2022 Trillium Heritage Camper Owner's Manual

1300 & 4500 Models

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All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication approval. When new materials and production techniques are developed that can improve the quality of its product, or material substitutions are necessary due to availability, L'air Camper Co. reserves the right to make such changes.

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INTRODUCTION

The Owner's Manual for your new Trillium Camper is designed to respond to the most frequent inquiries regarding the operation, function, and care of the many systems that make trailer camping easier.

L'air Camper Co. realizes our customers possess varying degrees of expertise in repairing and maintaining the equipment in their trailer. For this reason, the service information found in this manual is directed toward those with average mechanical abilities.

We also realize that you may be more familiar with one area than you are with another. Only you know your capabilities and limitations. We want you to use this manual and hope you will find the information contained in it useful. However, should you ever feel that you may need assistance, please consult your L'air dealer for advice on repairs that may be required.

A brief explanation of the operation of the appliances such as refrigerator, furnace, water heater, and others, are explained in this manual. However, you will also find the original equipment manufacturer's information, warranty and manual supplied in a packet included with this manual to be more detailed.

All information, illustrations, and specifications contained in this manual are based on the latest product information available at the time of publication approval. If new materials and production techniques are developed that can improve the quality of its product, or material substitutions are necessary due to availability, L'air Camper Co. reserves the right to make such changes.

Optional items may be available on all, or some models. Additionally, some optional items can only be included during the manufacturing phase and cannot be added to the trailer at a later date.

By including information on optional items in this manual, L'air Camper Co. does not imply or suggest the availability, application, suitability, or inclusion for any specific unit.

Many important safety messages are provided in this manual. Always read and obey all safety messages.

DANGER indicates an imminently hazardous situation, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury to persons.

CAUTION is used to advise caution when performing actions that could result in minor or moderate injury to persons and/or damage to equipment.

NOTE

NOTE is used to address practices not related to personal injury. This applies to hazardous situations involving property damage only

Owner Information Packet

The Owner Information Packet contains the Owner's Manual and operator's manuals and registration cards for several other individual components of your new Trillium RV.

It is critical that you register and activate each component warranty within the prescribed time limits to avoid loss of warranty coverage.

Some component manufacturers offer warranties beyond the L'air Camper Co. Limited Base and Structural Warranty.

Other components are warranted separately and exclusively by the individual component manufacturer, and are therefore excluded from our Limited Base and Structural Warranties.

BEFORE using your RV, it is important that you read and understand the information in this manual and your Owner Information Package.

Manufacturing Certification

We build all L'air Camper Co. travel trailers to meet or exceed the thorough manufacturing and safety codes, standards, and regulations of the Recreational Vehicle Industry Association (RVIA) which uses the NFPA 1192 standard and of the various provinces of Canada, some of which require the CSA Z-240 standard.

Both RVIA and Transport Canada conduct frequent random audits to confirm our RVs are manufactured to U.S. (RVIA) and Canadian (CSA) standards.

The RVIA or CSA Group label found on the sidewall next to the entry door confirms that your RV has been constructed to meet or exceed these codes and standards.

RVs built for sale in Canada may differ to conform to Canadian codes.

Purchaser's Responsibilities

IMPORTANT: The purchaser is required to read this document prior to signing it.

The checklist below, in addition to the individual component and owner's manuals, is designed to assist you in becoming familiar with your new recreational vehicle. You, the purchaser should not sign this form until:

1) you have had the opportunity to fully inspect the entire camper;
2) you have reviewed, read, and understand the limited warranty terms;
3) you find the camper acceptable, complete, clean, and free of damage;
4) all features and components have been demonstrated and explained to you;
5) the dealer has answered any questions you may have regarding the camper.

I received and read a copy of the L'air Camper Co. Limited Warranty before completing my purchase of the camper and agree to the terms and conditions contained therein.

I acknowledge that certain appliances and components are warranted by their respective manufacturers and are excluded from the Limited Warranty.

I also understand the selling dealer is not an agent for L'air Camper Co., but is an independent entity with no authority to make any promises or representations for or on behalf of L'air Camper Co.

I acknowledge this form is for product registration purposes and failure to return this form does not reduce the warranty period.

Purchaser Signature: _____

Ongoing Responsibilities:

1) As the owner, you have the responsibility to properly maintain your camper. Be sure you have service performed in a timely manner. Don't ignore a problem; sometimes a phone call is all that's needed. The service technicians will advise you if an appointment needs to be scheduled.
2) Familiarize yourself with your camper. Observe all the component manufacturers instructions regarding the use and service of their products
3) Complete and return all the warranty cards to each respective manufacturer. Doing so may help you avoid the loss of warranty coverage.

NOTE: Modifications to your camper, without written authorization from L'air Camper Co., could result in reduction or loss of warranty coverage. Contact your dealer before making such changes.

Purchaser's Responsibilites (continued)

NOTE: L'air Camper Co. wants you to have the best possible adventure with your new camper. To get the most enjoyment out of your new camper and to ensure you fully understand how it operates, please discuss with your dealer, any questions or concerns you may have regarding your camper, before leaving the dealership or using your camper for the first time.

NOTE: Use your new camper responsibly. Your camper was not designed to be used as a permanent dwelling but for short term and recreational use. If you intend to use your camper as permanent housing, be advised that it could cause premature wear on your appliances, furnace, water systems, carpet, drapes, upholstery, bedding, and interior surfaces. Premature wear caused by permanent residency may be considered abnormal or abusive use and could reduce or in some cases, void your warranty coverage.

This Owner's Manual is designed as a Quick Reference Guide for the operation and care of your new purchase. For more complete instructions regarding safety, maintenance and operation of the items used in the manufacturing of your RV, carefully read the booklets supplied by the component manufacturers. All information contained in this manual may not relate to your specific model; however, booklets supplied by the component manufacturers and included in your Owner's packet will provide any additional information needed.

Your dealership personnel should be able to answer any questions or concerns you may have regarding your new product. If your dealer is unable to do so, please feel free to contact our Customer Service department for assistance. Your dealership will provide you with the appropriate contact information.

Please carefully read the Limited Warranty in this manual. L'air Camper Co. has no other expressed or implied warranties of any type. You, as the owner, are responsible for providing proper maintenance as outlined in the manual and as set forth in the component manufacturer's booklets.

NOTE:

FAILURE TO PROPERLY MAINTAIN YOUR RV COULD

RESULT IN LOSS OF WARRANTY COVERAGE.

Several of our component manufacturers carry their own warranties and require separate warranty information to be filed with them. Please read all component manufacturers' owner's manuals provided with your RV and file appropriate individual warranty cards as required.

Welcome to the L'air Camper family!

Being mindful of these few responsibilities as you begin making great memories with your new L'air camper will ensure that you will have many trouble free, exciting and adventurous years of camping.

SAFETY

We have provided many important safety messages in this manual. While these messages are plentiful, they are not exhaustive, so keep common sense in mind.

Please read and follow the safety messages carefully.

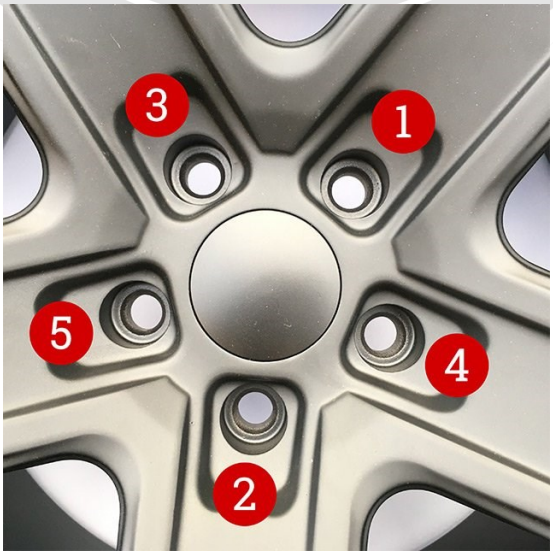
Towing

It's important to load personal cargo so that Gross Axle Weight Rating is never exceeded. For safety's sake, you should weigh your family camping vehicle frequently as loaded for travel. We cannot emphasize too strongly that the Gross Vehicle Weight and Axle Rating must not be exceeded. Overloading is a safety hazard. Properly distributed cargo will also result in efficient, trouble free towing.

⚠ WARNING
Sway or fishtailing is the sideways action of a trailer caused by external forces. Excessive sway of your trailer can lead to the rollover of the trailer and tow vehicle, resulting in serious injury or death. A light tongue weight or heavy weight placed at the rear end of the trailer may cause trailer sway. You will find additional information in the Section on Towing.

Lug Nut Torquing

Making sure lug nuts on trailer wheels are tight and properly torqued is an important responsibility that trailer owners and users need to understand and practice. Inadequate and/or inappropriate wheel nut torque (tightness) is a major cause of lug nuts loosening in service. Loose lug nuts can rapidly lead to a wheel separation resulting in potentially serious safety consequences. Nuts should be tightened in the order as shown in the image below:



Tire Safety

Properly maintained tires improve stopping, traction, and load-carrying capability of your vehicle. Refer to section 10 on Tires in this Owner's Manual for additional tire maintenance and safety information. There is also manufacturer's information for the tires and rims included in the New Owner Packet.

⚠ WARNING

DO NOT mix different types of tires on the same vehicle such as radial, bias and bias-belted tires except in emergencies because vehicle handling and tire life may be seriously affected and may result in loss of control or tire failure.

Transporting of Passengers

⚠ DANGER

DO NOT ALLOW PASSENGERS TO RIDE IN THE TRAILER DURING TRAVEL.

THE TRAILER DOES NOT HAVE SEAT BELTS AND IS NOT DESIGNED TO CARRY PASSENGERS. THIS MAY ALSO BE PROHIBITED BY PROVINCIAL OR STATE LAW.

Tow Vehicle Disclaimer

In connection with the use and operation of L'air Camper Co. recreational vehicles, L'air customers and owners of L'air recreational vehicles are solely responsible for the selection and proper use of tow vehicles. All customers should consult with a motor vehicle manufacturer or dealer concerning the purchase and use of suitable tow vehicles for L'air Camper Co. products. L'air further disclaims any liability with respect to damages which may be incurred by a customer or owner of L'air recreational vehicles as a result of the operation, use or misuse of a tow vehicle.

NOTE: L'AIR'S LIMITED WARRANTY DOES NOT COVER DAMAGE TO THE RECREATIONAL VEHICLE OR THE TOW VEHICLE AS A RESULT OF THE OPERATION, USE OR MISUSE OF THE TOW VEHICLE.

Appliances and Equipment

The appliances (stove, refrigerator, outdoor grills, etc.) and equipment (water heater, furnace generator, etc.) typically operate on propane. Propane is flammable and is contained under high pressure. Improper use may result in a fire and/or explosion. Be sure to follow all instructions and warnings in this manual (see Chapter 7) as well as the specific owner's manuals of the appliances and equipment.

Ventilation

To reduce or lessen exposure to chemicals from off- gassing, it is of utmost importance that you ventilate your recreational vehicle. Ventilation should occur frequently after purchase and at times when the temperatures and humidity are elevated. Remember, off-gassing is accelerated by heat and humidity.

Ventilation to dilute the indoor air may be obtained from a passive or mechanical ventilation system. Always be sure to thoroughly ventilate your recreational vehicle before and during each use. Open windows, exhaust vents, and doors. Operate ceiling and/or other fans, roof air conditioners, and furnaces, and use a fan to force stale air out and bring fresh air in. Decreasing the flow of air by sealing the recreational vehicle increases the level of formaldehyde and other contaminants inside the RV.

Formaldehyde

While L'air Camper Co. makes every effort to use low formaldehyde emitting components, some of the materials used in your recreational vehicle emit formaldehyde. Eye, nose, and throat irritation, headache, nausea, and a variety of asthma-like symptoms, including shortness of breath have been reported as a result of formaldehyde exposure. Reaction to formaldehyde exposure may vary among individuals. Elderly persons and young children, as well as anyone with a history of asthma, allergies, or lung problems may be at greater risk. Research is continuing on the possible long-term effects of exposure to formaldehyde. Inadequate ventilation may allow formaldehyde and other contaminants to accumulate in indoor air.

⚠ WARNING

Formaldehyde levels in the indoor air can cause temporary eye and respiratory irritation and may aggravate respiratory conditions or allergies.

⚠ WARNING

This vehicle, like other vehicles, may contain small amounts of one or more substances which are listed by the state of California for causing cancer or reproductive toxicity.

Medical Advice

Should you have questions regarding the effects of formaldehyde on your health, we recommend that you contact your doctor or local health department.

⚠ DANGER

IF YOU SMELL GAS:

1) Shut off the gas supply at the tank valve(s) or gas supply connection and extinguish all open flames, pilot lights, lanterns and smoking materials.
2) DO NOT touch electrical switches.
3) Open the windows and exit the unit leaving the door open. Stay out of the unit until the odor clears.
4) Have the propane system checked immediately and the cause of the leak corrected before using the system again.

Propane, Carbon Monoxide Detectors, and Smoke Alarms

Your travel trailer was designed and built to meet all applicable standards in effect on the date of manufacture for normal recreational use. For your safety a combination propane/carbon monoxide detector and a smoke detector have been installed in the RV.

Propane/Carbon Monoxide Alarm (Propane alarm only on models equipped with propane systems.)

Since propane is heavier than air, the propane/carbon monoxide detector has been mounted near the floor, beneath the fridge. Test the detector after the trailer has been in storage, before each trip, and once a week during use. Follow the test procedure recommended in the manufacturer's operating instructions.

The propane/carbon monoxide detector is wired directly to the 12 volt system of your trailer. It will function properly whenever 12 volt power is available from the tow vehicle through the 7-way power cord, the RV battery, or when the converter is energized through the 120 volt shoreline. For protection in all circumstances (i.e. dry camping) a fully charged RV battery must be properly installed.

Please read the propane/carbon monoxide detector Owner's Manual included in your L'air Owners Packet. It contains details on testing and caring for this important safety device.

⚠ WARNING
Failure to replace this product by the "REPLACE BY DATE" printed on the alarm cover may result in death by Carbon Monoxide poisoning. Replace By Date is five (5) years from the date of manufacture.

LPG is a mixture of gases produced and sold commercially as a fuel for heating and cooking appliances. LPG is highly flammable and, as a result, can be explosive if ignited under certain circumstances. LPG is heavier than air and, if confined in a closed space, will accumulate close to the floor. The LPG detector is designed to alarm at less than 25% of the legal explosive limit. It will provide a visual and audible alarm by sounding an alarm every 5 seconds and illuminating the red LED.

NOTE: The Red LP Gas LED will Flash and the alarm will sound a steady tone whenever a dangerous level of propane gas is detected. **IMMEDIATE ACTION IS REQUIRED**.

⚠ WARNING

Activation of the propane alarm indicates the possible presence of LPG, which can cause an explosion and/or fire, causing serious injury or death. This normally indicates a leak in the LPG installation or an LPG appliance. Extinguish all open flames, open your windows and door, and evacuate the unit immediately. Do not activate any electrical switch. Turn off the LPG at your gas tank(s). Do not re-enter your unit until a qualified repair technician has corrected the problem and certified the system as safe.

Carbon Monoxide (CO) is a highly poisonous gas that is released when fuels are burned. It is invisible, has no smell, and is therefore, very difficult to detect with the human senses. Under normal conditions, in a room where fuel-burning appliances are well maintained and correctly ventilated, the amount of CO released into the room by appliances is not dangerous.

These fuels include: wood, coal, charcoal, oil, natural gas, gasoline, kerosene, and propane. Common appliances are often sources of CO. If they are not properly maintained, are improperly ventilated, or malfunction, CO levels can rise quickly. CO is a real danger in air-tight trailers with added insulation, sealed windows, and other weatherproofing that can trap CO inside.

NOTE: The Red CO LED will flash and the alarm will sound 4“BEEPS” then silent for 5 Seconds.These signals indicate that the CO level is over 35 ppm. **IMMEDIATE ACTION IS REQUIRED.**

Everyone is at risk for carbon monoxide poisoning! Particularly sensitive are children, pregnant women, the elderly and people with lung or heart disease or anemia! Carbon monoxide (CO) is an odorless, colorless gas that prevents the blood from carrying oxygen to vital organs.CO is 200 times more likely to replace oxygen in the blood.

⚠ DANGER

Activation of your Carbon Monoxide alarm’s audible horn indicates the presence of Carbon Monoxide that can kill you. Leave the area immediately!

Symptoms of Carbon Monoxide Poisoning

- Mild Exposure - Slight headache, nausea, vomiting, fatigue (flu-like symptoms).
- Medium Exposure - Throbbing headache, drowsiness, confusion, fast heart rate.
- Extreme Exposure - Convulsions, unconsciousness, heart and lung failure. Exposure to carbon monoxide can cause brain damage and/or death.

⚠ WARNING

Many causes of reported CARBON MONOXIDE POISONING indicate that while victims are aware that they are not well, they become so disoriented that they are unable to save themselves by either exiting the area or calling for assistance. Also young children and pets may be the first to be affected.

Follow the alarm procedures for your country. The emergency number depends on your travel location.

PROCEDURES TO TAKE DURING A CO ALARM IN CANADA
⚠ WARNING
Actuation of this device indicates the presence of carbon monoxide (CO) and propane gases which can KILL YOU. If signal sounds (4 beeps and flashing or solid red light: 1) Operate the Test/Mute.Immediately move to fresh air -outdoors or by an open door/window. Check that all persons are accounted for. Do not reenter the premises or move away from the open door/window until the emergency responders have arrived, the premises have been aired out, and your alarm remains in its normal condition; 2) call your emergency local service (telephone number _____) (Fire department or 911).

PROCEDURES TO TAKE DURING A CO ALARM IN THE U.S.A.
⚠ WARNING
Actuation of this device indicates the presence of carbon monoxide (CO) or propane gases, which can KILL YOU. If signal sounds (4 beeps and flashingor solid red light): 1) Operate the Test/Mute button; 2)Call your emergency local service (Phone Number _____) (fire department or 911); 3)Immediately move to fresh air -outdoors or by an open door/window. Check that all persons are accounted for. Do not reenter the premises or move away from the open door / window until the emergency responders have arrived, the premises have been aired out and your alarm remains in its normal operation. 4) After following steps 1-3, if your alarm reactivates within a 24-hour period, repeat steps 1-3 and call a qualified appliance technician (Phone Number _____) to investigate for sources of CO from fuel burning equipment and appliances, and inspect for proper operation of this equipment. If problems are identified during this inspection have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturers' instructions, or contact the manufacturer directly, formore information about CO safety and this equipment. Make sure that the motor vehicles are not, and have not been, operating in an attached garage or adjacent to the residence.

Smoke Alarm

A smoke alarm is provided with your trailer. A manual pertaining to the alarm is included in the Owner Packet given to you at the dealership. Please read and follow all care, maintenance, and safety information contained in the smoke alarm manual.

The smoke alarm will beep once a minute for at least 30 days when the battery is weak. The battery must immediately be replaced with a fresh one. If other service is required, or you have not received a smoke alarm user's manual, please contact the manufacturer, L'air Camper Co, or your dealer.

⚠ WARNING
The alarm is shipped deactivated. To activate the alarm, owner's must install included battery in the proper orientation.

WARNING

Test the smoke detector's operation after your camping vehicle has been in storage, before each trip and at least once per week during use.

WARNING

Smoke alarms have a limited life. The unit should be replaced immediately if it is not operating properly. You should always replace a smoke alarm after 10 years from the date of purchase. Write the purchase date on the space provided on the back of unit.

Fire Extinguisher

The fire extinguisher should be checked for charge on a regular basis. Make sure your family, especially the cook, knows how to release the extinguisher storage bracket, and how to properly operate the extinguisher. Check with your local fire department for professional advice on its operation and use if you find the directions on the extinguisher unclear. They will be able and willing to assist you and your family.

Emergency Exits

Safety should always be a top priority. Ensure that you, and everyone traveling with you, can operate the main door and emergency exit windows rapidly, without light.

Obviously, your primary exit from your trailer will be the main cabin door. However, if the main door is blocked and evacuation from the trailer is necessary, use the emergency escape windows located at the front and rear of the RV. These windows are identified by their RED release handles.

1) Make sure screen shades are separated and fully open.
2) Rotate **ALL** three (3) or four(4) RED-tipped window handles to release window.
3) Push handles outward and window will swing upwards; climb out to safety.

Plan ahead and consider other means of escape in case the designated exits are blocked.

Vehicle Defect

If you believe that your L'air Camper Co. travel trailer has a defect, which could cause a crash or could cause injury or death, immediately inform Transport Canada(TC) or, the National Highway Traffic Safety Administration (NHTSA), in addition to notifying L'air Camper Co.

If TC or NHTSA receives similar complaints, either may open an investigation and, if they find that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, TC and NHTSA cannot become involved in individual problems between you, your dealer, or L'air Camper Co.

To contact Transport Canada, either call them directly at Toll free: 1-800-333-0510; or write to: Transport Canada, Defect Investigations Division, 330 Sparks Street, Ottawa, Ontario K1A 0N5 or go to https://www.tc.gc.ca/en/services/road/defects-recalls-vehicles-tires-child-car-seats/report-potential-defect.html and follow the prompts to the online form.

To contact NHTSA, either call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); or write to: NHTSA, 1200 New Jersey Ave., Washington, D.C. 20590 or go to http://www.savercar.gov. Information may be obtained about motor vehicle safety from the hotline.

Notes:

Lair
CAMPER CO
LIGHTWEIGHT LUXURY

WARRANTY

L’air Camper Co. has provided this manual solely for the purpose of providing instructions about the operation and maintenance of its recreational vehicle. Nothing in this manual creates any warranty, either express or implied. The only warranty offered by L’air Camper Co. is set forth in the Limited Warranty applicable to your vehicle.

Your RV, as well as all components and appliances, require periodic service and maintenance. The failure to provide these services and/or maintenance may result in loss of warranty coverage. The owner should review L’air Camper Co.’s Limited Warranty and the warranties of all other component manufacturers prior to use.

This manual is NOT intended to be inclusive of every operational aspect of your RV, but to work in conjunction with the manuals supplied by the different manufacturers of the components in your RV. Please note that some components may be optional or not available for specific models.

In addition to this Owner’s Manual, any manuals supplied to us by a specific component manufacture for products installed in your RV are supplied with the RV in the Owner’s Packet. You may be entitled to additional warranties beyond the L’air Camper Co. Limited Two (2) Year Warranty on individual components. Individual product warranty registrations may be required by each component manufacturer. If supplied to L’air Camper Co., they are passed on in the Owner’s Packet at the time of manufacture. We recommend these be completed and mailed promptly if applicable.

As the owner of a new recreational vehicle, you are responsible for regular care and proper maintenance. Proper maintenance will help avoid situations where the Manufacturer’s Limited Two-Year Warranty will not cover items due to neglect. Maintenance services should be performed in accordance with this manual, as well as the corresponding manufacturers’ warranties on components included within your trailer.

L’air Camper Co. Warranty Exclusions

Normal Wear

Items such as curtains, upholstery, floor coverings, window, door, and vent seals will show wear or may even wear out within the 2-year warranty period, depending upon the amount of usage, weather, and atmospheric conditions.

Accident

We strongly urge our dealers and customers to inspect the trailer upon receipt of delivery for any damage caused by accident while being delivered to the dealer, or while it is on the dealer’s lot. Damage of this nature becomes the dealer or customer’s responsibility upon acceptance of delivery, unless L’air Camper Co. is notified and the person making the delivery verifies the damage. Glass breakage, whether obviously struck or mysterious, is always accidental and covered by most insurance policies.

Abuse

Lack of customer care and/or improper maintenance will result in early failure for which L’air Camper Co. cannot be held responsible.

Warranty (continued)

Chemical Off-Gassing

Chemical off-gassing is not a “Defect” in your recreational vehicle and is not covered by the Limited Warranty. Please follow the recommendations in this manual to address this concern.

Exposure

Not unlike a car, the steel parts of a trailer can and will rust if subjected to prolonged exposure to moisture, salt air, or corrosive air-borne pollutants without repainting. Aluminum oxidizes when unprotected under similar conditions, and refinery chemicals of a sulfurous nature are harmful to finishes if not washed off periodically. Extremely hot or direct sunlight will deteriorate rubber and fade curtains and upholstery. Conditions of this nature, although they may be normal for the area, are beyond L’air Camper Co.’s control and become the responsibility of the owner.

It is the responsibility of the owner to take such preventative measures as are necessary to maintain the exterior caulking and sealer of your unit. It is the responsibility of the owner to use reasonable, prudent care to prevent foreseeable secondary damage from rain, plumbing leaks, and the natural accumulation of moisture in your unit, such as a delaminated floor; stained upholstery, carpeting, or drapes, mold formation and growth, furniture damage, etc. Mold is a natural growth, given certain environmental conditions, and is not covered by the terms of the Limited Warranty.

Overload

Damage due to loading, either beyond capacity or to cause improper towing because of improper balance, is beyond L’air Camper Co.’s responsibility. The L’air trailer is engineered to properly handle the gross vehicle load rating on the certification label. Load distribution has a definite effect upon the towing characteristics and attitudes of the trailer. Level hitch installations are a necessity, and very important for stability/sway control, aerodynamics, tire wear, axle ratings, braking performance, and ground clearance . There are limits to the amount of load that can be safely transported, depending upon speed and road conditions, and reasonable cause to believe these factors have been exceeded could void the L’air Camper Co. warranty. For additional information on the loading of your trailer, consult this Owner’s Manual or gross vehicle weight rating plate.

The axle is manufactured to a tolerances. These tolerances will only change if the trailer is subjected to abuse, such as dropping off a sharp berm, striking a curb, or hitting a deep hole in the road. Such damage could be considered as resulting from an accident, of which risks are not covered under the warranty. Abnormal tire wear and/or wheel alignment resulting from such damage is not covered under the terms of the warranty.

L’air Camper Co. Limited Warranty

Limited Warranty Coverage

(i) The first retail owner and any subsequent owners (ii) ONLY those portions of a NEW travel trailer not excluded under the section “What is Not Covered”, when sold by an authorized dealership and used for its intended purpose of recreational travel and camping; and, (iii) ONLY defects in workmanship performed and/or materials used to assemble those portions of your travel trailer not excluded under the section “What is Not Covered”. “Defect” means the failure of the workmanship performed and/or materials used to conform with the design and manufacturing specification and tolerances of L’air Camper Company. The Limited Warranty is transferable and the subsequent owner’s warranty coverage period shall be the unexpired balance of the original warranty coverage period. A completed copy of the Warranty Transfer Form must be submitted to L’air Camper Co. at the time of resale.

Coverage Ends

24 Months after the first retail owner first takes delivery of the travel trailer from an authorized dealership. Any action for breach of this warranty or any implied warranties must be commenced not more than 25 months after delivery. Some states do not allow the reduction of the time when a breach of warranty claim must be commenced, so the reduction in time when a breach of warranty claim must be commenced may not apply to you.

Limitation Of Implied Warranties

Implied warranties arising under applicable law, if any, including but not limited to implied warranties of merchantability or fitness for a particular purpose, are hereby limited in duration to the term of this limited warranty and are limited in scope of coverage to those portions of the travel trailer covered by this limited warranty. There are no express warranties or any implied warranties of merchantability on those portions of the travel trailer excluded from coverage. There is no warranty of any nature made by L’air Camper Co. beyond that contained in this limited warranty. No person has authority to enlarge, amend or modify this limited warranty. The dealer is not L’air Camper Co.’s agent. L’air Camper Co. is not responsible for any undertaking, representation or warranty made by any dealer or others beyond those expressly set forth within this limited warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

Disclaimer Of Incidental And Consequential Damages

L’air Camper Co. disclaims any and all incidental and consequential damages, including but not limited to expenses such as transportation to and from dealerships and L’air Camper Co. repair facilities, loss of time, loss of pay, loss of use, inconvenience, commercial loss (including but not limited to lost profits), towing charges, bus fares, vehicle rental, service call charges, gasoline expenses, incidental charges such as telephone calls and facsimile transmissions, and expenses for lodging and moisture damage such as mold and mildew as well as rust and corrosion. This disclaimer is independent of any failure of the essential purpose of any warranties provided with the travel trailer, and shall survive any determination that a warranty failed of its essential purpose. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Repair Remedy

L’air Camper Co.’s sole and exclusive obligation is to repair any covered defects discovered within the warranty coverage period if: (1) within 10 days of your discovery of a defect you notify L’air Camper Co. OR an authorized dealership of the defect; AND (2) you deliver your travel trailer to L’air Camper Co. OR an author

ized dealership at your cost and expense.

Back-Up Remedy

If the primary repair remedy fails to successfully cure any defect after a reasonable number of repair attempts, your sole and exclusive remedy shall be to have L'air Camper Co. pay an independent service shop of your choice to perform repairs to the defect OR if the defect is incurable, have L'air Camper Co. pay diminution in value damages. The repair remedy and the back-up remedy must both be exhausted and these remedies must fail to fulfill their essential purpose before you can seek any legal or equitable relief. This limited warranty is not a warranty that promises or extends to future performance because the warranty does not make a representation on how your travel trailer will perform in the future but instead represents only what the remedy will be if a defect exists.

Unless prohibited by state law, repairs will not extend the time when you must commence a breach of warranty claim and shall not extend the warranty coverage period. Any performance of repairs after the warranty coverage ends OR any performance of repairs to those portions of your travel trailer excluded from coverage shall be considered "good will" repairs. Warranty repairs should be expected. L'air Camper Co. may use new and/or remanufactured parts and/or components of substantially equal quality to complete a repair. Damage to interior or exterior surfaces, trim, upholstery and other appearance items may occur at the factory during assembly, during delivery of the travel trailer to your selling dealer or on the selling dealer's lot. Normally, any damage is detected and corrected at the factory or by the selling dealer during the inspection process. If you discover any damage when you take delivery of your travel trailer, you MUST notify your dealer OR L'air Camper Co. within 10 days of the date of purchase to have damage repaired at no cost to you. Minor adjustments, such as adjustments to the interior or exterior doors, drawers, latches will be performed at no cost to you by your selling dealer during the first 90 days of warranty coverage; thereafter, such adjustments are your exclusive responsibility as normal maintenance.

What Is Not Covered

1. Tires, batteries, stereo, television, range/stove, furnace, refrigerator, air conditioner, toilet, water heater, microwave, generator, glass breakage, and other materials, parts and components warranted by persons or entities other than L'air Camper Co.. Please refer to the warranties of component manufacturers for terms and conditions of coverage;
2. Accessories and equipment that are working as designed, but which you are unhappy because of the design;
3. Any part or component of the travel trailer that was not manufactured or installed by L'air Camper Co.;
4. Normal deterioration due to wear or exposure, including but not limited to upholstery, flooring rust, corrosion, oxidation, and cosmetic blemishes;
5. Normal maintenance and service items, including but not limited to light bulbs, fuses, lubricants, sealants and seals, door adjustments, and awning tension;
6. After-market equipment or accessories installed on the travel trailer after completion of manufacture by L'air Camper Co., or any defects or damage caused by such items;
7. Travel trailers not purchased through an authorized dealer of L'air Camper Co. and travel trailers purchased directly or indirectly through auction, salvage, repossession, or other non-customary sale means;

Warranty (continued)

8. Travel trailers used for any rental, business and commercial purpose. If the travel trailer owner or user files a tax form claiming a business or commercial tax benefit related to the travel trailer, or if the travel trailer is purchased, registered or titled in the name of any business association it shall be irrefutable that the travel trailer has been used for rental, commercial or business purposes.
9. Defects or damage caused by, in whole or in part, or in any way related to:
    a. Accidents, misuse (including off-road use), or negligence;
    b. Failure to comply with the instructions set forth in any owner's manual provided with the travel trailer;
    c. Alteration or modification of the travel trailer except such alterations or modifications approved in writing by L'air Camper Co.;
    d. Acts of God or other environmental conditions, such as lightning, hail, salt causing rust, or other chemicals in the atmosphere;
    e. De-icing agents or other chemicals applied to the travel trailer;
    f. Failure to properly maintain or service the travel trailer, including but not limited to the maintenance of lubricants, sealants, and seals;
    g. Condensation and the results of condensation including water damage and the growth of mold or mildew. Mold and mildew are natural growths given certain environmental conditions and are not covered by the terms of this Limited Warranty;
    h. Use of the trailer other than for temporary recreation purposes, including but not limited to use of the trailer for residential, commercial, disaster relief, or rental purposes;
    i. The addition of weight to the travel trailer that causes the total weight to exceed applicable weight ratings, or addition of weight causing improper distribution of the weight of the travel trailer;
    j. Failure to seek and obtain repairs in a timely manner;
    k. Failure to use reasonable efforts to mitigate damage caused by defects;
    l. Failure to properly ventilate the travel trailer;
    m. Improper electric power supply or improper travel trailer hookup to other facilities;
    n. Acts or omissions of any person or entity other than L'air Camper Co.. (Note: An irrefutable presumption arises that the travel trailer has been used for commercial and/or business purposes if the travel trailer owner or user files a tax form claiming any business or commercial tax benefit related to the travel trailer, or if the travel trailer is purchased, registered or titled in a business name.)

Obtaining Warranty Service

In order to obtain warranty service under this Limited Warranty, the owner must do all of the following:

1. Owner and dealer representative must complete and return the Customer Performance Checkout within 10 days from delivery of the trailer,
2. Notify L'air Camper Co. or one of its authorized, independent dealers of any claimed defect within the war-

ranty period or 10 days thereafter,

3. Provide notification of a defect within 10 days of discovery of that defect, and
4. Promptly return the travel trailer to an authorized L'air Camper Co. dealer or L'air Camper Co. for repairs.

If you believe a defect covered by this Limited Warranty still exists after an attempted repair by an authorized L'air Camper Co. dealer, you must contact L'air Camper Co. at the following address, specifying:

1. The complete serial number of the travel trailer,
2. The date of original purchase and the date of original delivery,
3. The name of the selling dealer, and
4. The nature of the problem and the steps or service which have been performed.

L'air Camper Co.
560 Weber Street North
Waterloo, Ontario, CANADA N2L 5C6
Attention: Owner Relations Department

L'air Camper Co. may direct you to an authorized L'air Camper Co. dealer, or may request that you bring your travel trailer to the L'air Camper Co. factory in Kitchener, Ontario, CANADA for repairs.

L'air Camper Co. does not control the scheduling of repairs at its authorized L'air Camper Co. dealers, and repairs at the L'air Camper Co. factory may not be immediately available. Therefore, you may encounter delays in scheduling repairs and/or completion of repairs. All costs associated with transporting the travel trailer for any warranty service shall be the sole responsibility of the owner.

Events That Discharge L'air Camper Co.'s Obligations Under This Limited Warranty

Misuse or neglect, accidents, unauthorized alteration, failure to provide reasonable and necessary maintenance (see Owner's Manual), damage caused by off road use, collision, fire, theft, vandalism, explosions, overloading in excess of rated capacities, and use of the travel trailer for commercial, business, or rental purposes shall discharge L'air Camper Co. from any express or implied warranty obligation to repair any resulting defect.

Disputes

Any disputes relating to the alleged breach of warranty, or representations of any nature, or in respect of any legal relationship associated with or derived from this warranty, shall be mediated pursuant to the National Mediation Rules of the ADR Institute of Canada, Inc. The place of mediation shall be Kitchener, Ontario, Canada. The language of the mediation shall be English. Prior to mediation, L'air Camper Co. will be permitted to fully inspect the RV with any appropriate expert or professional it deems warranted. This dispute resolution mechanism applies to any claim against any dealers, suppliers or manufacturers that may be involved in the warranty dispute.

Should the mandatory mediation be unsuccessful, exclusive jurisdiction for deciding legal disputes rests in the courts within the province of manufacture, which is Ontario, CANADA. Also, this limited warranty shall be interpreted and construed in accordance with the laws of the Province of Ontario. Any and all claims, controversies, and causes of action arising out of or relating to this limited warranty, whether sounding contract, tort or statute, shall be governed by the laws of the Province of Ontario, including its statute of limitations, without giving effect to any conflict of law rule that would result in the application of the laws of a different jurisdiction.

Warranty (continued)

Service

Before leaving the factory, every vital part of the trailer is tested for performance. Each test is signed and certified by an inspector. After the trailer arrives on your dealer's lot, all vital parts and systems are again tested. When you take delivery of your new trailer, you will receive a complete check out.

At that time, a specified list of performance checks on your trailer equipment will be conducted, and any deficiencies you have experienced since taking delivery will be corrected.

Please contact your dealer if your trailer needs service. Major service under your L'air Camper Co. Limited Warranty is available through our nationwide network of L'air Camper Co. Dealer Service Centers. An up-to-date list of Dealer Service Centers will be sent to you with an Owner's Survey shortly after your trailer is delivered. Our web site, www.laircamper.com also has dealer location information avalable. This list is current as of the date of this publication.

Occasionally, dealerships change, or new dealers are added who may not appear on this list. For this reason, it is suggested that you contact your local dealer from time to time for an updated list. Additional copies are available if you need them. All centers operate on an appointment basis for the utmost efficiency.

When you require service for your trailer from the L'air Camper Co. Factory Service Center, or a Certified Dealer Service Center, please contact the service manager for an appointment, and inform them if you are unable to keep the appointment date, or wish to change it. Service may be arranged at the Factory Service Center by contacting the Service Coordinator at:

L'air Camper Co. Factory Service Center, 560 Weber Street N., Waterloo, Ontario (519) 804-8751.

Notes:

CAMPER CO
LIGHTWEIGHT LUXURY

PRE-TRAVEL & TOWING INFORMATION

To help ensure your traveling enjoyment, update your GPS (customer supplied) and confirm that your route is planned with current road maps. Call ahead for tourist information for the areas that you will be visiting or traveling through. Research that your planned camping adventures comply with all federal, state and local regulations.

- Arrange for someone to check your house periodically while you are away. Stop mail or newspaper delivery.
- Carry an extra set of vehicle and house keys with you on a separate key ring.
- Check that your driver's license is valid. Be sure to renew your license in advance if it will expire during your trip.
- If you are planning to visit other countries, contact the consulate nearest the point at which you plan to enter that country for the specific and most current information (including rules for re-entering the your home country).
- Always carry your vehicle registration, insurance policy card(s) and warranty registration.

Tow Vehicle Disclaimer

*As a minimum requirement, your **tow vehicle's Towing Capacity***

MUST BE GREATER THAN the Gross Vehicle Weight Rating (GVWR) of your RV.

Contact your automotive dealer to confirm the towing capacity of your vehicle, weather you are buying a new tow vehicle, or will tow your RV with one that you already own. Discuss the GVWR, size and type of RV that you will be towing. If you plan to purchase a new vehicle, some trucks can be purchased with an optional tow package.

Some automotive manufacturers publish brochures that discuss towing considerations. Ask your automotive dealer how to obtain a copy of this information. Verify that the weight ratings listed in the brochure are for your exact vehicle, ie, the correct year, model, engine, transmission, suspension and any relevant options.

⚠ WARNING
Exceeding a rating may result in unsafe conditions, potential damage, may void a warranty, may complicate an insurance claim, and in some cases, may violate a law.

⚠ WARNING
The actual total weight of the vehicle, all options, liquids, your personal cargo, and the hitch weight is important to know so that you do not exceed the Gross Vehicle Weight Rating (GVWR) of the recreational vehicle. The volume of space available for storage may exceed the amount of available cargo capacity. Large storage compartments have been designed to accommodate normal camping items, which are bulky, but not necessarily heavy.

Pre-Travel & Towing Information (continued)

Vehicle Labels

Decals and data plates used throughout the RV aid in its safe and efficient operation; others give service instructions. Read all decals, data and instruction plates before operating your RV. If any decal, data or instruction plate is painted over, damaged or removed, it should be replaced.

Weight Ratings & Definitions

It is essential to understand and stay within the weight ratings of your RV and tow vehicle. Learning these definitions is the first step in safely managing your RV's weight and balance. Vehicle and trailer weight numbers fall into two categories:

- **Ratings** are maximum limits, NEVER to be exceeded. These limits are established by Grand Design RV and our component manufacturers in the design of the vehicle.
- **Weight** and **Load** are often used interchangeably. Weight is measured by putting an RV, tow vehicle or its components on a scale. Vehicles and cargo have weight, which impart loads to tires, axles, and hitches.

GAWR (Gross Axle Weight Rating) - GAWR is the maximum weight each axle is designed to carry.

GVWR (Gross Vehicle Weight Rating) - GVWR (also called Maximum Loaded Trailer Weight) includes the GAWR plus the hitch weight. It is the maximum allowed weight for a fully loaded RV or tow vehicle.

Gross (Trailer/Vehicle) Weight - Gross Weight is the total actual weight of your RV plus cargo, as measured on a scale.

UVW (Unloaded Vehicle Weight) - UVW is the weight of the RV as built at the factory. The UVW includes the empty LP bottles but does NOT include cargo, water, LP gas, or dealer-installed accessories.

Hitch Weight (or Tongue Weight) - is the amount of weight that presses down on the hitch when an RV is connected to a vehicle.

CCC (Cargo Carrying Capacity)

- United States: CCC is equal to GVWR minus the following: UVW and LP gas weight. Water is considered cargo weight.
- Canada: CCC is equal to GVWR minus the following: UVW, LP gas weight, and full fresh (or potable) water weight (including the water heater).

Weight Labels

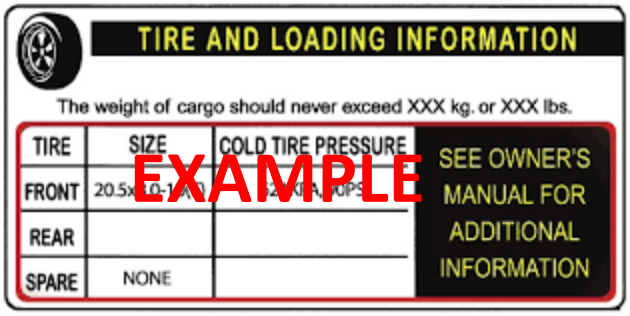
Vehicle weight labels are affixed to your RV to help you make an informed decision before you purchase. Do not remove these labels. If labels are missing, contact your dealer or L'air Camper Co. Customer Service for replacements.

Federal Certification Label

This Transport Canada Label specifies maximum capacities for GVWR, GAWR and tires. It is located on the forward driver's side, on the frame of the trailer.

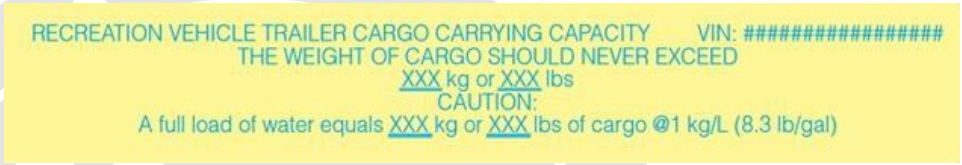
Tire and Loading Information Label

This label specifies the maximum amount of cargo that can be safely added to the RV. It is located on the forward driver's side, on the trailer frame.



Cargo Carrying Capacity (CCC) Label

This label supplies the CCC information for the user. It is located on the backside of a lower cabinet door in the kitchen area.



Loading Your RV

Weight distribution is an important factor when loading your travel trailer. A recreational vehicle with the cargo distributed properly will result in efficient, trouble-free towing. Loading the RV as evenly as possible and then weighing the loaded RV can accomplish proper weight distribution. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire.

All objects should be held securely in place. Loose items can cause interior damage and erratic trailer movements. They can even be a hazard to others if they fall out. Load shifts can affect driving and handling enough to cause serious, unexpected danger. Inspect tie-downs and fastenings, as well as the load, at regular intervals every hour or two, depending on roads, curves, hills, and speed. The first check should be made within a half hour after the trip is started or after the first 25 miles, since some initial settling is likely.

If you are going on a long trip, take a "shakedown cruise" of a few miles the weekend before you leave. This will test your load, safety equipment, hitch, and might reveal things you missed or forgot. By getting everything in order before you leave home, you can prevent delays and annoyances that could take the fun out of your trip.

Many owners place luggage, camping equipment, bicycles, and other items in the travel trailer. The weight of everything put on or in a trailer, whether temporarily or permanently built-in, must be included in figuring the total load.

You must not exceed the GVWR or GAWR of the unit (see definitions). To verify GVWR, total the loaded hitch and axle weights. If this total exceeds GVWR, you must remove items until the vehicle weight is within this limit. You can verify that the coach's axles are not overloaded by comparing the loaded axle weight with the GAWR. If the reading is above this limit, redistribute the item load.

Finally, make sure the tongue weight of the loaded camper falls within the limits of the tow vehicle.

⚠ WARNING

WHILE CARGO CAN BE ADDED UP TO THE MAXIMUM CARGO CARRYING CAPACITY, CARE MUST ALSO BE EXERCISED TO NEVER EXCEED THE GAWR, GVWR, NOR THE MAXIMUM LOAD RATINGS FOR

How Overloading Affects Your RV and Tires

The results of overloading can have serious consequences for tow vehicle passenger safety. Too much weight on your vehicle's suspension system can cause spring, shock absorber, or brake failure, handling or steering problems, irregular tire wear, tire failure or other damage.

If insufficient weight is placed on the tongue, the trailer will tend to move from side to side, or to “fishtail”, which can be dangerous. Towed trailers are designed to have proper weight on the tongue for balance when the trailer floor is level.

An overloaded vehicle is hard to drive and hard to stop. In cases of serious overloading, brakes can fail completely, particularly on steep hills. The load a tire will carry safely is a combination of the size of tire, its load range, and corresponding inflation pressure.

⚠ DANGER

OVERLOADING OR IMBALANCED LOADING OF YOUR TRAVEL TRAILER CAN AFFECT HANDLING OR CAUSE AN ACCIDENT THAT COULD RESULT IN SERIOUS INJURY OR DEATH.

It is the air pressure that enables a tire to support the load, so proper inflation is critical. Under-inflated tires can show excessive signs of wear, cause reduced handling capability, overheat, suffer belt separation or fail completely.

⚠ DANGER

EXCESSIVE LOADS AND/OR UNDER-INFLATION CAUSE TIRE OVERLOADING AND, AS A RESULT, ABNORMAL TIRE FLEXING OCCURS. THIS SITUATION CAN GENERATE AN EXCESSIVE AMOUNT OF HEAT WITHIN THE TIRE. EXCESSIVE HEAT MAY LEAD TO TIRE FAILURE.

Tires should never be inflated beyond the maximum cold inflation pressure molded into the sidewall of the tire.

⚠ WARNING

WHEEL SEPARATION CAN OCCUR! EXCEEDING THE GVWR AND GAWR RATINGS FOR YOUR UNIT COULD RESULT IN SERIOUS DAMAGE TO THE SUSPENSION, FRAME OR OTHER COMPONENTS.

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Weighing Your Unit

The total weight, including liquids, groceries, clothing, etc. must not exceed the Gross Vehicle Weight Rating (GVWR) stated on the Transport Canada Label on your trailer. The total load on the wheels must not exceed the respective Gross Axle Weight Rating (GAWR) shown on the label.

1. Drive the loaded trailer onto the scale, making sure that the tongue jack will be the only contact point with the scale after unhooking. Unhook and drive the tow vehicle off the scales. Level the trailer and record hitch weight.
2. Hookup to the trailer and pull forward on the scales until only the trailer axles are on the scale. Level the trailer and record the axle weight.

3. To determine total trailer weight, add the hitch weight plus axles.

Keep the following in mind once the total trailer weight has been determined:

- The total trailer weight must not exceed the GVWR stated on the label of your trailer.
- The total load of your fully loaded trailer on the tires when connected to the towing vehicle must not exceed the combined total Gross Axle Weight Rating (GAWR). The GAWR is stated on the Transport Canada Label.
- The hitch weight must not exceed your hitch manufacturer's recommendation. It should be 10 to 15 percent of the total travel trailer weight.
- Equalize side to side loading. Store heavy objects on or near the floor.
- Avoid towing with waste holding tank(s) full or partially full. If unavoidable, drive slowly until one or both tanks can be dumped.
- Keep water tank either completely full or empty when towing to avoid the shifting of weight of a partially filled tank.

These procedures should be repeated whenever there is any change in vehicles or loading to ensure that you do not exceed the ratings.

Packing Tips

The storage facilities in your trailer have been designed to remain secure while in motion. Exterior compartments have key operated locks. Doors and drawers have catches installed; effort is required to release the catches when opening drawers and doors. When storing articles:

- Always keep tools and equipment stored in areas where they will not shift while traveling.
- Wherever possible, place heavy articles in storage compartments which are low and near the axles for better weight distribution.
- Pack articles carefully in the storage compartments to minimize shifting. If necessary, use straps to prevent movement.
- Be sure liquid containers are capped and cannot tip or spill. Secure all glass containers and dishes before traveling.
- Exterior storage compartments may not be watertight in all climate conditions. Carry any articles which could be damaged by water inside the trailer.

⚠ WARNING
OUTSIDE STORAGE COMPARTMENTS ARE NOT SEALED. THEY ARE VENTED ENCLOSURES, AND ARE ACCESSIBLE FROM INSIDE THE TRAILER. THEREFORE, DO NOT STORE FLAMMABLE, VOLATILE

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Hitches and Towing

Hitching your trailer to the tow vehicle will become routine with experience. Make it a habit to examine all hitch components before hitching the trailer. If you have a conventional ball hitch, check for cracked or bent parts, cracked welds, deformed or stripped bolts. Be sure the ball is tight and well lubricated. Check the trailer tongue for cracks. Be sure the ball locking device works freely. Inspect the safety chains. If you find a defect in any hitch component, correct it before towing the trailer.

Pre-Travel & Towing Information (continued)

Before attempting to hitch up your trailer, read the instructions provided by the manufacturer of the hitch. L'air Camper trailers accept a 2-inch ball. The following instructions apply in most cases. If the in-structions provided with your hitch are different from these instructions, follow those of the hitch manufacturer:

1. Place wheel chocks behind the travel trailers tires.
2. Turn the tongue jack crank clockwise. This will raise the tongue and coupler. Raise the tongue sufficiently to clear the hitch ball on the tow vehicle.
3. Back the tow vehicle until the hitch ball is under the hitch ball socket. If you are working alone, a backing aid mirror may be helpful. Set the parking brake.
4. The coupler latch locking lever on the tongue should be fully open. Lower the tongue jack until the ball is firmly seated in the socket. Close the coupler latch and secure it with a locking pin or bolt.
5. Raise the tow vehicle and trailer with the tongue jack high enough to allow room to install the hitch spring bars. (The tow vehicle will come up with it if the coupler is properly latched).
6. Attach the spring bars (optional on Trillium RV's) according to the hitch manufacturer's instructions.
7. After adjusting the spring bars, raise the jack off the ground to its highest level. Note that the trailer must be relatively level front to back. Tilt in either direction must be kept to an absolute minimum. Having the front lower than the rear reduces towing stability on tandem axle trailers.
8. Connect all safety chains. Safety chains are extremely important to protect your investment as well as other people's lives and property. As a trailer owner, it is your responsibility to be familiar with these devices and their correct use. The hitch on your tow vehicle must be equipped with two chain attachment eyes on each side of the vehicle's centerline. Both chains should be the same length and crossed under the trailer's tongue to hold the tongue off the ground if the trailer accidentally becomes uncoupled.
9. Connect the emergency breakaway switch cable (Only on Trillium Rv's equipped with brakes).
10. Plug in the 12-volt 7-way electrical connector.
11. Check stop lights, turn lights, running lights, and electric brakes before driving off. See ELECTRICAL SYSTEM section in this manual for details of the electrical system and wiring.
12. Remove and store the wheel chocks.
13. Reverse the procedure for unhitching, placing wheel chocks at the front and rear of the trailer tires prior to uncoupling the trailer from the tow vehicle to ensure the trailer does not roll away when the coupling is released.

⚠ WARNING
NEVER ATTACH SAFETY CHAINS TO THE HITCH BALL OR ANY REMOVABLE PART OF THE HITCH.

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⚠ WARNING
DO NOT CONNECT THE BREAKAWAY SWITCH LANYARD TO THE HITCH BALL OR ANY REMOVABLE PART OF THE HITCH.

Pre-Travel & Towing Information (continued)

Before Towing

- Disconnect and securely store all park connections, including shore cord, water connections, cable and any other items that should be removed from the outside of the trailer..
- Close and secure all doors, windows, awnings and roof vents.
- Return the Entry step to the travel position.
- Refer to the “Pre-Travel Checklist” located in Section 8.

Weight Distribution

Proper weight and load distribution is absolutely essential to safe towing. It is necessary to maintain a certain percentage of gross vehicle weight on the tow vehicle. Common recommendations place approximately 10% - 15% of a loaded weight on a travel trailer hitch and approximately 20% - 25% on a fifth wheel pin weight. Too much or too little weight upon the hitch leads to dangerous driving conditions such as sway and reduced tow vehicle control. In no circumstance should the loaded weight ever exceed the GVWR or the GAWRs.
Safety Chains

Always use safety chains when towing. They maintain the connection between the travel trailer and tow vehicle in the event of separation of the ball and trailer coupling. Safety chains are included with every travel trailer and are required when towing a travel trailer. Hook them to the frame of the tow vehicle (not the hitch), crossing them under the trailer’s tongue. Inspect the length of the chains once attached to the tow vehicle frame. They should be long enough to allow for turns, but short enough to avoid any drag.

Breakaway Switch (Optional Equipment on all Trillium Models)

The breakaway switch is another safety device as it provides a means of automatically slowing and stopping your RV if it should become detached during traveling. The cable from the break-away switch should be attached to the tow vehicle so that it remains connected in the event the trailer coupling detaches from the hitch ball. The breakaway switch is powered from the RV 12 Volt battery. If separation occurs the pin is pulled out of the switch and current from the RV battery is applied to the trailer brakes. See electrical section for testing breakaway switch.

DISCONNECT THE UNIT FROM THE SEVEN-WAY TOW VEHICLE CORD PRIOR TO TESTING THE BREAKAWAY SWITCH. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE BRAKE CONTROLLER.

Tire Pressure

Maintaining proper tire pressure is another key to safety. The cold inflation pressure for each tire is located on the Canada Transport Label. Cold inflation pressure refers to the pressure in the tire prior to traveling. Always check your tire pressure before traveling. Under-inflated tires will cause excessive sidewall flexing and produce extreme heat, leading to early tire failure and possible loss of control. Overinflated tires can cause uneven tire wear and also lead to early failure. More information on tires and maintenance can be found in the Care and Maintenance section.

Most tires may naturally lose air over time, up to several PSI per month in some conditions.

Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.

With radial tires, it is usually not possible to determine under-inflation by visual inspection.

Level Towing

Having the tow vehicle and recreational vehicle level with each other will help improve tow-ability as well as safe driving. A hitch that is too low can cause the front of the trailer to drag. A hitch that is too high can cause

the rear of the trailer to hit those high spots in the road.

Lights

Check all electrical connections to ensure all lights on the tow vehicle and travel trailer are functioning properly. The brake lights, hazards and turn signals should be in synchronization with the tow vehicle.

Towing Tire Safety Tips (Also see Section 10)

Preventing Tire Damage

- Slow down if you have to go over a pothole or other objects in the road.
- Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.
- Tire Safety Checklist
- Check tire pressure regularly (at least once per month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Do not overload your vehicle.
- Drivers should always obey posted speed limits and reduce speeds when necessary based on vehicle, road, weather and/ or traffic conditions.
- Vehicle speed, load and inflation pressures, all of which are within the control of the driver, are critical factors for the safe and enjoyable operation of any vehicle.
- The tire designation ‘ST’ is the tire specifically for use by the trailer industry. Refer to the sidewall of the tire for specific speed restriction for the tire. NEVER EXCEED THE TIRE RATING OR POSTED SPEED LIMITS.

⚠ WARNING
Check tires for proper inflation and wheel lug torque to meet manufacturer’s specifications.

NOTE: Level towing must be achieved through adjusting the hitch ball height on the tow vehicle. If after hitching up and adjusting the spring bars (as described earlier in this manual) you find your vehicle out of level, measure the amount the vehicle is out of level and have a qualified professional adjust the hitch ball height on the tow vehicle.

Towing

Towing a recreational vehicle can be enjoyable and worry-free if special attention toward safety is applied every time you hit the road. Before heading out on your first camping trip, practice turning, stopping and backing in low traffic areas or large parking lots. In time, traveling with a recreational vehicle in tow will be second nature.

Driving with a trailer in tow is different. Start out slowly, checking the traffic after signaling and being sure the road is clear. Accelerate slowly and evenly, checking the mirrors frequently as you move into the proper lane. Try to drive with an anticipation of problems that may occur way ahead and prepare for them, even though they may never happen. As a motorist sharing the road, you are taller, heavier, longer and require more time and distance to stop. Weather and road conditions will require adjustments to speed. Anticipate dips, gutters, and depressions in the road, slowing down well in advance. These are the hardest jolts of any kind on your vehicle, hitch, recreational vehicle and items stored inside the unit. Take dips and bumps slowly and be certain the trailer wheels have passed the point before accelerating.

Towing Speed

Reasonable speed is probably the greatest factor in safe and pleasant towing. Towing stability is increased and emergency stopping distances are reduced with a reduction in speed. Reduce your driving speed substantially while towing. Slow down for grades and turns. Towing stability is reduced downhill and around bends. With experience, you will develop the special driving skills needed for safe trailer towing.

⚠ WARNING

TOW AT MODERATE SPEEDS ALLOWING FOR ADVERSE HIGHWAY AND WIND CONDITIONS. INCREASED SPEED REDUCES TRAILER TOWING STABILITY, AND HANDLING AND STOPPING ABILITY.

Stability in Towing

Swaying of a trailer behind a tow vehicle is an inherent characteristic of any combination of two or more vehicles. There are numerous factors that affect towing stability that you as the owner have control over before you take your vehicle on your first trip. And there are factors you need to be aware of while driving. We will address the most common factors in this section.

⚠ WARNING

DO NOT ATTEMPT TO STOP THE TRAILER SWAYING BY MAKING QUICK STEERING CHANGES, OR BY FORCEFULLY APPLYING THE TOW VEHICLE BRAKES.

Choose the Right Tow Vehicle

There are several factors in choosing a tow vehicle that will affect towing stability. The best source of information to make an informed decision on matching the tow vehicle to the travel trailer is your RV dealer and tow vehicle dealer. It would be impossible for us in this manual to address all the factors or make specific recommendations, however, the following are important considerations:

1. Weight of the tow vehicle — Generally the heavier the tow vehicle the better because it will be better able to dampen lateral loads through the hitch as a result of wind or other factors.
2. Wheel Base — The longer the wheel base the better. This is especially a factor as the length of the travel trailer increases. The greater the wheel base of the tow vehicle the better it will be able to dampen lateral loads through the hitch as a result of wind or other factors.
3. Rear Overhang Distance — The rear overhang is the distance from the hitch ball to the center of the rear tow vehicle axle. A shorter distance will result in a more stable ride.
4. Tire Sidewall Stiffness — The stiffer the sidewall of the tires the better the dampening of trailer sway. Weak tire sidewalls or under-inflated tires will have an adverse effect on dampening.

5. Rear Suspension Stiffness — The stiffer the rear suspension the greater the ability of the tow vehicle to not be affected by trailer sway. A soft tow vehicle rear suspension will allow movements of the trailer, transmitted through the hitch, to have a greater effect on the tow vehicle. The stiffness of the rear suspension of the tow vehicle is one of the significant factors affecting driver control.

Effects of Trailer Loading

Trailer loading can have an effect on the towing stability. There are some general principles you can follow when loading your trailer to keep trailer sway to a minimum.

- Center of Gravity — The higher the center of gravity for a vehicle the less stable it will be in certain situations. Therefore, when loading heavy items keep them as close to the floor as possible. Also a travel trailer must have the center a gravity forward of the axles. Be sure to plan your load so the larger percentage of the weight will be forward of the axles. After loading your travel trailer, make sure the hitch weight, as a percentage of the total weight of the travel trailer, is between 10% and 15% for travel trailers and 20% to 25% for fifth wheels. (See Weighing Your Unit on page 15.)
- Fluids in Tanks— We always recommend grey and black holding tanks be emptied before traveling. If it is impossible to empty these tanks prior to travel, you will need to reduce your speed to compensate for the larger affect this could have on stability.
- Tire Sidewall Stiffness—Like the tow vehicle, the stiffer the sidewall of the tires on the trailer the better the dampening of the trailer sway. Weak tire sidewall or under-inflated tires will have an adverse effect on dampening.

Additional Factors Affecting Towing

Excessive speed, improper cargo weight distribution, low tongue load, ratio of mass of tow vehicle to weight of travel trailer, wheel base of tow vehicle, rear overhang distance, tire cornering stiffness, under-inflated tires, slippery surfaces, cross-winds, improper steering, passing other large vehicles or over-steering, improper coupling, improper braking, and shoulder drop-offs are all factors that can contribute to excessive trailer sway. Remember if sway occurs: Get off the gas, steer straight, don't brake, and, if you must brake, use the hand controller for the trailer brakes.

If the trailer begins to sway strongly from side to side, make as little steering correction as possible while maintaining vehicle control. Oversteering to counter trailer sway will increase sway and cause loss of control. Reduce speed gradually by using the hand control on the brake controller. Forceful tow vehicle braking may increase trailer sway. Locking tow vehicle wheels will cause loss of control.

Stop as soon as possible after any sign of reduced stability. Make sure all tires are fully inflated, the sway control is properly adjusted, and the hitch bars are adjusted according to the hitch manufacturer's instructions. Check for mechanical failures. If cargo is not properly loaded, shift some weight forward in the trailer. If you can't stop immediately, reduce speed until control can be maintained.

Heavy cross winds, particularly gusts in canyons or at other exposed locations, can cause excessive trailer swaying or loss of control. Under these conditions, reduce speed to maintain control.

Small but sudden course changes can occur when a vehicle towing a trailer is passed by a large flat-fronted vehicle such as a truck or bus. This happens when the side wind from the flat front of the truck blows against the side of the trailer. As the truck's front passes the rear of the trailer, the tow vehicle will tend to turn away from the truck; as the truck's front passes the trailer wheels, the tow vehicle will turn back toward the truck.

When a large flat-fronted vehicle passing from behind causes your vehicle to change course, make as little

steering correction as possible. The tow vehicle will be turned back toward its original course as soon as the truck's front passes the trailer wheels. Avoid quick steering corrections that can magnify these course changes and start trailer swaying.

Braking (Electric brakes are optional equipment on ALL Trillium Travel Trailer Models)

Start sooner and lead with your trailer brakes. Prior to beginning any trip, make sure the brake control is adjusted. See your accompanying literature for the brake control you purchased for your tow vehicle.

Brake Controller (Optional Equipment)

Your brake controller must be set up according to the brake controller manufacturer's recommendations to ensure proper synchronization between the tow vehicle and the trailer. Additionally you may have to make small adjustments occasionally to accommodate changing loads and driving conditions.

Proper synchronization of tow vehicle to trailer braking can only be accomplished by road testing. Brake lock-up, grabbiness or harshness is quite often due to the lack of synchronization between the tow vehicle and the trailer being towed. Improper synchronization can also result in overload of the brakes of either the tow vehicle or trailer, generate excessive heat, causing brake fade or failure. When properly synchronized there should be no sensation of the trailer 'pushing' or 'pulling' the tow vehicle during braking.

Brake Inspection (Optional Equipment)

Inspect all external braking system components before moving your trailer. Also, inspect all wiring connections, and test the breakaway switch as outlined in the electrical section. Inspect the brake drums and internal components each time the wheel bearings are lubricated. (See MAINTENANCE CHART at the back of this manual.) The magnets and linings should not show excessive or uneven wear. The magnets should move freely in and out on their mounts. After replacing the hubs on the axle, adjust the brakes as outlined below.

Brake Adjustment (Optional Equipment)

It is recommended that the brakes be adjusted after the first 500 kms of operation and every 5,000 kms thereafter. Adjust the brakes as follows using a standard automotive brake tool:

1. Raise the wheel off the ground. Place the jack under the axle bracket only. **NOTE: DO NOT JACK DIRECTLY ON THE AXLE BEAM**
2. Locate the adjustment hole at the base of the brake drum backing plate.
3. With a screwdriver or standard adjusting tool, rotate the star wheel of the adjuster assembly to expand the brake shoes. When the wheel begins to drag heavily, rotate the star wheel in the opposite direction until the wheel turns freely with a slight lining drag.
4. Lower the wheel, remove the jack, and repeat the sequence for the other wheels.

⚠ WARNING

SOME PROCEDURES REQUIRE THE USE OF SPECIAL TOOLS FOR SAFE AND CORRECT MAINTENANCE. DO NOT ATTEMPT TO SERVICE, REPAIR OR WORK ON ANY AXLE, BRAKE, OR WHEEL SYSTEM UNLESS YOU HAVE APPROPRIATE SKILLS AND KNOWLEDGE. LACK OF PROPER TRAINING, FAILURE TO FOLLOW PROCEDURES OR USE SPECIAL TOOLS AND SAFETY EQUIPMENT COULD RESULT IN PROPERTY DAMAGE, SERIOUS INJURY OR LOSS OF LIFE.

Braking Tips

- Never use the trailer brakes alone for extended periods. They were designed to stop the trailer, not the

tow vehicle. Such use places excessive loads on the brakes causing overheating, fading, and premature wear of magnets, brake shoe linings, and drums.

- Never use the tow vehicle brakes alone. The added weight of your trailer more than doubles the load placed on the vehicle's brakes, with the same results as using trailer brakes alone. Driving control is also severely affected when tow vehicle brakes are used alone, due to the force of the trailer pushing against the tow vehicle. This is especially true on slippery pavement or loose gravel, and "jackknifing" can occur.
- Always use the automatic brake controller. The synchronized braking system enables you to drive in a safe manner with both hands on the steering wheel. If the brake controller is properly adjusted, there will be a slight "lead" on the trailer brakes. This braking resistance, combined with the tow vehicle's engine pulling power, will help keep the two vehicles correctly aligned and help bring them to a safe, straight stop.

Parking

You should not park vehicles with trailers on a grade or hill. However, if you must park on a grade, follow these steps:

1. Apply the tow vehicle foot brake.
2. Have someone place wheel chocks under the trailer wheels.
3. When the wheel chocks are in place and the assistant is clear, release the brakes until the chocks absorb the load.
4. Apply the parking brake.
5. Shift the transmission to "P" (PARK, with automatic transmission) or low or reverse with manual transmissions.

When starting after being parked on a grade:

1. Apply the foot brake and hold.
2. Start engine in "P" (for automatic transmission).
3. Shift into gear and release the parking brake.
4. Release the foot brake and drive until the chocks are free.
5. Apply the foot brake and have someone remove the chocks.

NOTE: If the vehicle is parked on a grade, don't shift the transmission into 'P' (PARK) until the trailer wheels are chocked and the parking brake is set. If you do, the weight of the vehicle and the trailer may put so much strain on the transmission that it will be hard to shift out of 'P' (PARK).

Travel Trailer Leveling Procedures

1. Choose a site that is as level as possible (Some sites are equipped with a prepared surface such as concrete or asphalt.) Ensure the ground is not soft and will support the weight of the trailer on the stabilizer jacks or other support devices.
2. Before uncoupling, level the trailer from side to side with suitable lengths of 2" x 6" wood blocks under the trailer wheels. Place the wood blocks on the ground forward of the wheels, and tow the trailer onto the blocks. Block the wheels to be sure the trailer cannot roll.

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3. If front-to-back leveling is required, unhitch the trailer from the tow vehicle and crank or run the front jack down. The front jack should always rest on a pad. Disconnect the safety chains, the pigtail, and breakaway cable from the tow vehicle. Move the front jack up or down until the trailer is level.
4. Lower stabilizer jacks, placing wood block under foot as necessary, until they make firm contact with ground — Do Not Overtighten or try to lift trailer except for small amount needed to level.
5. After stabilizing the trailer, be sure the trailer frame is not twisted, buckled, or stressed. Check that all doors and windows operate freely and do not bind.
6. Before resuming travel, be sure all stabilizers are removed or fully retracted.

⚠CAUTION
Stabilizing jacks are designed to stabilize your Camper trailer. Do not attempt to lift the unit to change a tire or for any other purpose.

Stabilizing Jacks

Always park the recreational vehicle on level ground and use tire chocks. It is extremely important to level the trailer front and rear using the tongue jack on your travel trailer. Using the crank for the particular stabilizer jack, lower the jacks on the lowest side of the trailer first and check the level. Adjust if necessary and then lower the other jacks to finish stabilizing the trailer.

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Exterior

Routine Fiberglass Cleaning and Maintenance

Properly used and maintained, your camper will give you years of service and enjoyment. Normal maintenance of the gel coated L'air Camper is similar to the care you would give your automobile. Overall, automotive cleaners and waxes work fine.

> **NOTE:** Do not use caustic or highly alkaline (high pH) cleaners or those containing ammonia. These types of cleaners may darken white or off-white weathered gel coat surfaces.
>
> **NOTE:** Before attempting to use a particular cleaning solution or method for cleaning, test the material to be cleaned in a hidden or inconspicuous area for possible adverse reactions.
>
> **NOTE:** Always clean your trailer in the shade or on a cloudy day when the exterior shell is cool.

We recommend general washing to avoid soil buildup and staining. The soil on your gel coat finish is the result of regular use and environmental pollutants such as soot and smog. Periodic cleaning with a mild detergent is necessary to remove normal deposits of soil.

Wire brushes, scouring pads, or other abrasive type materials/solutions should never be used on the outside of your camper. They create small scratch marks that will collect dirt and other foreign materials.

After washing, it is recommended that you wax your RV. It is a good idea to wash and wax the camper at least twice a year. Keeping the interior and exterior in nice condition, and inspecting regularly will allow you to keep minor problems from becoming major ones. Remember, an older RV in nearly new condition will have a higher resale value.

Restoring Gel Coat with Scratches or Discoloration

The finish on the roof, body, doors and propane cover of your RV is highly durable marine grade gelcoat which, with proper care, will last for many years and retain its lustrous appearance. Over time, constant exposure to our natural environment and undesired pollutants causes the gel coat to lose some of its gloss. To restore your finish to the original gloss and color requires your special attention. After washing with a mild soap or detergent give the surface a good polishing with a self-cleaning marine or automotive wax. Waxing in the fall and spring is generally recommended to maintain and restore most of the original gloss. If the surface has not been maintained and has weathered badly, and if cleaning and waxing does not restore the finish satisfactorily, compounding will be required.

Polishing compound (fine abrasive) or rubbing compound (coarser abrasive) is recommended for use on RVs to remove scratches, stains, or a severely weathered surface. Polishing or rubbing compound can be applied by hand or by mechanical means, such as an electric or pneumatic buffer. After the scratched, stained or weathered surface has been removed, it should be waxed to enhance the gloss and color while providing a seal to retard staining or new soil accumulation.

Your local fiberglass repair shop is best equipped and trained to do this work. If regular washing and waxing has been neglected, discoloration of the gel coated fiberglass surface may occur. Discolored areas are very shallow in depth, literally right on the surface.

Light scratches or discoloration may also be removed by gently wetsanding the affected areas only by using 600 or 800 grit, specially treated waterproof sandpaper. It's important to always sand in one direction, this includes the curves too. Use water to cool and clean the sandpaper and cut back on dust.

After you are finished sanding, dry the areas and verify all thescratches or discoloration has been removed. If not, repeat the process. After sanding, buff the area using an electrical or pneumatic buffer at low speed (1750 rpm – 2250 rpm) with a generous amount of rubbing compound on a soft wool pad. This will restore the luster to the sanded surface. When buffing has been completed, wash off the rubbing compound with clean water, and dry the surface.

To restore the gloss to the affected area, use a high grade marine or automotive wax.

Repairs

During the life of your RV, some damage to the gel coat surface is unavoidable. Some of these repairs can be completed by a skilled owner, but if you are unsure, we recommend repairs be done by trained, experienced professionals at your local fiberglass repair shop or L'air Camper Co. dealer.

Although your body and roof have been designed to with-stand normal use, it is inevitable that surfaces will become scratched or chipped over a period of time. Superficial scratches present little problem since they can usually be rubbed out with a compound cleaner. "Hairline cracks" or "spider webbing" may develop in the gel-coat surface of a hull or deck. This can be caused by weathering, impact, or other factors. Small blisters or gouges may also occur through normal wear. These do not affect the strength of the hull or deck and can easily be repaired.

Fiberglass bodies are tough but like bodies of any other materials, they can be damaged. A fiberglass body has virtually no internal stresses. Thus, when a part is broken or punctured, the rest of the body retains its shape. A severe blow will either be absorbed or result in a definite, localized break, which can be easily re-paired.

Refinishing

For a severely scratched or weathered fiberglass RV that is no longer restorable by using the previous meth-ods, it may then be necessary to refinish it with two-package or two-part aliphatic urethane enamel. This can be done very effectively, but its recommended refinishing should only be done by experienced professionals.

Caulking and Sealants

It is recommended that the caulking and sealant used in external seams and joints, such as rear-shell seg-ment, around window frames, light bezels, etc., be checked once a year. If this material has dried out and be-come cracked, checked or if a portion has fallen out, it should be replaced with fresh material to prevent pos-sible water leaks. Caulking and sealing products are available from your L'air Camper Co. dealer.

Windows

Keep your windows looking and performing like new by using the proper care, products, and techniques. Win-dows can be scratched with rough cloth, harsh soaps, and some cleaning products and these must be avoid-ed. When cleaning a window always remove as much abrasive dirt as possible without touching the surface by flushing the window surface with clean water.

NOTE: When cleaning your windows, it's a good idea to remove jewelry, which can accidently cause deep scratches.

⚠CAUTION
Never use abrasive, caustic cleaners, alcohol, or solvents to clean your windows. These items can damage the plastic surfaces and cause hazing, scratching or other failure of the window.

Use a non-abrasive soap or detergent and water with a soft sponge, cloth or chamois and rinse often to keep it free of grit. Wash up and down or side to side, never in a circular motion. After a final flushing with more water carefully dry with a clean soft cloth. A good practice is to gently (let the weight of the cloth do the work) wick up the excess water on your first pass which will also help to pick up any remaining loose particles. With windows, start at the top of the window and work down turning the cloth to a fresh side after each pass. Again, do not use a circular motion on the windows.

NOTE: DO NOT use Windex as it will damage the acrylic. Never use any petroleum based cleaners, or caustic chemicals on your windows/skylight vent.

NOTE: DO NOT use WD-40 (as it is petroleum based). Never use a razor blade, putty knife, or abrasive pad to clean your windows/skylight vent.

NOTE: DO NOT use a high-pressure spray nozzle when rinsing your windows after washing.

NOTE: Avoid washing windows vent in direct sunlight.

Clean the seals with a damp cloth and mild detergent every three to six months. Do not use strong solvents, as they will damage the seals. A coat of natural silicone lubricant applied after the seal has dried, will keep it flexible. Spread the lubricant evenly with a brush or finger, working it into the surface. This is a good practice for all rubber seals in your trailer.

Keep screen/blinds, exit latches and window slides clean and free of debris. Periodically test the operation of all windows and their components.

For replacement of a damaged window, contact your L'air Camper Co. dealer.

Aluminum Wheels

The aluminum wheels and axle end cover come treated with a clear-coating. Keep them looking good by washing with soap and water. Do not use abrasive cleaners or polishes on coated aluminum wheels.

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General Exterior Information and Operation

Main Door

The main door of the trailer is manufactured with a built-in, keyed dead bolt and door lock. The door lock is engaged from the inside by a lever and the dead bolt is engaged by turning the knob.

A main door hold-back is mounted on the trailer's exterior side skin. The hold-back secures the door to the side of the trailer.

For lubrication and out-of-adjustment issues, refer to the Maintenance Section.

CAUTION

When towing, the door lock and dead bolt must be secured. If it is not locked, the constant vibration of travel may cause the door to open resulting in possible damage.

Screen Door

The screen door is secured inside the main door and can be operated by pulling the screen from its storage frame across the doorway to magnetically latch.

CAUTION
When towing, the door lock and dead bolt must be secured. If it is not locked, the constant vibration of travel may cause the door to open resulting in possible injury or damage.

Screen Door—Optional Equipment

The screen door is attached inside the main door with Velcro and can be removed and rolled for storage. The screen is opened or closed by zipper and can be rolled up to the side and tied back with the attached straps.

City Water Hookup

The city water hook-up is located on the side of the trailer. For consistent water flow and plumbing line safety, an in-line regulator limits pressure to 50 PSI.

Use a tasteless, odorless, and non-toxic high-pressure hose of at least 1/2 in. diameter designed for RV use. The city water inlet is a standard garden hose thread. We suggest you carry two lengths of hose in order to reach hookups farther away than normal, plus, to have a spare.

After hooking up the hose and turning on the city water valve provided in the park, slowly open a faucet. There will be a lot of spurts and sputtering until all the air is expelled from the trailer system. If the water heater is empty, it will take some time before all the air is expelled and a steady flow of water occurs at the faucet. Once a steady flow is achieved at one faucet the others should be opened long enough to expel the air in the lines going to them.

Your plumbing system has a built-in pressure regulator to protect your lines and faucets from extremely high pressures on some city water systems.

Shoreline Power Supply

The power cord hookup is located on the side of the trailer. The cord may be stored in the rear exterior compartment. The power cord is plugged into the trailer receptacle and the City Power Service.

NOTE: Be sure to use an appropriately sized power cord to connect to shore power.

Many campgrounds provide less than 30 amp service, and your hookup may blow their fuse or circuit breaker. If this happens, reduce the load and replace the fuse or reset the breaker.

Axle and Running Gear Assembly

Each rubber torsion axle is aligned during manufacturing, and double-checked on a random basis. Alignment after delivery is the customer’s responsibility.

Hitting potholes or rough railroad tracks while traveling straight will only cause misalignment after the tire has struck such objects many times. Of course, a deep enough hole can affect the alignment immediately.

The worse culprit is a curb because they are normally struck at an angle. Axles are occasionally damaged when people are attempting to park beside a curb while backing up their trailer.

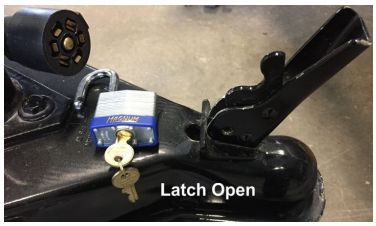
The trailer axle(s) is bent upward in the middle. This bend is normal and is how the camber is obtained. Also, toe-in is built into the axle by very slight bends in the axle tube on each end.

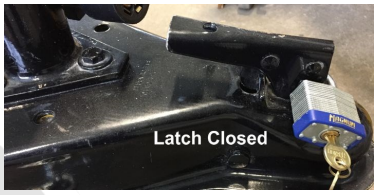
Tire wear indicates misalignment. Check with your dealer for the nearest location having the proper equip-

ment to correct the trailer's alignment.

Refer to Section 8 - Maintenance for camber and toe-in specifications.

Hitch/Coupler





Operating Instructions

1. To open - slide forward and pull up to open latch before inserting ball.
2. Place coupler on ball of same diameter as coupler and of same or greater capacity.
3. When ball is completely nested in socket, push top of latch handle rearward until handle snaps into closed position. Extend jack to ground and lift tow vehicle/trailer combination 2 to 4 in. to ensure coupler is securely attached to tow ball. Retract jack before towing.
4. Insert padlock or hitch pin through hole in handle while traveling or for theft-prevention purposes.

⚠ WARNING
Always open latch handle before inserting ball into coupler.

⚠ WARNING
Always use a 2" ball for your hitch. An improperly sized ball can decouple — which could result in either a serious accident and/or extensive damage.

Liquid Petroleum Gas (LPG) - <u>Optional Equipment on all Trillium Models</u>

Under the removable fiberglass cowling at the front of your L'air Camper, you will find the LPG tank, regulator and fill valve connections.

Fill Valve

The LPG tank is equipped with an RV Type I Acme fill valve connections. The large, green, nylon swivel connection nut is right-hand thread — designed for hand operation only.

The valve features an internal spring-loaded module that will not allow gas to flow from the cylinder until a positive seal has been made. The valve outlet has 1-5/16 in. Acme right-handed threads on the outlet exterior and female POL, left-handed threads on its interior. This feature allows for connection of the Acme RV connection while still accommodating the standard left-handed POL fittings used for filling propane cylinders. The connection is made hand tight.

The mating, green swivel nut and brass nipple also incorporate new features: the green nylon nut swivels on a black bushing that is heat-sensitive. Between 240 and 300°F, the bushing will yield (melt) allowing the spring- loaded module in the valve to push the brass nipple back (approximately 1/4 in.), closing the module and stopping the flow of gas from the cylinder. Inside the brass nipple is a flow-limiting device designed to sense excessive gas flow. If an excessive flow is sensed, the flow-limiting device shuts the flow down to a maximum of 10 SCFH (Standard Cubic Feet per Hour) or less. This is also referred to as the bypass flow.

Bypass flow is extremely important in the proper operation of this connection. The flow-limiting device may activate if the cylinder valve is opened quickly. When all appliances are off, the bypass flow allows the pres-

sure downstream from the flow-limiting device to equalize. When pressure is equalized, the flow limiting device will supply normal flow to the system. Equalization occurs in approximately 5 seconds and, in most cases, goes completely unnoticed.

If, however, an appliance is left on or there is a leak or open flow in the system, the bypass pressure will not be able to equalize and allow the flow-limiting device to reopen. Symptoms of this condition would be appliances that light but have lower than normal flame or starve out from lack of gas, a substantial reduction in the flame when another appliance is operating, or pilots that are difficult to light. If this should happen, the following steps should eliminate the condition:

1. Close LPG cylinder valve.
2. Extinguish all flames and smoking materials.
3. Be sure all gas appliances, including their pilot lights, are off.
4. Open LPG cylinder valve slowly. Do not snap open.
5. Wait at least 15 seconds before lighting appliances.
6. If operational difficulties continue, there may be a leak in the system. Immediately close the LPG cylinder valve and have the system inspected by a qualified RV service technician.

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⚠ WARNING
Leaking LPG may ignite, causing a fire or explosion, which could result in serious bodily injury, property damage, and/or death.

How long a full tank of gas will last is dependent on usage. In cold weather when you are using the furnace, large amounts of hot water, and are doing extensive cooking, you will naturally use more gas than you will in warm weather when you may do limited cooking. On the average, with normal cooking and other appliance use, you can probably count on two to three weeks of service from each tank.

⚠ WARNING
LPG regulators must always be installed with the diaphragm vent facing downward. Regulators that are not located in compartments have been equipped with a protective cover. Make sure the 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.

LPG Tanks

The following procedure outlines the proper method of removing and installing LPG bottles:

1. Disconnect the rubber gas line at the tank to be removed. (The green nylon nut is a right-hand thread and no tools should be used.)

2. Turn the wing nut on the ring screw counter clockwise until the hold-down ring is loosened enough to be able to remove the tank.
3. After re-filling or changing bottles, tighten the wing nut until the tank is held firmly in place.
4. Re-connect the rubber gas line by hand-tightening green nylon nut to the tank. (Again, right-hand thread.)
5. Test fittings with ammonia-free and chlorine-free liquid soap or products designed for testing, such as Snoop® liquid leak detector.

If you have allowed the tank to run out, air may have gotten into the lines. In this event, the air must be forced out through the lines by gas pressure before you will be able to light the pilots. Hold a match to the pilot of the appliance closest to the tank until it lights and stays lit. Then move to the next-closest appliance, etc.

NOTE: Use only the LPG tanks furnished with your trailer. If replacement is required, it must be a bottle of the same size and design.

⚠ WARNING
Your LPG tanks must be filled as directed by the tank manufacturer. Instructions are located on a decal near the fill valve. The decal must not be defaced.

⚠ WARNING
The LPG tank is securely mounted under the cowling at the front your trailer. If this tank must be removed for service or replacement, it is important that it be reinstalled correctly in order to prevent any possibility of it becoming dislodged during travel.

Basic Rules For LPG Safety

A warning label is displayed in the cooking area reminding you to provide an adequate supply of fresh air for combustion. The amount of oxygen supply in a trailer is limited due to its compact design. When using the cooking appliances, proper ventilation will prevent 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.

⚠ DANGER
A warning label has been located near the LPG container. This label reads: **DO NOT FILL CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY**. Overfilling the LPG container can result in uncontrolled gas flow, which can cause fire or explosion. A properly filled container will contain approximately 80 percent of its volume as liquid LP gas.

⚠ WARNING
Do not store LPG tanks within a vehicle. LPG tanks are equipped with safety devices that vent gas should the pressure become excessive.

⚠ WARNING

Do not use cooking appliances for comfort heating. Cooking appliances need fresh air for safe operation. Before operation, open an overhead vent or turn on an exhaust fan and open a window.

⚠ DANGER

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

⚠ WARNING

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

Twice a year, or after a long storage period, we suggest you take your unit in for a checkup and cleaning of the gas-operated appliances.

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.

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Layouts & Specifications

Standard Floor Plan

Bunk Bed Floor Plan

Bath Floor Plan

Layouts and Specifications (continued)

NOTE: All weights and measures in the following chart are listed to the best of our ability. Changes may occur from time to time and your production unit may vary slightly from the measurements listed.

Exterior Length (From Tongue to Tail) 1300/4500	13'8" / 15'2"
Exterior Width	6'7"
Exterior Height	7'6"
Double Bed Width (length 76") 1300 / 4500	46" / 54"
Interior Length	15'3"
Interior Width	6'6"
Interior Height	6'2"
Hitch Height - Unladen (ground to underside of coupler)	14"
Hitch Ball Size	2"
Tire Size	ST175/80R13 - LRC
Maximum Tire Inflation Pressure	50 PSI
Torque on Aluminum Wheels	110 Ft. Lbs.
Torque on Steel Wheels (Spare)	100 Ft. Lbs.
GVWR 1300 / 4500 (pounds)	2,200 / 2,700
Base Weight - 1300 / 4500 (pounds)	1,350 / 1,650
Fresh Water Capacity (litres)	50
Gray Water Capacity (litres)	None
Black Water Capacity (litres)	See Toilet Specs

Remember that GVWR is the MAXIMUM permissible weight of this trailer, fully loaded. It includes total weight at the axle and the tongue.

Measuring Hitch Ball Height

The proper height will vary according to the weight you carry and the tires you use. However, checking the height on your trailer is relatively easy:

1. With trailer parked on fairly level ground, measure from ground to bottom of frame, front and rear.
2. Adjust front jack until measurements are equal.
3. Now, measure from ground to the inside top of the ball coupler. This figure is the hitch height. The hitch ball is then usually set 1/2 to 1 in. higher, according to the spring rate of your tow vehicle, to allow for it to settle when the trailer is hitched up.

Notes:

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Interior

General Information and Cleaning

The interior of all L'air Campers has been designed for comfort, convenience, durability, and appearance. How you use it and how you take care of it, naturally, depends on you. However, if you learn to operate the interior components, and take care of them and the trailer properly, this knowledge will add to your pleasure, as well as the life term of your trailer.

Interior Wall and Ceiling Covering

The interior walls and ceiling are covered with SunBrite II, 100% polyester, flat woven material. Clean by wiping down the fabric or hand washing with warm water and a mild soap solution. Simply rinse with clear water to prevent dirt from embedding itself into the fabric.

Interior Woodwork and Panels

The finish on the interior woodwork are high quality vinyl and gel coat finishes and should be treated as any fine furniture finish. Use a high-quality cleaner which does NOT contain ammonia or bleach. A good quality, non-abrasive dish detergent is always a good choice.

Counters and Table Tops

The counters and table top in your L'air Camper are made of a lightweight Quartz material and can be cleaned with soap and water. A protective pad should always be used under hot utensils or pans.

Vinyl Flooring

Use a soft broom to sweep the floor. A vacuum cleaner may damage the flooring. In most cases, a clean damp cloth or mop will suffice to clean dirty flooring. When necessary, a solution of mild detergent or domestic floor cleaning emulsion can be used to clean the flooring. Do not use a wire brush or nylon scouring pads, furniture polish, spirit-based polish, powder or liquid abrasive cleaners, bleach or other strong detergents. Scuffs, dirt, and spillages should be cleaned up as soon as possible.

Electrical

Maxxair Roof Vent

The high-volume roof vent system is designed to quickly exhaust stale, hot air and draw in fresh air. It is great to use when the outside temperature does not call for air conditioning, but heat has built up in your trailer.

Operation

1. Use the remote control, or the control buttons on the face of the fan itself, to turn on the fan. The outside cover will raise and lower automatically, as needed.
2. Adjust the speed and direction of flow with the remote control.
3. Open window(s) or door for airflow. The source of airflow is determined by the number of window(s) or door(s) opened. For best results open one window that is the greatest distance from the ceiling fan.

NOTE: Never cover the ceiling fans. This will greatly restrict airflow and increase sound levels.

Cleaning Instructions

1. Turn fan motor off.
2. Remove screen insert.

3. Clean screen with soap and water solution, dab dry with a soft cloth, and reinstall.

Interior and Porch Lighting

A switch just inside the door controls the porch light. There are numerous interior LED lights, each controlled with a button mounted in the center of the lens. Push the button to turn it on and again to turn it off.

Battery/12-Volt System Information

The major portion of electrical power in your camper is 12-volt.

All 12-volt current comes through the battery system. The battery, mounted under the outside propane cover, is a Lead Acid battery.

If you replace a blown fuse and it immediately blows again, do not replace the fuse again until a qualified service technician can correct the problem.

If the replacement fuse holds for a week or more and the gap in the fusible metal is barely melted apart, this usually indicates an overload condition. Reducing the number of lights or appliances used on that circuit at the same time could prevent any further fuse failure.

Battery Disconnect Switch

The battery disconnect switch is used to separate the batteries from the 12-volt distribution panel and converter charging system.

When the switch is turned to ON and the trailer is plugged into a 120-volt shoreline, the 12-volt distribution panel will receive power from the converter and the batteries will be charged through the converter charging system.

When the switch is turned to OFF and the trailer is plugged into a 120-volt shoreline, the 12-volt distribution panel will still receive power from the converter, but the batteries are disconnected from the system. The batteries will not be drained with the switch in the OFF position. The converter will not charge the batteries with the switch in this position.

The charge in the 12-volt batteries can be replenished, depending on the tow vehicle, from the tow vehicle alternator through the 7-way cord. This charge will flow to the batteries regardless of the battery disconnect switch position. Likewise, if on or off, the solar panel is still charging the batteries.

Converter

A converter transforms 120-volt AC into 12-volt DC. The converter/charging system is the interior low voltage electrical system that enables you to use the interior lights, fans, pumps, and 12-volt appliances, whether operating on self-contained battery power or 120-volt city power. The 12-volt light bulbs give off the same light as regular household bulbs, so that when operating on self-contained battery power, everything works normally except the 120-volt convenience outlets and 120volt appliances. The converter system is designed to maintain constant output voltages regardless of the variances that occur in city power systems.

The converter is energized only when the trailer is hooked up to external AC power.

To test the converter, observe the following:

1. Confirm 120-volt power is going into the converter.
2. Disconnect the 12+ wire from the master switch.
3. Using a voltmeter, check voltage output between heavy gauge positive and negative wires coming out of the converter.

NOTE: The voltage should be above 14.3 VDC.

If converter is not within these voltages, have it serviced by a qualified technician or replace it.

Converter Operation

The electronic power converter is designed to supply the nominal 12-volt-filtered DC power for all 12-volt operated devices encountered in RV service. Although the converter is an excellent battery charger, the converter does not require a battery to be connected to it for proper operation.

NOTE: When installing a battery (s), always observe polarity. Connecting a battery in reverse polarity will blow the power converter main fuses located on the attached fuse block.

120-Volt AC Panel Board

The AC panel board section contains the 120 VAC branch circuit breakers for your RV.
One of the breakers controls the 120-volt power to the 12-volt converter section. This breaker may also control another branch circuit. Check the label next to each breaker for what each branch circuit breaker controls.

The 120-volt circuits may be turned on by setting their breaker handle up, to the ON position, or off by setting the handle down, to the OFF position. To reset the tripped breaker, move handle to OFF then ON.

Breakers

The distribution panel was designed to use a 30 Amp 120Volt main breaker with branch circuits.

Double breakers may be used for the branch

circuits. Should a breaker become faulty replace with the same type breaker only. Use only approved circuit breakers and 12V fuses.

NOTE: When replacing circuit & breakers replace with the same type and rating as the original.

12 VDC Fuses

Each 12 VDC circuit in the distribution panel was designed for a maximum of a 20-amp automotive style fuse. Should one need to be replaced, be sure to replace it with the same type and Amp rating as originally supplied by L'air. Replacing it with either a higher or lower Amp fuse could result in the panel not functioning properly.

Reverse Polarity Fuses

The power converter is equipped with reverse polarity fuses, should these fuses "blow" either during the manufacturing process or while connecting the battery, check the battery connection for the correct polarity, then replace with the same type and rating fuse as originally provided with the equipment.

The power converter is not weather resistant nor designed for installation in wet locations. The power converter must be protected from direct contact with water.

120-Volt Electrical System

Shore Power

When your trailer is hooked up to external AC power, the converter system automatically charges the trailer battery(s) with the battery disconnect switch in the ON position. If the 7-way cord is hooked up and depending on your vehicle, your tow vehicle will charge the battery as well. The speed and degree of charge depends on how much power is used for lights and appliances, as only the surplus goes to charging the battery. If you are making an extended stay, then you should keep your trailer hooked up to a 120-volt current if it is available.

While you are connected to the 120-volt receptacle the wiring is protected by circuit breakers in the breaker panel. In the event of a failure of a 120-volt circuit, first check your trailer circuit breakers and the breaker for the outlet into which your trailer shoreline cord is plugged. If a breaker continues to trip after you have reset it several times your circuit may be overloaded with appliances, or there may be a short in the circuit. Try lessening the load on the circuit. Perhaps an electric griddle, hair dryer, or an electric heater can be turned off. If that does not solve the problem, consult your L'air Camper Co. Service Center.

The 120-volt electrical system provides power to operate the air conditioner, converter and 120-volt receptacles for portable appliances. The power is carded through the 120-volt city power flexible cord to the 120-volt distribution panel, and then is distributed to each appliance or receptacle.

All wire, components and wiring methods conform to federal and state requirements.

Converter

The converter system enables you to use the 12-volt lights and equipment whether operating on self-contained battery power or hooked up to 120-volt city power. The 12-volt light bulbs give off the same light as regular household bulbs, so that when operating on self-contained battery power, everything works normally except the 120-volt appliances. The converter system is a transformer designed to maintain constant output voltages regardless of the variances that occur in city power systems. The design eliminates the need for complex electronic sensing systems to charge the batteries, minimizing the possibility of failures and greatly increasing its overall reliability.

In some older parks and other locations where three pronged outlets are not available, certain precautions to ensure proper grounding and polarity must be taken. These precautions are listed below:

1. Attach the three-pronged plug to a two-pronged adapter. The third conductor line of this adapter has a short wire lead that must be grounded.
2. For proper grounding connect the short ground lead to a grounded outlet box or to a cold-water pipe. When no water pipe is available drive a metal rod two feet into the ground and attach the ground lug to it, thus providing the unit with proper grounding.

NOTE: When the three-pronged plug can be used, there will be no problems with proper polarity or grounding with a properly wired shoreline outlet.

Ground Fault Circuit Interrupter

Most jurisdictions require trailers with exterior 120-volt receptacles and receptacles close to a water sources such as a faucet, to have a ground fault-circuit interrupter. When properly installed the GFCI provides reliable overload and short-circuit protection, plus protection from ground faults that might result from contact with a HOT load wire and ground. Each GFCI is calibrated to trip with a ground current of 5 milliamperes or more. Since most people can feel as little as 2 milliamperes, a distinct shock may be felt if the need for protection exists. However, the shock should be of such short duration that the effects would be reduced to less than the normally dangerous level. However, people with acute heart problems or other conditions that can make a person particularly susceptible to electric shock may still be seriously injured.

While the GFCI affords a high degree of protection, there is no substitute for the knowledge that electricity can be dangerous when carelessly handled or used without reasonable caution.

⚠ WARNING
The GFCI provides protection only to the circuit to which it is connected. It does NOT provide protection to any other circuit.

GFCI(s) are proven lifesavers, however, consumers need to take a few minutes each month to perform this simple test. By doing so you can help protect your family from the risk of electric shock.

GFCI Receptacle

To properly test GFCI receptacles:

1. Push the Reset button located on the GFCI receptacle first to assure normal GFCI operation.
2. Plug a device, such as a night light, with an ON/ OFF switch into the GFCI receptacle and turn the product to the ON position.
3. Push the Test button located on the GFCI receptacle. The device should stop working.
4. Push the Reset button again. The device should start working again. If the device remains on when the Test button is pushed, the GFCI is not working properly or has been incorrectly installed (wired wrong). If your GFCI is not working properly, call a qualified, certified electrician who can assess the situation. Rewire the GFCI if necessary, or replace the unit.

NOTE: For all GFCI breakers we recommend a manual test be conducted every month.

Appliances

All appliances are delivered to L’air Camper Co. with in-depth owner’s manuals. Those manuals are included

in the delivery of the camper. The manuals may contain warnings, cautions and operating instruction that should be read and followed before operating the appliances. The information contained in the appliance manuals supersedes any information contained in the L'air Camper Owner's Manual. If you believe contradictory information on appliances is contained in this manual, or If any appliance manual(s) have not been provided with your trailer, contact your dealer, the respective appliance manufacturer or L'air Camper Customer Service

Maintenance

Follow the instructions and warnings noted in the respective appliance and equipment owner's manuals, as well as those mentioned below. Annual maintenance should be conducted on propane gas appliances and equipment by an authorized dealer or repair facility. Insects can build nests in the burners of various appliances and equipment. The burner and burner orifice of the propane gas appliances and equipment should be cleaned out by an authorized dealer or repair facility anytime circumstances or conditions warrant, but no less than on an annual basis.

Cooktop

The gas burners use propane gas for fuel. Operation is like the stove in your home. Cook temperatures will vary depending on the altitude. Before turning on the main propane supply, be sure all burner and control knobs are in the "OFF" position.

NOTE: Cooking appliances need fresh air for safe operation. Before operation open window.

The warning label is 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 danger 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 extended periods of time. Never use portable fuel-burning equipment, including wood and charcoal grills and stoves inside the vehicle because a fire or explosion may result.

⚠ DANGER
NEVER use this appliance as a space heater to heat or warm the room. Doing so may result in carbon monoxide poisoning and/or over heating of the appliance.

NOTE: If the appliance has not been operated for a period, the surface burners may be difficult to light, as air may have accumulated in the gas line.

Operating Cooktop

The burners can be lit with the electronic ignition. Be sure all control knobs are in the OFF position before supplying gas to the appliance. Be sure the main LP gas supply is on before lighting the burner, then follow these steps:

1. Know which knob controls which burner. Always be sure the correct burner is turned on.
2. Depress knob and turn fully counter-clockwise to "Light" position. Keep knob depressed.
3. If any burner should extinguish after initial lighting or due to accidental blowout, turn gas off by turning control knob clockwise to "OFF", wait five (5) minutes before attempting to relight the burner. Failure to follow these instructions could result in a fire or explosion. If the burner should go out while cooking, or if there is an odor of gas, turn control knob(s) clockwise to "OFF". Wait five (5) minutes for gas odor to disappear. If gas odor is still present - Do not relight burners. See "What To Do If You Smell Gas" in the

"Safety" section of this manual.

4. To turn burner(s) "OFF", turn the appropriate control knob clockwise to "OFF".

   NOTE: Turn off the cooktop and allow it to cool before closing the range cover. The range cover is made of glass and may shatter if heated.

SYMBOL	DESCRIPTION
	Light / High Flame
	Low Flame
	Ignition Switch

CAUTION
Hand held ignitors may be used but be sure they are the type designed for lighting open flame burners.

Truma Combi Furnace and Indirect Water Heater—Optional Equipment

The heating system in your camper is a propane and 110V power unit that provides warm forced air for heating and supplies hot water through an integrated boiler.

NOTE: ***Read the Manufacturer's Operation Manual for complete Safety Warnings, Operating Instructions, and Maintenance Information before operating the heating system.***

The control panel controls interior heating temperature, water temperature, and allows you to select energy sources for the system.

1. Display
2. Status Line
3. Menu Line (top)
4. Menu Line (bottom)
5. Power supply display 120VAC (mains supply)
6. Time Switch Display
7. Settings/Values
8. Rotary Push Button
9. Back Button

ROTARY PUSH BUTTON: used to select menu items and to adjust settings.

- Turn clockwise or counterclockwise to scroll through the menu.
- Turn clockwise to increase values (+) and counterclockwise to decrease values (-).
- Tap to save a selected value.
- Press for three (3) seconds to turn the control panel on/off.

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a. Verify sufficient gas supply before attempting to light the burner. Air in the gas line will significantly delay burner ignition. The burner may light unexpectedly as the air in the line clears and is replaced by LP gas. This unexpected ignition could burn you. Air in the gas lines may occur after the vehicle gas bottle and/or tank is refilled, during and after servicing other appliances on same gas line, etc.
b. Do not attempt to light more than one burner at a time.

- BACK BUTTON: used to go back to the previous menu or to cancel a setting.

Truma Control Panel

Important: The Combi should not be confused with a demand water heater. Managing the water temperature and how the water is heated is a new concept to many seasoned RV owners, too!

Energy Sources for Your Combi

- 120V Electric: The Combi has a pair of 850-watt (@ 120V) heating elements. While this may sound impressive, the average electric water heater in your home is in the 4,500- watt (@ 240V) range. The Truma can operate one element at a time (i.e., 850 watts with one element (EL-1) or 1,700 watts with both elements heating (EL-2).
- Propane Gas: The burner produces 7,500 BTU/hr. on low burner and 14,300 BTU/hr. running full tilt. You do not have control over this...the Truma will determine the output it needs. Note: For an approximate comparison, 7,500 BTU/hr. = 2,200 watts and 14,300 BTU/hr. = 4,200 watts.
- Combined Electric and Propane: In Mixed Mode, the Combi will alternate/cycle the electric heating element(s) and the gas burner for several minutes at a time. Not only does this conserve propane, it allows the Combi to determine which fuel source is required to continue heating the RV sufficiently.

NOTE: While the L'air Camper has a fairly small LP tank capacity, you'll be able to get several nights of heat without emptying the tank. The Truma-Combi is amazingly efficient, running in the 90 percent range on propane.

Tips for Your Showering

Some preplanning is required here, especially for your first shower.

1. On your Truma Control, select Gas – It's the best heat source for your shower.
2. Set the water temperature to 140 degrees and allow time for the Combi to raise the water temperature to this set point.
3. Once you have managed to get a good shower in, stop wasting energy! Revisit the Truma control panel and turn the temperature setting down to 104. You can switch back to EL1 or EL2 if plugged into shore power, or consider turning the unit OFF if you don't need water the rest of the day.

Further Information

Refer to the manufacturer's user guide provided in your Owner's Packet for complete operating instructions, safety precautions, troubleshooting, and maintenance information.

Air Conditioner - Optional Equipment

The air conditioning unit can only be operated when the vehicle is attached to a 120V A/C power supply. For best performance, park the trailer in the shade and keep the curtains closed. Before operating the air, close all doors and windows. Refer to the air conditioner manufacturer's instructions for detailed operation and preventative maintenance requirements. Remember that this appliance requires a substantial portion of your available electric power.

Refrigerator

Review all refrigerator literature supplied in your owner's packet or stored in the refrigerator prior to operating. Any time the trailer is parked for several hours with the refrigerator operating, the trailer should be leveled to prevent the loss of cooling. The trailer needs to be leveled only so it is comfortable to live in (no noticeable sloping of floor or walls). When the trailer is moving, leveling is not critical, as the rolling and pitching movement of the trailer will keep the liquid ammonia from accumulating in the evaporator tubing.

An RV refrigerator is not intended for quick cooling or freezing. For best results, stock with food that is already cold or frozen.

- Food items should be arranged so air can circulate freely.
- DO NOT cover the shelves with paper or plastic.
- Keep the area at the back of the refrigerator clean and free of debris.
- Check that the exterior Refrigerator Vent is free of any obstructions (i.e., spider webs, bird nests, etc.). ◦ Use a soft cloth to dust off the debris.
- For optimum efficiency and performance, the refrigerator should be checked at least twice a year as part of routine maintenance.

Operation

The refrigerator requires 12 VDC current to operate. The 12 VDC is used to power the circuit board that directs the refrigerator functions as well as the compressor. All models are equipped with a fan inside the exterior refrigerator compartment. This fan pulls ambient temperature air across the condensation coils on the back side of the refrigerator to aid in the cooling. The fan operation is automatic and built into the fan assembly. The fan is thermostatically controlled and increases the cooling efficiency of the refrigerator.

Entertainment system — Optional Equipment

Due to the large selection of televisions used in the manufacturing of L'air Campers, it is impossible to list all of them in this manual. For detailed information regarding the specific television installed in your camper, please refer to the television manufacturer's user guide included in your L'air Camper Co. Owner's packet.

Monitor Panel

The Monitor Panel measures and displays information regarding levels for water (optional) and batteries. The level, in percentage of full, is shown on an easy to read LED display.

Sometimes, residue on the sides of a tank or water with a low mineral content will give a false reading. Check the levels occasionally when you are sure of the tanks contents and compare it to the reading on the monitor panel. If you are concerned about the accuracy of the monitor panel, have it checked at your local service center. The SeeLevel monitor panel may also have the water pump switch.

Water Pump

The water pump switch is located with the other system control switches on the upper galley, just inside the camper door. Once the switch is turned on, the pump will run until the water pressure reaches about 55 PSI. At that point, an internal pressure switch will shut it off. When a faucet or toilet is operated, the pressure will drop and the pump will run automatically. The pump is not equipped with a dry tank shut-off switch. Turn the pump switch OFF if water in tank becomes depleted or when system is not in use.

As a general rule, the water pump should be turned off while using a city water hookup, however the water pressure at some campgrounds may be low. The water pump can be turned on to assist the city water hookup pressure. Be sure there is some water in the fresh water tank. The pump will only use the water that is needed out of the tank to bring the pressure up to the usual standard of 55 PSI.

Access to the water pump will be necessary for periodic cleaning of the strainer screen. Refer to Section 8 - Maintenance for water pump access and strainer screen removal.

Water Tank Fill

The fresh water system should be sanitized at the initial filling, after a period of storage or if contaminated. Fill tank slowly. Do not overfill. Do not leave unattended while filling. Structure damage may occur, the fresh tank holds 13 US gal.

Filling the fresh water tank:

1. Close water tank drain petcock located at the side of the camper.
2. Open cap on fresh water fill inlet.
3. Using a 3/8” hose adapter, fill the water tank through the exterior fill spout slowly at a low volume until water overflows out of the vent. Do not force water into spout since air in the tank must be released during filling. Do not put the potable water hose into the mouth of the fill.
4. Set pump control switch to ON.
5. Open each faucet one by one until water flows evenly, and no air bubbles are evident.
6. Top off water tank through the exterior fill spout to replace water used in filling the water heater and purging the water lines of air.
7. Close cap and lock the access door.

City Water Connection

External Hook-Up

Water provided from outside the recreational vehicle is pressurized by the system from which it is delivered. When you connect your recreational vehicle to an outside source, the fresh water tank and the water pump are kept separate from the remainder of the system by in-line check valves. Your camper is outfitted with a system designed to provide fresh (potable) water service from an onboard water tank or a city water connection with a fresh water tank fill located on the roadside of the camper.

When connecting to the city water hookup, use only a non-toxic water hose, available at most camper supply stores. Since water pressures at campgrounds and household hookups vary, you should install an inline pressure regulator at the water supply faucet. This will protect both the camper water system and supply hose from excessively high water pressure.

Attaching to an Outside Source of Water

1. Remove the cap from the fresh water inlet on the side of the camper.
2. Attach one end of the fresh water hose to the outside source of water with a water pressure regulator.
3. Connect the other end of the hose to the camper city water inlet.
4. Turn on the outside source of water. Gradually open the hot & cold water at the sinks and shower to clear air from the lines.
5. Close the faucets when the water is flowing freely.

NOTE: Do not turn on the water pump when using water from an external source. Only use the water pump when obtaining water stored in your fresh water tank.

To Disconnect from the Outside Water Source

1. Turn off the outside source of water.
2. Disconnect the hose from the supply valve and the recreational vehicle inlet.
3. Remove the hose and store it.
4. Reinstall the cap on the recreational vehicle inlet.

When an outside source of water is unavailable, water can be drawn from the fresh water storage tank in the camper. The tank is filled through a gravity controlled water spout on the exterior of the vehicle.

It's a good idea to purchase a pressure regulator to protect your camper from possible damage due to excessive water pressure.

To supply city water to your camper's water system and bypass the water pump:

1. Attach a potable water hose to the exterior city water inlet connection.
2. Pump switch should remain in OFF position.
3. Open each faucet until water flows evenly.

Traveling with Water

When traveling, you may want to drain the tank or keep the quantity of water to a minimum. This will reduce the total weight of the camper for travel. The location of the fresh water drain is in front of the driver's side wheel and the waste water tank drain valve is in the front left corner of the camper.

NOTE: When draining the entire onboard fresh water system, be sure to open faucets, water heater drain and system low-point drains to remove all fresh water from the system. Be sure the water pump is turned OFF.

NOTE: When leaving the camper for extended periods, it is advisable to shut off the water supply at the park spigot.

Water System Drain

The water system should be drained if it will be out of service for more than one week. This will prevent algae

and bacteria contamination of your fresh water system.

To Drain Your Camper:

1. The camper should be level and pump control switch in OFF position.
2. Open all faucets and shower-head.
3. Open water tank drain valve
4. Open water line low point drains usually located in or under shower area.
5. Open water heater drain and relief valves. (see Winterization and Storage section for
6. more info.)

Sanitizing Fresh Water System

Sanitize the fresh water system and piping at initial use, at least once a year and whenever the camper sits for a prolonged period. This will help keep the tank and lines fresh and will discourage the growth of bacteria and other organisms that can contaminate the water supply. Rinse the tank with a chlorine/fresh water solution as follow:

1. Drain water system.
2. Prepare a chorine solution using a gallon of water and ¼ cup of liquid household bleach (5% sodium hypo-chlorinate solution). Use one gallon of solution for each 15 gallons of tank capacity.
3. With an empty tank and all faucets and drains closed, pump into the tank, via the potable tank fill, either with a manual or electric water pump. Or pour 1/2 cup of bleach (1/4 cup per 15 gallons of capacity) into the hose before connecting it to the water source. The water source pressure will push the chlorine and water into the tank, making the correct solution when the fresh water tank is full.
4. Completely fill the tank with fresh water.
5. Switch on the water pump. Open all faucets one at a time until all air is purged and the water flows freely.
6. Again, add fresh water to the tank until the water level reaches the fill spout.
7. Allow the solution to stand in the tank, undisturbed, for at least three (3) hours.
8. Drain the system by opening all faucets and the fresh water tank drain valve while flushing the system with fresh water of drinking quality.
9. Continue flushing the system, allowing the water to flow for several minutes. Close the tank drain valve and all faucets. Refill the system with water of known drinking quality.

Water Filter

An in-line water filter attached to the inlet side of the water pump filters dirt, mineral scale, or organic matter out of the fresh water system. If you suspect a clogged filter, it is easily removed and cleaned. Disconnect the supply riser from the filter. Unscrew the filter from the water pump. Flush out and clean screen.

Inspect the filter after the first 90 days of use, clean it if necessary, and inspect annually thereafter.

Shower

The shower is controlled with the diverter on the water closet counter. The balancing control can be adjusted to obtain the desired temperature while the water is still directed into the sink spout. Once the desired shower temperature is reached, you can use the diverter to activate the shower head flow.

> **NOTE:** For your protection, this shower/sink faucet is equipped with a vacuum breaker (back-flow preventer) to prevent contamination of your potable water supply.

Exterior Shower

The exterior wash station is in the sidewall on the driver's side compartment for exterior use. It uses water from the fresh water tank or when connected to the city water hookup.

Waste System—Optional Equipment

The waste holding system in your camper is made up of sinks, shower and vent lines and 25 US gal. gray water holding tank. The holding tank makes the system completely self-contained and allow you to dispose of wastewater at your convenience. A flexible sewer hose is used to connect the holding tank outlet to the inlet of an approved wastewater dump station or sewer system. The holding tank is made of seamless plastic that will not corrode. On most units with dual tanks, one retains toilet waste and the other retains liquid waste from the sinks and shower. Drain all wastes at an approved site.

Waste Water Holding Tanks—Optional Equipment

The waste water system in your recreational vehicle can be described as two separate systems. A gray water system that consist of the drain lines and holding tank for waste water from the sinks and shower. The black water system is the self-contained cassette toilet.

Each system is self-contained and allows disposal of waste water at designated dump stations at your convenience.

Residue in the drain water lines can also produce odors. To combat gray water holding tank odors, an approved deodorizing agent should be used. An agent that dissolves grease and fats and contains a detergent will help keep tanks and the lines clean and free flowing. You can obtain the deodorizer at most campgrounds and stores that carry camping equipment.

Cassette Toilet

> **NOTE:** See the toilet manufacturer's user guide provided in your Owner Packet for complete operating instructions, care and cleaning instructions, and safety precautions.

The toilet in your camper has a "self-contained" black water holding tank, which you need to empty when full. The waste holding tank is located in the driver's side forward compartment.

See "Before Use" in the toilet manufacturer's user guide provided in your Owner Packet for complete instructions before using the toilet.

When the Level Indication slide turns from green to red, the waste holding tank is full.

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To open the waste holding tank compartment, use the key (located on key ring) to unlock the compartment door then push both buttons in at the same time while pulling the door open.

See the toilet manufacturer's user guide provided in your Owner Packet for complete instructions on emptying the waste holding tank.

Important "Don'ts"

- Unnecessary, frequent flushing of the toilet will quickly deplete your fresh water supply and fill your holding tank.
- Don't use facial tissue or regular toilet tissue in the RV toilet. These will not disintegrate sufficiently and will often cling to the sides of the holding tank. Toilet tissue made specifically for use in RV toilets and holding tanks is available at most RV supply centers.
- Don't dispose of sanitary napkins or other non-dissolving items in the toilet.
- Don't put automotive antifreeze or caustic chemicals, such as laundry bleach or heavy detergents into the toilet or holding tank. These products may damage plastic or rubber parts in the system.

Gray Water Holding Tank

The drain systemin your camper is self-contained and uses a holding tank to contain the waste water until it can be dumped at an appropriate waste water disposal site. This means you can use the sinks and shower even in areas where utility hookups are not available.The gray water holding tank contains the waste water from the galley sink and shower.

Draining the Gray Water Tank

1. Remove sewage drain hose from water service center.
2. Remove dust cap from sewage drain outlet and connect sewage drain hose. Be sure it is firmly attached.
3. Place the outlet end of sewage drain hose into disposal opening.
4. Open the Gray Waste Tank Drain valve. Be sure there are no sags in the hose to ensure complete drainage. Close Gray Waste Tank Drain valve as soon as tank is empty.
5. Add an odor control chemical to the sewage holding tank through the shower drain. These chemicals are available at most RV stores.
6. Rinse sewage drain hose thoroughly with water before stowing.

NOTE: We recommend that you dump all holding tanks before traveling to avoid carrying unnecessary weight.

Using On-Site Sewer Hook-Ups

The sewage drain hose may remain attached to the sewage drain outlet while the motorhome is parked and connected to an on-site sewage hook-up Always use chemicals in the black water system that are made especially for this purpose.

When using a sewer hook-up, keep the dump valves closed until a tank becomes full or when preparing to leave the site. This keeps the solids in suspension, allowing them to be carried out with the liquids when the dump valve is opened. If the valve is left open, the liquids will drain off, leaving solids in the tank. Should this accidentally happen, disconnect the hose, fill the tank about half full with water, and drive a few miles to dis-

lodge the solids. A few starts and stops will aid in the process. Then reconnect the hose and drain in the normal manner.

NOTE: Always keep sewage drain outlet capped while sewage connection is not in use.

If the drain system does get clogged:

Use a hand-operated probe to loosen stubborn accumulations.

Seriously clogged P-traps or Hepvo traps may require disassembly. Be careful not to over tighten when reassembling.

Do not use harsh household drain cleaners. Do not use motorized drain augers.

Sometimes the holding tank valve will get clogged. In this case, a hand-operated auger may be necessary. Be ready to close the valve quickly once the clog is cleared. If the seal gets damaged, it must be replaced.

Water System Maintenance and Troubleshooting

As with any mechanical system, your plumbing is subject to the development of problems. Most of these problems can be greatly reduced, if not eliminated, by following a schedule of planned inspections and maintenance. Neglect of proper maintenance procedures is the usual cause of most water system problems.

Road vibrations and shocks, as well as excessive pressure from some city water sources, are the main physical causes of water system damage. It is important to inspect all plumbing joints and fittings often for cracks and leaks. If left unchecked, water leaking from a plumbing joint can cause considerable damage.

A leak in the fresh water system should be suspected if the pump is running and all faucets and valves are closed. When the leaking fitting has been identified, attempt to stop the leak by tightening the fitting. DO NOT over-tighten. Plastic fittings rarely need to be tightened with a wrench. If these fittings leak after tightening by hand, disconnect the fitting and check for dirt, scale, or other foreign substances which may be causing the leak. Clean the fitting thoroughly and reinstall. If leaking persists, shut off the water supply until the fitting can be properly replaced. Check with your dealer for the correct method of replacement and replacement parts.

Proper winterization procedures of plumbing systems will normally be all that is necessary to prevent the damage caused by freezing. Freezing damage can harm any component of the system, including the water tanks, toilet, pump, and all piping. Be sure to follow the winterization procedures outlined in this manual. Also, be sure to discuss with your dealer or repair center any additional precautions that should be taken to winterize your camper's plumbing system. Local climates vary and winter maintenance needs may be affected.

Be sure to read the literature supplied with plumbing components, such as the water pump, for troubleshooting tips. Also, remember that it is possible for an electrical problem to cause water system problems. Lack of power to the pump can be caused by a variety of reasons.

If you are unsure of how to locate and/or repair a plumbing problem, it is best to have your dealer or a qualified plumber who is familiar with the camper water system to inspect the system and perform any repairs needed

Notes:

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Camping

Suggested Pre-Travel Check List

Interior

1. Turn off water pump switch.
2. Check battery water level. 3. Close windows and vents.
3. Lock all interior cabinet doors.
4. Latch refrigerator door. (Seal containers first)
5. Hold down or stack securely all loose, hard, and sharp objects.
6. Fasten sliding and foldette doors.
7. Drain toilet bowl.
8. Turn off interior lights.
9. Set table in upright position.
10. Pull up or retract step.
11. Lower blinds.
12. Secure and lock main door.

Exterior

1. Disconnect and stow the electrical hookup cord, and the sewer (flush out) and water hookup hoses.
2. Turn off gas at LP tanks.
3. Retract stabilizing jacks.
4. Check hitch for proper attachment.
5. Check safety chains and breakaway switch cable.
6. Fully retract hitch jack. Remove and stow jack stand or wood block.
7. Check clearance and stoplights.
8. Check lug nuts.
9. Check tires for correct pressure.
10. Adjust tow vehicle mirrors.
11. Pull forward about 50 ft, test brakes, and check site for forgotten objects and cleanliness.

Trailer Equipment and Accessories

1. Water hose, 5/8 in. high pressure, tasteless, odorless, non-toxic, (2 25-ft. sections)
2. Y connection - water hose
3. Sewer hose with clamp
4. Drain cap with hose drain

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5. Holding tank cleaner and deodorizer
6. Power cord adapter, 30-amp capacity
7. 30-ft. electric cord, 30-amp capacity
8. Wood blocks for leveling
9. Wheel chocks
10. Hydraulic jacks
11. Cross-type lug wrench and a torque wrench
12. Quality tire gauge
13. Emergency road warning triangle

Motoring Essentials

1. Display the tow vehicle and trailer registration properly.
2. Carry driver's license.
3. In Canada, bring along a non-residence liability insurance card and your birth certificate.
4. In Mexico, you must have special auto insurance.
5. Carry an extra set of the ignition and truck keys in a separate pocket, or in your wallet.
6. Keep an operating flashlight with fresh batteries in the glove compartment.
7. Pack the trunk so that you can reach the tools and spare tire without completely unpacking.
8. Keep sharp or hard articles securely packed, wherever they may be.
9. Do not pack things in the passenger seating area. You will need the maximum space for comfort.
10. Wear easy wash, drip-dry traveling clothes.
11. Do not make your vacation trips a mileage marathon. Stop and relax frequently.
12. Carry a first-aid kit.
13. Carry your pet's dish, food, leash, and health and registration papers.

Overnight Stop

L'air Camper owners have parked virtually in every place imaginable, from filling stations to farmlands. In time, you'll develop a knack for spying wonderful little roadside locations by turning off the main highway and exploring.

There are many modern parks, including State, County, and Federal parks with good facilities where you might obtain hookups of electrical, water, and sewer connections. Directories are published which describe in detail these parks and tell what is available in the way of services and hookups.

On overnight or weekend trips, chances are you will not use up the capacity of the sewage holding tank, deplete the water supply, or run down the batteries that supply the 12-volt current.

On a longer trip, when you have stayed where sewer connections and utility hookups were not available, it will be necessary for you to stop from time to time to dispose of the waste in the holding tank and replenish the water supply. Many truck stops and gas stations, chain and individually owned, have installed sanitary

dumping stations for just this purpose. Booklets are available that list these dumping stations.

When stopping for the night, your L'air is built to be safely parked in any spot that is relatively level and where the ground his firm. Your facilities are with you. You are self-contained. Unless the tow vehicle is needed for transportation, it is not necessary to unhitch.

⚠ WARNING

At each campsite, make sure you have not parked in such a manner as to block the operation of the escape window by being too close to trees, fences, or other impediments. Scenic views are one reason for traveling, but don't park so the beautiful lake or steep cliff is just outside your escape window.

Choose the most level parking spot possible. Stabilizing jacks or blocks may not be required for an overnight stay. However, if you put the jack pad on the hitch jack and run the hitch jack down to take the weight off the tow vehicle's springs, it will provide some stability. If you must park on a slope, park facing downhill. It is easier to level the trailer this way.

All you need to do to enjoy the self-contained luxury of your L'air Camper is to turn on the LPG and light any appliance pilot lights.

Before moving on, check your campsite, both for cleanliness and also, to be sure you haven't left anything behind. Turn off the gas supply and make sure everything is properly stowed. Use your pre-travel check list and you are ready for more travel adventure.

Extended Stay

Making a long trip in your L'air Camper is not very different from making a weekend excursion. Since everything you need is right at hand, you are at home wherever you go. When packing for an extended trip, take everything you need, but only what you need.

When you plan to stay in the same place for several days, weeks, or months, you will want your trailer to be as level and steady as possible. Check the attitude with a small spirit level set on the inside work counter or the trailer hitch A-frame. If a correction is necessary, you must level from side-to-side first. This can be done easily by backing the trailer up onto one or more 2 x 6 boards. We do not recommend placing tires in a hole for leveling.

Leveling

Level from front to rear: 1) block or chock the wheels to keep the trailer from rolling; 2) place the jack pad or caster wheel under the hitch jack; 3) disconnect the hitch, safety cables, breakaway switch cable and wiring harness from the tow vehicle; 4) adjust the jack up or down until you are level. Then use the stabilizing jacks at all four corners to eliminate the natural spring action of the axles.

⚠ WARNING

Stabilizing jacks should only be used to stabilize trailer. Do not use jacks to lift the trailer.

Whenever the trailer must be lifted with a jack, as when changing a tire, always place the lifting jack under the main frame rail. A label is provided to indicate the proper position for the jack. Never use stabilizing jacks to lift the trailer.

Effects Of Prolonged Occupancy

Your trailer was designed primarily for recreational use and short-term occupancy. If you expect to occupy the trailer for an extended period, be prepared to deal with condensation and the humid conditions that may be encountered.

Moisture can condense on the inside surfaces of the trailer during cold weather when relative humidity of the interior air is high. This condition is increased because the insulated walls of a recreation vehicle are much thinner than house walls. Also, the relatively small volume and tight, compact construction of modern recreational vehicles means that the normal living activities of even a few occupants will lead to rapid moisture saturation. Estimates indicate that a family of four can vaporize up to three gallons of water daily through breathing, cooking, bathing, and washing. Unless the water vapor is carried outside by ventilation, or condensed by a dehumidifier, it will condense on the inside of the windows and walls as moisture, or in cold weather, as frost or ice. It may also condense out of sight, within the walls or the ceiling, where it will manifest itself as warped or stained panels.

Appearance of these conditions may indicate a serious problem. When you recognize the signs of excessive moisture and condensation in the trailer, action should be taken to minimize their effects.

Tips To Controlling Condensation

Allow excess moisture to escape to the outside when:

- Bathing, washing dishes, hair drying, etc
- Laundering, and using appliances and non-vented gas burners
- Cooking (always open the window near the stove)
- Using a fan to keep air circulating.
- Leaving closet and cabinet doors partially open.

To help alleviate cold weather condensation:

- Keep the temperature as reasonably cool during cold weather as possible.
- Allow your trailer to breathe; do not make it airtight.
- Allow some warm air to be removed and some cool outside air in.
- Do not allow the furnace to recycle humid interior air, and provide reasonable ventilation.

In hot weather, starting the air conditioner early will help remove excess humidity from the air while lowering temperatures.

> **NOTE:** Your trailer is not designed, nor intended, for permanent housing. Use of this product for long-term or permanent occupancy may lead to premature deterioration of structure, interior finishes, fabrics, carpeting, and drapes. Damage or deterioration due to long-term occupancy may not be considered normal, and may, under the terms of the warranty, constitute misuse, abuse, or neglect, and may therefore reduce the warranty protection.

Mold

Molds are microscopic organisms that naturally occur in virtually every environment, indoors and out. Outdoors, mold growth is important in the decomposition of plants. Indoors, mold growth is unfavorable. Left unchecked, molds break down natural materials, such as wood products and fabrics. Protect your investment

by understanding the potential risks that mold imposes.

Contributing Factors To Mold Growth

For mold growth to occur, temperatures, indoor or outdoors, must be between 40° and 100°F, and must also have a source of moisture, such as humidity, standing water, damp materials, etc. Indoors, the most rapid growth occurs with warm and humid conditions.

Inhibiting Mold Growth

By controlling relative humidity, the growth of mold and mildew can be inhibited. In warm climates, use of the air conditioner will reduce the relative humidity. Constant use of the powered ceiling vent is advised during food preparation and bathing, even during colder weather. Additionally, opening a window during these activities will assist in ventilation. In extremely humid conditions, the use of a dehumidifier can be helpful.

Frequent use of your trailer, or cleaning regularly, are important preventive measures. Additionally, any spills should be wiped up quickly and dried as soon as possible. Avoid leaving damp items lying about. On safe surfaces, use mold or mildew-killing cleaning products. Check sealants regularly, and reseal when necessary to avoid water leaks. Proper preventive maintenance to the trailer and its accessories, as described both in this manual and in accompanying literature, will provide the best protection to the trailer.

For more information concerning controlling moisture in the trailer, read Tips to Controlling Condensation in this section.

> **NOTE:** If using a dehumidifier, please read and follow all manufacturer instructions and recommendations for the use and cleaning of the dehumidifier.

Waste Water System

The main parts of the waste water system are the toilet and cassette tank, holding tank, and tank dump valve (See Maintenance Section for dump valve information). The system is designed to provide complete self-contained toilet facilities, while on the road or parked, without being connected to a sewage line. It may also be used in the stationary position while connected to a sewage hose.

Keep the dump valves closed with either method and empty the tanks when they are nearly full. The idea is to send a large volume of water through the tanks and hose at the same time to float solids away.

After the sewage tank has been emptied, close the gate valves and put approximately five gallons of water in the sewage holding tank using the black tank flush inlet. This will spray the interior of the tank with water and help prevent solids from building up in the sewage holding tank. The addition of a deodorizing agent like Aqua-Kem® will help prevent odors.

Should you ever have a buildup of solids, close the valves, fill the tanks about 3/4 full with fresh water, drive a distance to agitate the solids, and drain the tanks.

Things Not To Put Into Toilet Or Drains

- Facial tissues (they do not dissolve like toilet paper).
- Automotive antifreeze, ammonia, alcohols, or acetone.
- Table scraps or other solids that may clog the drains.

Winter Traveling

Traveling in sub-freezing temperatures will require certain precautions to protect the plumbing system and

your personal belongings from being damaged by freezing.

Whenever possible, the heat should be kept set to a constant temperature. It is easier for the furnace to keep a constant room temperature than allow the trailer temperature to drop to 50°F, then attempt to raise it to room temperature.

The furnace on L'air Camper models is Optionally ducted to provide heat to the below floor water tanks and plumbing to prevent freezing.

Some states do not allow LPG to be turned on while moving. While traveling in these states, simply use your common sense. How cold is it? How long will it be before you can turn the heat back on? Is the temperature dropping or rising? Remember, when towing at 50 MPH, the wind chill factor will cause the interior of the trailer to cool much faster than a parked trailer.

When parked in sub-freezing temperatures, make sure to keep a full supply of LPG and plug into a 120-volt power source whenever possible.

Leave cabinet doors, wardrobes, and bed doors partially open to allow warm air to circulate around plumbing lines and fixtures. Insulate and/or wrap your exterior water lines with heat tape.

> **NOTE:** Drain and winterize all models if the water systems are not being used during winter traveling. Refer to Section 8 - Maintenance in this manual for winterizing instructions.

Safety

As always, safety should be a top priority. Ensure that you, and everyone traveling with you, can operate the main door and emergency exit window rapidly, without light. Contemplate other means of escape in case the designated exits are blocked.

The escape windows(s) are identified by their red release handles. Rotate ALL latches to release the escape window. Push out on the window and it will swing up.

⚠ WARNING
The window operation should be checked before each trip and the latches lubricated with WD-40® or an equivalent lubricant every six months.

⚠ WARNING
Read the directions on the fire extinguisher carefully. If you have any doubts as to its operation, you and your family should practice, then replace or recharge the extinguisher. Your local fire department will be able to assist you and answer any questions.

⚠ WARNING
Don't smoke inside the trailer. Keep matches out of reach of small children. Don't clean with flammable material. Keep flammable material away from open flame. Always shut off the LPG gas at the bottles when fueling a tow vehicle.

Camping (continued)

We have all heard the above warnings many times, yet the situation or occurrences they discuss are still among the leading causes of fires.

Safety information concerning the LPG system of your trailer is located in the Section called “Exterior” in this manual.

Notes:

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Notes:

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Maintenance

The instructions and recommendations located within this manual and the accompanying manufacturer's component literature should be read, as failure to perform necessary or preventative maintenance may limit or void all or part of a specific warranty.

Care and maintenance of the recreational vehicle is an important step in maintaining the safety, dependability and the appearance, both interior and exterior, of the unit. Keep good records of all maintenance performed as these may be necessary for warranty information or may assist in possible repairs needed.

Operational usage and climates may affect the frequency of maintenance needed on certain components. Preventative maintenance is important to the life and enjoyment of any recreational vehicle as many problems can be caught before they occur. Please do not hesitate to call your dealer with a question on the maintenance or care of any item.

For care and maintenance of appliances always refer to the manufacturer's recommendations located within the literature contained within the Owner's Packet.

The charts below indicate recommended maintenance items and the intervals at which they should be performed:

> **TIP:** Make copies of these pages and fill in dates and notes and keep in a maintenance binder in your camper.

Every 1,000 miles or 60 days		
Item	**Procedure**	**Date**
Escape Window	Check operation of latches and upper hinge.	
Smoke Alarm	Test and replace battery as required.	
Tires	Visually inspect tires and check tire pressure	
Hitch, Safety Chains and Wiring	Check for loose bolts or unusual wear.	
GFI Circuit Breaker	Test and record.	
LPG System Components	Visually inspect exposed components	

Every 5,000 miles or 90 days		
Item	**Procedure**	**Date**
Exterior Locks	Lubricate with dry graphite	
Exterior Door Latch	Lubricate with dry graphite	
Exterior Hinges	Lubricate with general purpose oil	
LPG Tank Retaining Brackets	Lubricate with general purpose oil	
LPG Regulator	Check condition and bottom vent for obstructions	
Wheel Lug Nuts	Torque aluminum wheel nuts to 110 ft-lb or steel wheels to 100 ft-lb	
Breakaway Switch	Pull pin and lubricate with general purpose oil	
7-Way Plug	Spray with contact cleaner	
Hitch Ball Latch	Lubricate with non-detergent motor oil	
Hitch Ball	Lubricate with hitch ball lube or wheel bearing grease	
Roof Vent Elevator Screws	Lubricate with general purpose oil	
Pull-Out Step	Lubricate and inspect moving parts	

Every 10,000 miles or 6 Months		
Item	**Procedure**	**Date**
Brakes	Inspect and replace as necessary	
Tires	Inspect and rotate	
Spare Tire & Carrier	Inspect tire and lubricate carrier fittings	
Window and Door Seals	Clean with soap and water and lubricate	
Exterior	Wash and wax	
Exit Windows	Inspect and lubricate latches	

Every Year		
Item	**Procedure**	**Date**
Wheel Bearings	Repack bearings	
Battery	Clean, neutralize and coat terminals with Vas-eline	
LPG Tanks	Have inspected and purged by LPG supplier	
Fittings	Check and reseal windows, doors, lights and fittings with silicone as needed	
Hitch Coupler and Ball	Inspect for proper operation and replace and worn or damaged parts	
Actuators	Inspect roof lift actuators to ensure attachment point are secure and lubricate with general purpose oil	

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Maintenance (continued)

Exterior Fiberglass/Gel Coat Finish

Care of the fiberglass finish is similar to caring for a new car. Any finish will deteriorate over time. Exposure to extreme sunlight, pollutants, and excessive moisture can cause dulling, fading and yellowing. Regular washing and periodic waxing will help maintain the glossy new look. When washing, use a mild, automotive or RV wash solution, being sure to rinse off any loose debris first. Avoid spraying water directly into the furnace and refrigerator vents. Waxing the fiberglass areas twice a year is recommended. Wax with an automotive wax or polish developed for boats. Follow all directions by the wax manufacturer carefully and remember to wash and wax out of direct sunlight and when surfaces are cool.

Seals and Adhesives

The seals and adhesives used perform an important job, keeping out an RV enemy — water. Close inspection and routine maintenance are crucial to the longevity of the trailer. While many types are used, none have a pre-set lifetime, as exposure to the elements and regional variances of climate can accelerate any sealant's deterioration. Therefore, every six months, inspection of all seals is recommended and a quick inspection prior to every trip will help reduce potential problems down the road.

When inspecting, check for cracks, voids, shrinkage, or any sign of deterioration. If any of these signs are noticed, have your local RV service center inspect and replace the sealant if necessary. It is important to use the same kind of sealant that was previously used.

Doors and Windows

Door Catches —The door lock design reflects the latest safety regulations. It is very important that the door be completely closed and locked during travel. If you find it is difficult to lock the door, push in to release pressure on the door latch while turning the key. The door is locked from the inside by pushing or turning a button near the door handle

Windows

As with seals, check the sealant around the windows at least once every six months. If any interior leaks are noticed, contact an authorized dealer immediately. To ensure window operation, adjust and lubricate latches and any moving parts annually. A light oil or powdered graphite can be used for lubrication. Periodically use a vacuum attachment to clean any debris out of the window seals and hardware.

The windows in your L'air Camper meet or exceed all federal safety standards. They require only normal care and may be cleaned with any good glass cleaner.

Window blind/screens are made of plastic for longer wear and ease of maintenance. They can be easily cleaned with a mild cleaning solution.

Frame and Chassis

Over time, weather and climate such as rain, snow, salt, etc lead to corrosion. Rinse the undercarriage, wheel wells and hitch when needed to remove dirt, oil, tar, salt and other debris. Periodically inspect for rust. Near coastal regions, inspect more frequently. If needed, lightly sand and repaint with a rustproof enamel.

Maintenance (continued)

Hitch Couplers

Inspect prior to each trip. The ball socket and clamp should be cleaned and lubricated monthly with wheel bearing grease. If coupler or coupler components appear damaged or worn, contact your local RV service center upon notice of the problem.

Safety Chains

Safety chains should be inspected monthly. If chains are damaged or weakened, replace immediately. Never tow without use of the safety chains.

Tires and Wheels

The tires should be checked before starting out on any trip. Check them regularly and keep inflated to recommended pressures. The recommended tire pressure is on the side of the tire. Even with good tire maintenance and normal driving, you may experience a flat tire. Summon professional roadside assistance from your auto club, travel service, or local truck service facility.

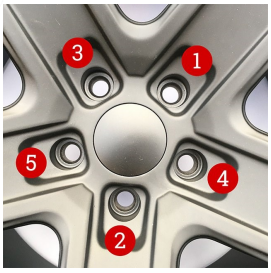
Your travel trailer is not equipped with a jack or other lifting device.

Wheel Nut Torque

The axle and wheel assemblies of your RV are designed differently than those on your car. The overall size, weight and center of gravity of a recreational vehicle subject the wheels to pressures unique to trailering. During normal cornering, the tires and wheels experience a considerable amount of stress called “side-load”. Therefore, the lug nuts on your recreational vehicle require periodic re-torquing.

These instructions will show you how to maintain proper lug nut torque by following these important steps:

1. Check torque before every trip
2. Use proper tools
3. Follow the star pattern sequence to ensure proper .
4. Torque lug nuts to approximately 25ft-lb on the first pass, 60 ft-lb on the second pass and 100-110 ft-lb on the third pass.



Torque is the amount of rotating force applied to a fastener and proper torque can only be achieved using a torque wrench and socket. The socket size for your wheels is 13/16”.Whenever wheels are attached, or re-attached, they should be re-torqued at 10 miles, 25 miles and 50 miles to be sure that they have not loosened.

WARNING

Some procedures require the use of special tools for safe and correct maintenance. Do not attempt to service, repair or work on any axle, brake, or wheel system unless you have appropriate skills and knowledge. Lack of proper training, failure to follow procedures or use special tools and safety equipment could result in property damage, serious injury or loss of life.

⚠ WARNING
Wheel lugs must be properly torqued. Tighten all lug nuts before towing the trailer and re-tighten the lug nuts at 10, 25 and 50 miles.

⚠ DANGER
Under-tightening or over-tightening of lug nuts may cause loss or damage to wheels, hubs or braking capability, which could result in serious personal injury or death.

Wheel Bearing Lubrication

As a general rule, wheel bearings should be repacked every 10,000 miles or every 12 months.

Carefully read the component manufacturer's manual and any safety instructions provided in the unit packet prior to performing any maintenance.

Brake Adjustment

The electric brakes are of the drum and two-shoe type and adjust the same as most automotive brakes. Adjust brakes after the first 500 kilometers. Every 3 months or 5000 kilometers, test the brake drag and adjust if required. Full procedures are outlined in the component manufacturer's guide, included in the Owner's Packet. Never adjust just one brake. When adjusting brakes on any vehicle, either replace or adjust all brakes at the same time, or at least both brakes on the same axle.

Battery

Your camper comes equipped with a Lead Acid battery. These batteries require very little maintenance. Before performing any maintenance on the battery, always disconnect the battery cables from the battery. Tight-en any loose clamps on the terminals of the battery and clean any corrosion off the terminals and apply petro-leum jelly to help prevent corrosion.

Battery Storage

When storing the RV for an extended period, charge the battery to at least 80% and disconnect from any charge or discharge. It is also recommended to remove the battery completely from the unit during storage and place it at home in a warmer location, such as a garage.

Blinds and Shades

Shades/screens should be vacuumed regularly with a soft brush attachment. Spot clean the screen/shades when necessary, using a mild soap and water solution on area.

Cabinet Doors and Drawers

Most of the drawers and doors in your L'air Camper are Gel-coated fiberglass. Clean with a mild detergent in warm water using a damp cloth. Wax, like you use on the outside can be used to bring back a beautiful shine. If excessive wear occurs, the gel coat can be brought back by using the same instructions found in the "exterior" maintenance section.

Ceilings and Walls

Clean only with a mild detergent in warm water, using a damp cloth. Never use strong chemicals, as they can damage the ceiling or walls.

Countertops

Countertops are made of synthetic quartz materials and are highly resistant to normal spills and scuffs. Soap and lukewarm water or a mild, non-abrasive cleaner are recommended.

Avoid use of abrasive pads and scouring powders, which can dull the surface and make it more stain-prone. Always use a chopping block or cutting board when using knives. Pots and pans straight from the burner or oven should be placed on lined hot pads and not directly on the counter surface.

Faucets and Fixtures

To protect the finishes on your kitchen and bath faucets and fixtures, use only a damp soft cloth or sponge. Do not use abrasive cleaners or materials as they can damage the finish.

Flooring, Vinyl

For routine cleaning, sweep or vacuum regularly. Follow by using a damp mop with warm water and clean a small area at a time. Rinse the mop frequently as to not redistribute the picked up dirt. If washing is needed, use a quality product designed for no-wax flooring. To polish the floor, do not use solvent-based waxes or polishes as damage to the flooring may result. Use only polishes recommended for no-wax flooring.

Glass and Mirrors

All of the glass and mirror in your L'air camper are acrylic. You **CANNOT** clean acrylic glass and mirrors as you would at home using a cleaner designed for glass. For best results:

- Remove any dust particles using a lint-free cloth
- Simply add a splash of mild liquid detergent to warm water, and gently wipe down with a chamois leather cloth for a streak free shine.
- Using a soft cloth, gently wipe the mirror dry
- Do not use solvents, such as methylated spirits and turpentine as it is unnecessary and not recommended; use of such materials may cause irreversible surface damage to your acrylic mirrors.

Fabric and Upholstery

Do not launder upholstery fabrics. Blot up stains promptly and use an upholstery cleaner or mild solvent, depending on the stain. Never soak the fabric and use as little water as possible. Blot rather than rub. Towel dry or have professionally cleaned. Upholstery can be vacuumed regularly using a soft brush attachment.

Sinks and Toilet

Many of these products are made of acrylics, plastics or composite materials and use of non-abrasive cleaners is recommended to protect the finish. Use of harsh cleaning products can cause premature deterioration and/or yellowing of the surface finish.

Winterizing and Storage

When storing your trailer for short or long periods, use the same precautions as you would in your own home in regard to perishables, ventilation, and rain protection. In addition, for prolonged storage periods, flush out all the drain lines and the holding tanks. Also drain the entire water system including the water heater and the water storage tank. Instructions for draining the water system are explained in the following paragraphs on winterizing.

The main consideration in winterizing your trailer is to guard against freeze damage to the fresh water system lines, tank, and pump, the waste drain system including the traps and tanks, the water heater, and the batteries.

To completely winterize your trailer follow this procedure:

1. Level the trailer from side to side and front to rear. Open all faucets.
2. Turn the water pump switch to the ON position to expel water from the storage tank
3. Open all drain valves including drain plug or valve on water heater and exterior water service valve.
4. While the water is draining from the system, open and flush the toilet-flushing valve. Depress hand spray lever while holding the spray head down inside the bowl. With roof in the up position, drain all water from the flexible hose to the shower head. Use the button on the outside shower to drain the flexible hose. Unscrew the heads on both spray units and store.
5. Turn the pump switch OFF after all water has been removed from the storage tank.
6. Disconnect outlet hose from water pump.
7. Disconnect the water pump inlet connection. Turn the pump on until all the water is expelled. This water, about 1/2 cup, can be caught in a towel or rag.
8. Lower the front of the trailer as far as the jack will allow until water ceases to drain, then crank the jack up as high as it will go and allow any remaining water to drain out.
9. After the water has stopped running from the drain lines, apply 50 lb. of air pressure at the city water inlet. An air-to-city water adapter is available from your dealer’s RV accessory store. Be sure the toilet valve, all drain valves, and faucets are open and pump outlet hose is disconnected. This can be done at a service station and will force any remaining water from the water heater and remove any water that may be trapped in low areas.

10. Pour a cup of non-toxic RV antifreeze that has been approved and listed by a recognized testing authority such as Underwriter Lab into the lavatory, sink and tub drains to prevent trap freeze-up.
11. Be sure to open the waste-holding tank dump valves and drain and flush the tanks thoroughly (this is very important as the sewage in the tanks, if frozen, could seriously damage the tanks). Plan ahead and have this done at a dump station.
12. Remove the batteries from your trailer and store in a cool, dry place where there is no danger of freezing. It is very important for optimum life of a battery.
13. Remove any items (food, cosmetics, etc.) from trailer interior that might be damaged by freezing, or that might damage the trailer if containers should break.

An Optional, but not necessary, method for winterizing protection, is to add a non-toxic antifreeze (approved for drinking water system) to the water lines using the following procedure:

1. Reconnect all lines except the hose to the pump inlet port. If you have the winterization kit installed, just reconnect the outlet hose. Close all drain valves.
2. Turn water heater bypass valves to bypass position.
3. Attach a length of hose to the pump inlet port. This piece of hose should be long enough for the free end to be inserted into and reach the bottom of the antifreeze container. .
4. For antifreeze usages follow manufacturer's instructions found on label of container.
5. Open all water faucets.
6. Insert hose length into the antifreeze container, turn the pump switch on, and run the water pump until the antifreeze solution fills all water lines. Flush toilet. Work hand shower spray while holding down in tub.
7. Shut off the pump and close all faucets.
8. Disconnect the hose length from pump inlet fitting and reconnect water system inlet line. If you have the winterization kit, turn valve back into normal use position and reinstall hose plug.

⚠CAUTION
Remove all RV antifreeze spillage from all drain and faucet parts after winterizing. Failure to do so could result in damage to the plumbing fixture's finish.

⚠WARNING
Do NOT use automotive or windshield washer antifreeze in the camper water system. These could be harmful if swallowed.

Truma Combi Winterization—Optional Equipment

If your L'air Camper is to be stored during winter months, the Truma Combi must be drained to prevent damage from freezing. Once drained RV non-toxic antifreeze can be added.

1. Use the main switch, or pump switch to switch off the power to the water pump.
2. Turn off, or disconnect the city water connection, if present.

3. Open all water release points, eg. Cold and hot water faucets, showers, toilet.
4. Open the pressure relief/drain valve on the Truma unit.

NOTE: Serious damage to the Combi furnace can be caused by freezing. Damage caused by freezing is not covered by the Truma warranty.

Additional Notes on Storage

1. Close the propane container's service valve. Extinguish any pilots.
2. Remove batteries from smoke detector.
3. Turn off all circuit breakers in the service panel.
4. Close and secure all doors and windows. Open the Maxx Fan slightly to allow circulation, if stored indoors.
5. Remove any food from the refrigerator and block door slightly open. This will help to prevent odour and reduce the chance for mold or mildew to develop. Leaving a small, open box of baking soda in the refrigerator is a good idea.
6. It is a good idea to cover the windows to protect the interior from sun damage.
7. Lift the weight of the trailer off the tires using blocks or other safe devices of this type.
8. Cover tires to protect from weather damage.
9. Lock all doors.
10. If the trailer is covered with plastic or canvas, provide ventilation from a vent, door and/or window to prevent mildew, etc. on the interior.

Notes:

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Tires

All tires meet or exceed load and wear specifications for trailers. Proper inflation pressure must be maintained for safe trailer stability and maximum tire life. Load range and maximum cold inflation pressure are stamped on the sidewall. Always inflate the tires to this maximum pressure.

A tire gauge should always be part of your tool kit. Check tire pressures before starting out, when the tire is cold. Do not bleed air out of warm tires. Inflation specifications are for cold tires. Inflate the tires of the tow vehicle to the maximum cold inflation pressure stamped on the tire sidewalls. Higher rear tire pressure improves tow vehicle stability.

⚠ WARNING
Check tire pressures often. Always check pressure when tires are cold. Do not exceed maximum recommended pressure.

⚠ WARNING
Keep tires properly inflated. Tires may lose air suddenly and/or catch fire if driven for long distances or at high speeds while seriously underinflated. Tires could overheat resulting in damage to the vehicle, contents and or personal injury may occur.

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Changing Tires

1. Turn on the tow vehicle's hazard warning flashers.
2. Set up flares or warning lights.
3. Chock the opposite tire and unhitch the trailer from the tow vehicle, or eliminate tension on equalizer bars, if applicable.
4. Place scissors-type or hydraulic jack on a block of wood directly under the frame, close to the tire you intend to change.
5. Raise the jack to take weight off the tire.
6. Loosen the lug nuts.
7. Raise the jack until the tire clears the ground.
8. Remove the lug nuts and old tire and put the spare on the hub.
9. Replace and tighten the nuts.
10. Lower the jack until the tire touches the ground.
11. Tighten the lug nuts to a torque of 90 to 95 ft-lbs.
12. Lower and remove the jack.

13. Hook up equalizer bars, if applicable.
14. CHECK THE TORQUE IMMEDIATELY.


When using bottle-type jacks, a metal plate or block of wood to relieve stress against the steel frame should be inserted between jack and frame. DO NOT use a bumper jack. It may damage the sidewalls or floorboard of the trailer.

Tips on Wheel Torquing

Always use a quality, calibrated ratchet-style torque wrench to torque a wheel. Torque each lug nut to the specified torque.

- Allow the wheels to cool to room temperature before loosening or tightening the lug nuts.
- Tighten the lug nuts in the proper sequence. Tightening in a random pattern can cause warping.
- Properly support the tire and wheel assembly when torquing.
- Use the correct size socket otherwise damage can occur to the lug nuts.
- While tightening the lug nuts carefully rock the wheel to make sure each lug nut is centered properly.
- Always final torque all of the wheels before completely lowering the vehicle.
- DO NOT try to get the full torque at one time. Work gradually up to the final torque to avoid warping or cracking.

The National Highway Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of tire safety, as required by CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA free of charge from the following web site:

http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- improve vehicle handling
- help protect you and others from avoidable, breakdowns and accidents
- improve fuel economy
- increase the life of your tires

This manual presents an overview of tire safety, including information on the following topics:

- Basic tire maintenance

- Uniform Tire Quality Grading System
- Fundamental characteristics of tires
- Tire safety tips

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

Safety First–Basic Tire Maintenance

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

Finding Your Vehicle's Recommended Tire Pressure and Load Limits

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- recommended tire size
- recommended tire inflation pressure
- Vehicle Capacity Weight (VCW–the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear Gross Axle Weight Ratings (GAWR– the maximum weight the axle systems are designed to carry)

Both placards and certification labels are permanently attached to the trailer on the forward half of the left side, and are easily readable from outside the vehicle without moving any part of the vehicle.

Understanding Tire Pressure and Load Limits

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure– measured in pounds per square inch (psi)–a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kPa), which is the metric measure used internationally.)

Vehicle manufacturers determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

Tires (continued)

Checking Tire Pressure

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine under inflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for the last three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

Steps for Maintaining Proper Tire Pressure

1. Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
2. Record the tire pressure of all tires.
3. If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct tire pressure.
4. If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
5. At a service station, add the missing pounds of air pressure to each tire that is underinflated.
6. Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

Tire Size

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

Tires (continued)

Tire Tread

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in tread wear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear “even” with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln’s head upside down and facing you. If you can see the top of Lincoln’s head, you are ready for new tires.

Tire Balance and Wheel Alignment

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle’s frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

Tire Repair

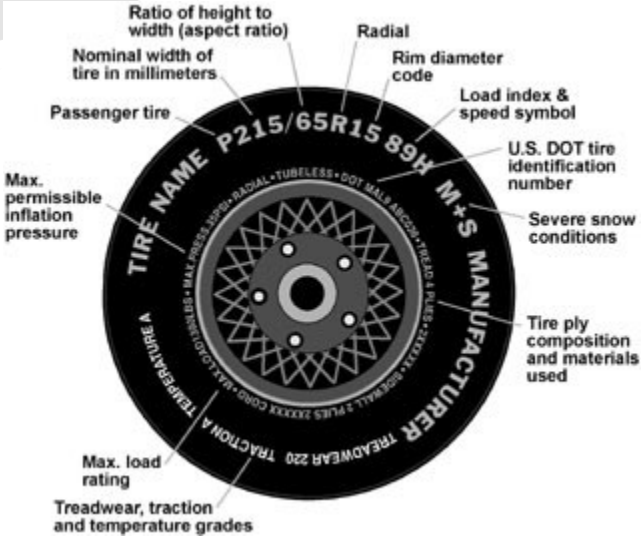
The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole.

Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

Tire Fundamentals

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

Information on Passenger Vehicle Tires



P - The “P” indicates the tire is for passenger vehicles.

> **NOTE:** Passenger car tires are not recommended for use on trailers, because the capacity ratings are not marked on the sidewalls of these tires. In the event a passenger car tire is used, the capacity must be derated by 10%.

Next number (Positions 2, 3 and 4) - This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

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Tires (continued)

Next number (Positions 5 and 6) - This two digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

R - The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

Next number (Positions 8 and 9) - This two digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

Next number (Position 10, 11 and/or 12) - This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer.

NOTE: You may not find this information on all tires because it is not required by law.

M+S - The "M+S" or "M/S" indicates the tire has some mud/snow capability. Most radial tires have these markings.

Speed Rating - The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below.

NOTE: You may not find this information on all tires because it is not required by law.

Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

*For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

U.S. DOT Tire Identification Number - Begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where the tire was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

Tire Ply Composition and Materials Used - The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

Tires (continued)

Maximum Load Rating - Indicates the maximum load in kilograms and pounds that can be carried by the tire.

Maximum Permissible Inflation Pressure - This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

LT - Indicates the tire is for light trucks or trailers.

ST - Indicates the tire is for trailer use only.

Max. Load Dual kg (lbs) at kPa (psi) Cold - Indicates the maximum load and tire pressure when the tire is used as a dual; that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

Max. Load Single kg (lbs) at kPa (psi) Cold - This information indicates the maximum load and tire pressure when the tire is used as a single.

Load Range - This information identifies the tire's load-carrying capabilities and its inflation limits.

Vehicle Load Limits

Determining the load limits of a vehicle includes more than understanding the load limits of the tires alone. A Federal certification label is located on the forward half of the roadside (left) of the unit.

The certification label will indicate the vehicle's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded vehicle can weigh. It will also provide the gross axle weight rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided. In the same location as the certification label described above, there is a vehicle placard. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity.

Cargo can be added to the vehicle, up to the maximum weight specified on the placard. The combined weight the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded vehicle cannot exceed the stated GVWR.

The weight of fully filled propane containers is considered part of the weight of the RV before it is loaded with cargo and is not considered part of the disposable cargo load. Water however, is a cargo weight and is treated as such. If there is a freshwater storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be offloaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle.

Distribute the cargo evenly when loading to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your RV dealer to discuss weighing methods needed to capture the various weights related to the RV. This would include weights for the following: axles, wheels, hitch or pin (in the case of a trailer) and total weight.

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