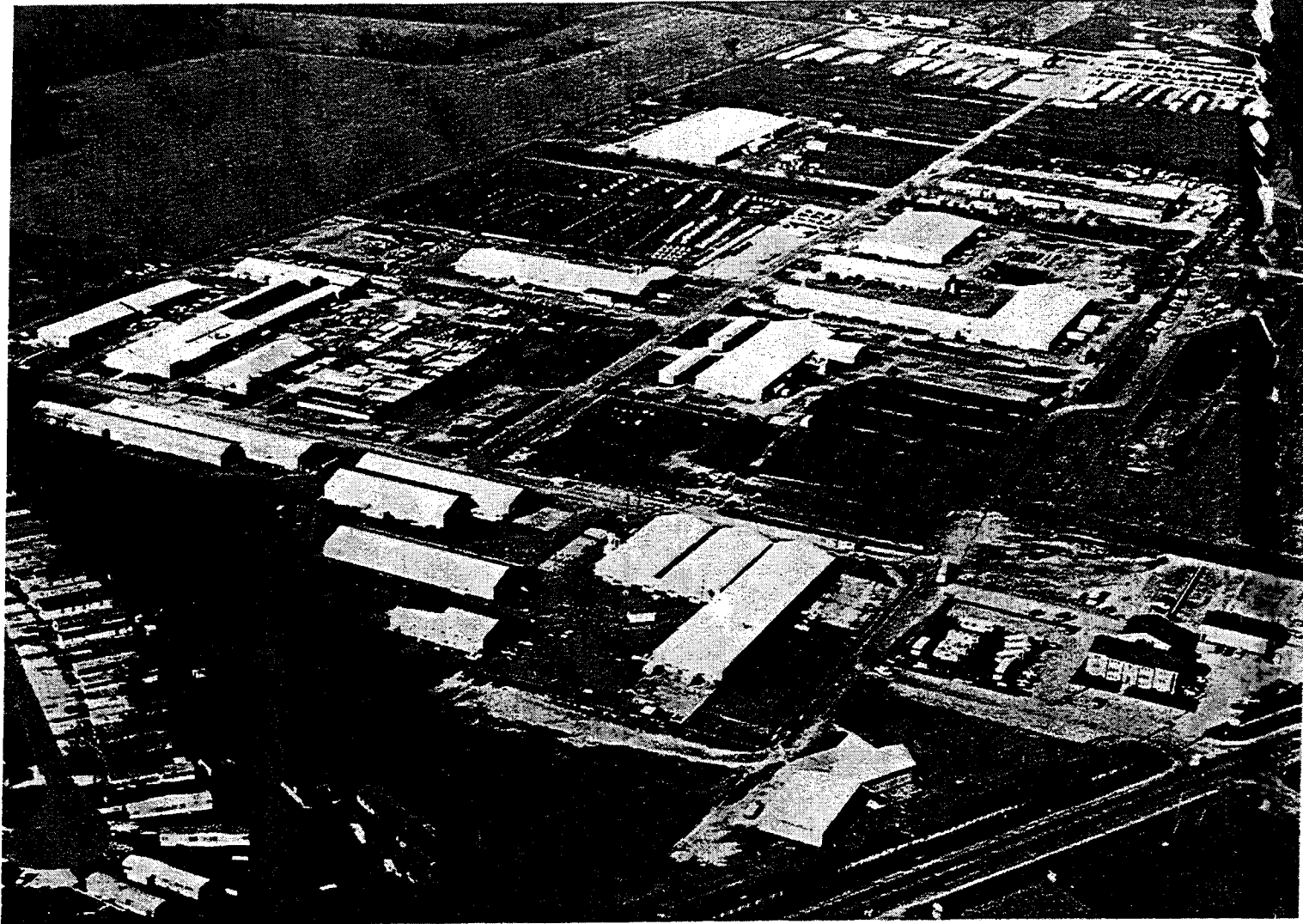


THREE-WAY TONGUE JACK  
FIGURE 1



BUNK SUPPORT RODS  
STORAGE  
FIGURE 4

VEHICLES SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY: SOME ITEMS SHOWN ARE NOT AVAILABLE ON CERTAIN MODELS AND MAY BE OPTIONAL ON OTHERS.



Coachmen Industries, Inc. was founded in Middlebury, Indiana, in 1964 by Claude, Keith and Tom Corson. The three brothers recognized business opportunities in the new and growing recreational vehicle (RV) industry and tried to combine their business experience in finance, marketing and manufacturing.

Their confidence in the RV industry was well founded. From first-year production that included 12 travel trailers, one pick-up truck camper and 80 truck caps, the

Company has become a diversified, full-line manufacturer of recreational vehicles under many well-known brand names with well over 449,000 units manufactured. The Company's RV product line includes travel trailers, fifth wheel trailers, motorhomes, truck campers, camping trailers and van conversions.

The Coachmen RV complex includes 120 acres with 588,000 square feet of assembly facilities under roof.



**Coachmen®**

**RECREATIONAL VEHICLE CO.**

**P.O. Box 1000**

**Middlebury, Indiana 46540**

The Coachmen recreational vehicles described in this manual incorporate components produced by Coachmen Industries, its divisions, and various other suppliers. During the product year, Coachmen may decide to produce units with different components and/or specifications than initially scheduled. All such

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