CARAVAN HANDBOOK

THE RV INSURANCE LEADERS

CIL INSURANCE™
THE RV INSURANCE LEADERS





CIL was formed in 1962 especially to cater for the insurance requirements of the caravan industry and the caravanning public. Specific policies have been created and developed for most types of recreational and alternative living vehicles and also a range of trade policies culminating in the current “Secure Caravan” series.

The personal attention to all clients is supported by more than 40 years experience and real involvement in the caravan industry, and now, as a part of the Vero Group, CIL is backed by the security and resources of a major insurer.

This Handbook, which has been compiled with the assistance of many of our Trade Contacts and major Caravan Industry Associations throughout Australia, contains many safety measures and helpful hints together with a resume of our repair and service network.

CIL trusts that you will benefit from the information contained, and that as a result you will have a safe and more enjoyable time with your caravan.

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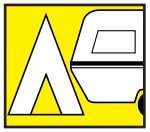
WARNING

The information in this Handbook is a general guide only. You should not rely on the information without seeking advice from appropriate specialists about your own circumstances. Vero Insurance Limited* and CIL Insurances do not represent or warrant, whether expressly or impliedly, the accuracy or completeness of the information in this Handbook and disclaim any liability and responsibility to any person in respect of anything done or omitted to be done in reliance, whether wholly or partly, on the information.

TOWING



CARAVANNING & CAMPING

Caravanning and camping is rated as one of Australia's most popular leisuretime activities. It brings together people from a wide range of backgrounds and vocations with the simple aim of enjoyment, relaxation and having a great time.

Caravanners are sometimes called modern day nomads because of their desire to travel and take along their own accommodation.

Today's motor cars make excellent towing vehicles, while modern caravans have all the creature comforts desired. However caravanners need to be aware that a car and caravan combination can behave in a different manner than when driving the car itself.

To ensure safe journeys, therefore, it is necessary to have a car and caravan that are compatible, use the best towing equipment and practise some of the skills that are needed to enable you to cope with any situation that might arise. Once these matters have been attended to, every journey will be a safe and enjoyable one. Happy caravanning!

THE RELEVANT RULES

In 1998 agreement was reached by all the States Ministers of Transport to implement national towing regulations. In essence, the national rules state that: "A motor vehicle with a Gross Vehicle Mass (GVM) not exceeding 4.5 tonnes must not, without approval of the authorities, tow a trailer with a mass (including any load) exceeding:

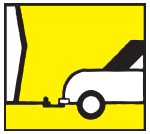
- the capacity of the towing equipment fitted to the vehicle; or
- the maximum towing capacity specified by the vehicle manufacturer.

Simply put, this means that the most a vehicle can tow is the amount specified by the manufacturer or the rating of the towbar – whichever is least.

If you want to know how much you can put behind your car, firstly check the owner's manual or sales brochure for the manufacturer's recommendations. Secondly make sure that the towbar capacity is at least as much, if not more, than the weight of the trailer including its load.
If you are unsure if the towbar is strong enough, have a chat to a reputable towing equipment specialist.

Owners of 4WDs and light commercial vehicles should also be careful that they do not exceed the Gross Combination Mass (GCM) of their vehicle. The GCM refers to the maximum the vehicle plus its load together with the loaded trailer is permitted to weigh.

Motorists also need to ensure that the vertical load imposed on the towball (often referred to as ball load) does not exceed that permitted by the vehicle manufacturer or the rating of the towbar. Exceeding the permitted ball load could affect vehicle and towing equipment reliability as well as have implications on vehicle warranty.



THE TOW VEHICLE

Considering the importance of safety, the most suitable towing vehicle is one which is heavier than the caravan or trailer it tows and which has enough power to permit quick and safe passing manoeuvres.

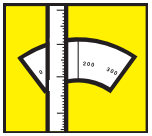
As long as manufacturer's towing recommendations are not exceeded modern passenger vehicles, including those with front wheel drives, are just as capable of towing a caravan or camper trailer as a four-wheel drive. Four-wheel drives are only necessary for venturing off the beaten track or pulling long and heavy trailers.

While a vehicle with a manual gearbox is often preferred by drivers, many vehicle manufacturers recommend an automatic transmission for towing larger trailers or caravans.

One advantage is that the driver needs only to concentrate on the prevailing road conditions and not worry about whether the vehicle is in the correct gear. Reversing is much easier if the vehicle has an automatic transmission. Some vehicles may need to be fitted with an auxiliary transmission oil cooler. Check with the car dealer or manufacturer if this applies to your vehicle.

Generally the type of suspension on the towing vehicle is not important as long as it is firm. Leaf springs are often considered more capable of supporting loads than coil springs but a good load distribution hitch will counteract the tendency of the rear of the vehicle to sag (refer "SUSPENSION MODIFICATIONS" for information on coping with loads in the vehicle).

If the vehicle is fitted with self levelling suspension, manufacturers recommendations in regard to hitching up a trailer must be followed. Unless the trailer is very small, a load distribution hitch is essential on vehicles with self levelling suspension. Failing to follow the recommendations or failing to use the correct towing equipment could result in damage to the vehicle's suspension.



SIZE AND WEIGHT

With the trend towards smaller and lighter cars, compatibility of tow vehicle and caravan in regard to weight and size has become more important.

Weight:

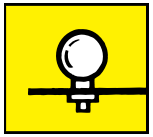
Most vehicle manufacturers provide recommendations as to the maximum load that can be safely towed. These should not be exceeded. The recommendations always refer to the loaded weight of the trailer. Contents like water, gas, food, clothing and camping equipment will usually add at least another 300kg to the weight of an empty van. With larger tandem axle caravans this is likely to be 400-500kg.

Newcomers to caravanning will find it beneficial to not tow more than the empty weight of the towing vehicle.

When a van is towed at a constant speed along a level road, weight is not an important factor. However, even a small, heavily loaded trailer can tax the available engine power when travelling through hilly terrain.

Size:
The smaller the frontal area of a caravan the less wind resistance is created. Therefore, less power is needed for towing. A camper trailer will be more economical to tow than a conventional caravan. Some well designed hardtop caravans will be just as easy to pull as a pop-top.

Many experienced caravanners prefer a conventional height van due to the convenience of being able to walk in without having to raise the roof or pull out bed-ends as with a camper trailer. The deciding factors are probably the size of the towing vehicle, how often the van or camper is used, where it is stored and personal taste.



TOWBARS & HITCHES

A towbar is to a car and caravan what glue is to two pieces of timber. Use the wrong glue and the timber will come apart. Fit the wrong towbar to a car and the caravan may not stay in place.

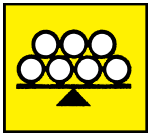
The capability of a towbar is often over estimated. Generally the only part that is visible is the tongue, lug or ballmount. While sometimes this appears to be quite strong, the actual mountings or thickness of material may leave much to be desired.

In relation to towbars there should be no compromise. Always purchase a recognised product that has a plate attached stating the maximum towing load. If a new vehicle ispurchased with a towbar already fitted, do not assume that it matches the towing capabilities of the vehicle. Many towbars are only designed to tow small trailers and not heavily loaded caravans.

Before selecting a towbar, first determine the loaded weight of the caravan or camper trailer. This can only be done by placing the unit on a weighbridge or scales. Then purchase a towbar that can adequately cope with that load.

For larger caravans a heavy duty hitch receiver type towbar is usually required. These units mount onto the vehicle in several positions, enabling the load of the trailer to be distributed over a wide area of the vehicle. As a result less stress is placed on any one part of the vehicle body than would be the case with a conventional towbar. This is most important on modern vehicles that do not use a chassis.

If in doubt as to the best towbar for your vehicle and application, discuss your requirements with a towing equipment specialist. You will then be able to go away and have an enjoyable holiday, knowing that the caravan will follow the car wherever it goes.



WEIGHT DISTRIBUTION

Whenever a vehicle towing a trailer travels along the road with the back down and front up, a problem of weight transfer exists. This means that there is less weight on the front wheels but more on the rear than without the trailer in tow. For maximum safety, stability and vehicle control, both the caravan and towing vehicle should be level. The reasons that one or both may not be level could be due to:

1. Incorrect towball height compared to the trailer coupling height.
2. Uneven loading of the caravan.
3. Lack of proper towing equipment.

To determine the correct ball height, measure the distance from the ground to the bottom of the coupling on the front of the A-frame. Then compare this with the distance from the ground to the base of the towball on the rear of the vehicle.

These measurements should be nearly the same. If this is not the case, the ball mount or tongue may need to be adjusted or altered.

Even loading of the caravan can be checked by weighing the caravan on and off the vehicle. The difference between the two is the ball or nose weight. This should be about 10% of the total weight of the loaded caravan. Some of the heavier items normally carried in the caravan may need to be moved around to achieve this.

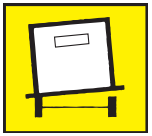
For a four to five metre touring caravan the vertical ball load could be between 100kg and 150kg. Although this may be only 10% of the overall weight, it is certainly enough to push down the back of most vehicles. If due to stiff springs the back goes down very little, some weight will still be transferred from the vehicle's front wheels onto the back wheels. With a ball weight of 100kg the rear wheels may actually be carrying an additional 130kg-l40kg. The extra weight has been removed from the front wheels due to a simple leverage factor.Whenever the weight on the front wheels of a vehicle is reduced the steering and braking are affected. To prevent this occurring weight has to be moved from the back to the front wheels. This can only be achieved by using a weight distribution hitch (sometimes these are called stabilisers, torsion, anti-sway bars or level-rides).

The effect of the weight distributing bars can be compared to handles on a wheelbarrow. The higher the handles are lifted the more weight is moved onto the wheel and the easier it becomes to hold it up. Similarly, the more tension that is placed on the weight distribution bars, the more weight is transferred forward onto the front wheels of the vehicle.

These weight distributing bars are necessary on all but the lightest camper trailers. When correctly fitted the bars will ensure that some of the ball weight is carried by the front wheels. As a result the complete outfit will be level but slightly lower.

It is unwise to set off on a trip if the caravan and tow vehicle are not level. If you are in doubt as to the best way to cope with the weight of the trailer, consult someone specialising in towing equipment. People who boast that they do not need or use weight distributing bars are either not aware of the implications or do not have safety as their utmost concern.

And after all, the safety of your family as well as that of the car and caravan are paramount.



SWAY CONTROLS

Sway is the side to side movement of the rear of the caravan or camper trailer. This movement is sometimes referred to as snaking and can result in complete loss of control. Because prevention is better than a cure, sway controls should only be considered when all other factors contributing to the instability have been eliminated. Some of the causes of sway are:

- Poorly designed caravan.
- Axle located too far forward.
- Incorrect ball height.
- Unsuitable tow-vehicle & caravan combination
- Under inflated tyres
- Incorrect weight distribution

As a rule sway control equipment should only be fitted to larger caravans that may occasionally be affected by strong gusty winds.

Before purchasing any sway control equipment, discuss your problems with people experienced in caravan towing. In some cases particular types of equipment may be unsuitable.

For example, some types are not recommended if override brakes are fitted.

Remember that even the best sway control equipment cannot be expected to, and should not, compensate for a towing vehicle that is too light, an unbalanced caravan or lack of a weight distribution hitch.

LOADING THE CARAVAN OR TRAILER

A As a general rule, heavy items should be stored at floor level and as close as possible to the wheels. Lighter items can be placed closer to the ends. If in doubt as to the best location for certain equipment, check with the supplier of the caravan. Ultimately it is only a visit to a weighbridge that will tell you that what's behind the car is correctly balanced and is not likely to become unstable.

DRIVING TECHNIQUES

Many newcomers to caravanning are concerned with the prospect of towing or manoeuvring a car and caravan combination. The problems that are sometimes encountered may be due to incompatible vehicle combination, incorrect loading, lack of proper towing equipment or simply a lack of skills. Once the above points have been fixed and a little common sense is used, towing a caravan or camper trailer need not be any more difficult than driving a car by itself.

Some areas where extra awareness may be required are:

Moving Off:
With a load behind, the acceleration rate of a vehicle is significantly reduced. With a manual transmission it is usually necessary to stay a little longer in each gear before shifting into a higher gear. If an automatic transmission is fitted the use of the selector level to control up changes, especially when going uphill, is sometimes desirable.

Cruising:
Because of the extra length and weight fast speeds are not recommended.

In some States the speed limits are lower when a caravan or trailer is pulled. Never drive too close behind other vehicles. Leave at least a 60 metre space unless actually overtaking. This allows others to pass you safely. When approaching a hill and provided it is safe to do so, increase your speed slightly so it is easier to go up the hill. Always select a lower gear early if the vehicle speed drops off noticeably. Once engine speed is lost, it is difficult to regain. As a result additional stresses may be placed on the engine.

Overtaking:
Overtaking other vehicles, particularly long trucks or other caravans, must be done with extreme caution. Not only is the acceleration considerably reduced but due to the extra length a greater distance has to be covered before moving back into the

left-hand lane. Remember to check mirrors to ensure it is safe to overtake. Never overtake a slower vehicle when going downhill.

Being Overtaken:
By constantly monitoring the rear vision mirrors, a faster travelling vehicle can be readily spotted. If the vehicle intending to pass is a truck or bus make sure that this can be achieved quickly and safely. If road conditions permit, move as far to the left as possible. The greater the distance between the two vehicles, the safer the situation becomes. Never take the foot off the accelerator or brake when another vehicle is going past.

Going Downhill:
Always slow down and engage a lower gear before actually reaching the downhill section of the road. This is particularly important if the hill is a steep one. By adopting this procedure the need for heavy braking while going downhill is reduced. Excessive speed or sudden braking while travelling downhill could create an unstable situation.

Fuel Consumption
Assuming that the caravan and towing vehicle are compatible, excessive fuel consumption can usually be attributed to either fast speeds, poor engine tune or bad driving habits.

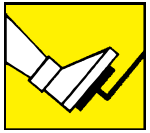
More economical driving techniques can easily be mastered by anyone and will result in a noticeable reduction in fuel consumption. When moving off or passing another vehicle always move the accelerator smoothly. Any rapid or excessive movement will waste petrol. Judging traffic flow is another useful technique. By observing the traffic some distance ahead it is often possible to avoid unnecessary braking and delays.

It has been stated that every time the brakes are used fuel is wasted. This implies that the brakes needed to be applied because vehicle speed was kept up longer than necessary. Everyone knows that braking cannot be avoided completely, but by slowing down sooner when approaching traffic signals or other vehicles, fuel can be saved.

If you see a hill coming up, and safety permits, increase vehicle speed slightly to make it easier for the engine to pull the vehicle up the incline.

It is worth noting that to enable a vehicle to pull a given load, it must produce a certain amount of power. The power will be approximately the same whether the engine has four, six or eight cylinders. This means that when towing a caravan or camper trailer with a four-cylinder engine the fuel consumption may be nearly as great as if a six cylinder engine was fitted.

Finally if you wish to obtain a reasonable fuel consumption while towing, do not choose a caravan that is beyond the capabilities of the towing vehicle. Alternatively do not use a vehicle that cannot adequately cope with the load you intend to pull.



BRAKING SYSTEMS

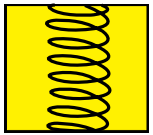
For many years now, caravans and camper trailers have been fitted with electric brakes. These braking systems are efficient and easy to maintain.

However, to enable the electric trailer brakes to function an electric brake controller must be installed in the towing vehicle. This is a job that should be left to an auto electrician or someone experienced with electrical systems in modern cars.

While there are several different types of electric brake controllers available, the most efficient ones have a feature known as motion sensing. This involves a pendulum that can determine exactly the amount of braking that the trailer has to do to ensure a smooth safe stop.

Once a brake controller is adjusted correctly the driver will be able to slow the car and caravan combination with the same force on the brake pedal as that needed to stop the car by itself.

Older caravans with over-ride hydraulic or mechanical brakes can be successfully converted to an electric system. The cost can be easily justified on the basis of more efficient braking and improved resale value.



SUSPENSION MODIFICATIONS

Many vehicle owners feel that it is necessary to fit stronger springs to the back of th eir car or 4WD in order to tow a caravan. The justification is that the back of the car goes down when the caravan is lowered on the towball. If the vehicle is a few years old and the springs have sagged a little then replacing the springs may be a worthwhile modification.

However if the only reason the suspension height alters is the weight of the van, then a weight distribution hitch is needed to take care of this, not stronger springs.

There are two cases where suspension modifications may be desirable or necessary. These involve additional loads in the vehicle that cause the vehicle height to reduce before the van is hitched on. If there is a constant additional load as, for example, in the case of an after-market LP gas conversion, then stronger springs may be needed to bring the vehicle back to its normal unladen height. In the case of occasional extra loads like camping gear then air-adjustable shock absorbers or air bags are most suitable. After the vehicle is loaded, air pressure can be adjusted to restore the original height. Air adjustable shock absorbers or airbags should not be used to compensate for weak springs or to support the weight of the caravan.

All shock absorbers on the towing vehicle should be in good condition to help prevent pitching or instability while towing. Good shock absorbers not only improve the handling of a vehicle but also increase tyre life.

TYRE CARE

The part that tyres play in providing car and caravan safety is more important than any other single component. A vehicle can only accelerate, brake or steer if the correct contact exists between the tyre and the road. Also if the tyres are not inflated correctly, or are the wrong type, the stability and ride of the vehicle can be affected. Considering that at 80 km/h the average tyre rotates 40,000 times per hour, it can be appreciated that proper care is very important in ensuring a trouble-free journey.

Tyres can deteriorate just as much when a vehicle stands for long periods as when it is being used. When a caravan is stored it is a good idea to remove some of the weight off the tyres and cover them to prevent deterioration by the sun.

When determining the suitability of the van's tyres, it is important that the laden weight of the van or trailer is known. A trip to a weighbridge will soon establish this. Do not use

the unladen or registered weight. Add 10-20% as a safety margin to allow for additional loads caused by uneven road conditions, uneven loading or other unknown factors. To find the individual tyre loads, divide the weight by the number of tyres on the caravan.

Next examine the sidewall of the tyre where it may state the maximum load the tyre is designed to carry. Alternatively write down the tyre size and check with a tyre specialist. The load rating of the tyre must exceed the van's weight as previously determined. If this is not the case, a bigger tyre will have to be selected.

What is usually not realised is that a tyre has to be inflated to its maximum pressure before the load rating of the tyre can be achieved. The maximum pressure for radial passenger or 'P' tyres are 250kPa (36 psi) for a 4-ply or standard 'load' and 280 kPa (40 psi) for a 6-ply rated or 'extra load' tyre. Light truck or 'LT' tyres have a maximum inflation pressure of 350 kPa (50 psi) if it has a 6-ply rating and 450 kPa (65 psi) if it is an 8-ply. Should the inflation pressure of the tyre be less than stated above, the load carrying capacity will be lower. Note: many light truck (LT) type tyres are identified by the letter 'C'. For example 195 R 14 C.

It is generally considered unwise to inflate caravan tyres above 315 kPa (45 psi) as it may affect the ride of the caravan. The rear tyres on the towing vehicles, because they are subjected to much greater loads when towing, should be inflated to near their maximum. Front tyres will need an extra 25 kPa (4 psi) above normal. Always be careful to check tyre pressures when the tyres are cold. Early in the morning is best. During a trip heat build-up will increase pressure, giving an incorrect reading. Never let air out of a tyre when it has been on the move or standing in the sun.

Premature or uneven tyre wear can usually be attributed to under-inflation, overloading, unstable caravan or a mechanical defect like a bent axle.

If your tyres appear to be wearing quicker than anticipated, consult a tyre specialist who should be able to pin-point the reason. Do not expect tyres on a caravan to last as long as on a car. The loadings caravan tyres are subjected to are always well in excess of those of the car tyres.

SAFETY FIRST

FIRE PREVENTION

The possibility of a fire in a caravan or camper is generally very remote, but it should not be ignored. Consider the caravan or camper you own or are thinking of buying. There are numerous gas lines, gas cylinders, gas appliances, electrical fittings and flammable materials.

Now think what it costs to put on the road and the cost of replacing it should it be destroyed. And who uses the van? Your wife, your children, your friends? Is it worth the risk of ignoring the need to install adequate fire protection equipment? The majority of recreational vehicle and camping equipment manufacturers are well aware of the need for built-in safety. But once they sell the unit, they no longer have control over the way it is cared for.

It is a legal requirement to carry an approved fire extinguisher at all times. While it is stored inside the van, it should be accessible from outside the doorway. A smoke detector is also highly recommended. Because of the confined space inside a caravan or camper, it is advisable to consult a fire prevention specialist to ensure that the correct type is installed.

ELECTRICAL SAFETY

The electrical system in a caravan should be checked regularly. Because a caravan is constantly on the move it is possible for connections to come loose due to vibrations. If the van or camper trailer is a pre-owned unit it should be inspected to ensure that fittings are of the type approved for caravan use.

All light switches and power points must be a ‘double pole’ type. Extension leads that connect the van to the outside supply must have a 15amp rating. These leads can be identified by an earth pin that is wider than the other two.

When fitting accessories like shelves or towel rails, always consult a caravan repair specialist to prevent drilling into hidden electrical cables.

Should it be necessary to replace the three pin plug or socket, it is essential that the cable fits neatly through the plug top to give maximum cable anchorage and prevent the entry of moisture. It is recommended that the earth wire (your lifeline) is about 10mm longer than the other two conductors. This ensures that the active or neutral conductor will break first if any tension is imposed on the cable.

Additional safeguards are available to protect you from electrical faults. These are in the form of circuit breakers and earth leakage relays to disconnect the power when a circuit is overloaded as well as trip when a small current leakage to earth occurs.

All electrical work should be carried out by a licensed electrician.

GAS SAFETY

L.P.G. Liquefied Petroleum Gas, is convenient, clean, relatively inexpensive and for most caravanners or campers readily available. However, it is also flammable. Below are some hints which will help keep your system operating safely and efficiently.

L.P.G. consists basically of propane which is a by-product of petroleum processing. Existing in a vapour form at atmospheric pressure it changes to a liquid when stored under pressure. Inside a cylinder the pressure varies from 350 kPa (50 psi) at 0fiC to 1400 kPa (200 psi) at 45 fiC. This means that it is possible for a large quantity of gas to escape rather quickly if handled carelessly.

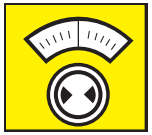
Because L.P.G. is heavier than air it will always find the lowest place or stay close to the ground or floor. Ventilation therefore is very important, particularly in confined spaces like caravans. The practice of blocking off air vents to keep out draughts is a dangerous one and is not recommended. As most gas facilities and installations are covered by regulations, a little care by the user can prevent any accidents.

The gas system should be inspected regularly and any service work carried out by a licensed gas fitter. A “Certificate of Compliance” has to be issued on the completion of any work carried out on a L.P. gas system.

CYLINDERS

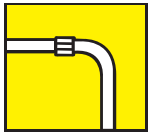
These must be stored upright and securely fastened. All cylinders normally used on caravan and camper trailers are fitted with a safety relief valve, This is designed to release gas to the atmosphere should a high pressure build-up occur in the cylinder usually as the result of very high temperatures. Always make sure that this relief valve is pointing away from both the caravan and towing vehicle.

For cylinders not stored under cover a coat of paint once a year will prevent rust formation. Every ten years, from date of manufacture, all cylinders must be inspected and retested.



REGULATORS

Because gas at high pressure is unsuitable for use in appliances like stoves and refrigerators, a regulator is necessary to lower the pressure. Never attempt to use gas from a cylinder which is not fitted with a regulator. To prevent damage by water it is advisable to place a cover over the top. Due to the need to have the regulator vented to the atmosphere it is possible for water to enter the unit and cause corrosion. If this occurs with older type regulators, it is possible to have gas delivered to the appliances at full cylinder pressure. This could cause an explosion if an attempt was made to light the appliance. Never attempt to dismantle or adjust a regulator. If in doubt have the regulator tested or replace it with a new one. Newer caravans use regulators with over-pressure protection.



PIPES AND FITTINGS

Check to make sure that all pipes are secured to the chassis or body. The pipe leading away from the cylinder should be fitted with a loop or flexible hose to reduce the chance of the pipe cracking due to vibrations. To make sure that no leaks have developed, regularly check all joints and fittings by brushing on soapy water. Bubbles will indicate a gas leak.

GENERAL SAFETY HINTS

- Always turn gas off at cylinder when not in use.
- Make sure cylinder is not overfilled.
- Do not enter or stay in van if you smell gas.
- After turning off cylinder, open door and allow gas to disperse
- Keep flammable materials away from stove or burner.
- Have a fire extinguisher fitted in an accessible position near the door.

SERVICING & MAINTENANCE

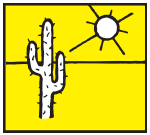
Regular servicing of caravan, pop-top or camper trailer will ensure trouble free and enjoyable holidays. It will also keep the unit in tip top condition which enhances its resale value.

Caravans, pop-tops and camper trailer should be serviced every 12 months, every 10,000 km or when recommended by the manufacturer. Warranty conditions may require the unit to be serviced after the first 500 or 1000 kilometres.

Most companies that specialise in servicing of recreational vehicles offer minor and major services. Some also tailor this work to suit specific requirements, for example, an extended trip around Australia.

On the mechanical side the components that may need attention are the suspension, brakes, wheel bearings and tyres. Other areas include the gas and electrical system and related appliances. Accessories like air conditioners and roll-out awnings also require regular checks for correct operation.

Servicing should be considered an important aspect of owning a caravan or camper and something that will ensure long term reliable operation. Items like caravan tyres, wheel bearings and brakes are exposed to greater loads than the same components on a motor vehicle. Therefore it is a good idea to carefully monitor the distance travelled by the caravan so that servicing can take place at the correct intervals.



OUTBACK TRAVEL

When touring in the outback it is recommended to carry sufficient drinking water for a number of days in containers other than the caravan tank.

Advise Authorities what road you are taking, your destination and estimated time of arrival.

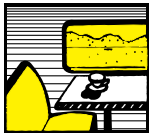
In case of breakdown stay with the car and caravan and on no account leave the vehicle on foot to summon help. Help will come to you.

HOLIDAY CHECKLIST

The items listed below are only suggestions and can be altered to suit individual requirements.

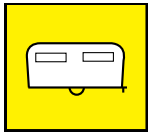
CAR

- Fuel tank(s) full and spare fuel if travelling long distances.
- Oil level - engine and transmission.
- Coolant level.
- Condition of all hoses.
- Fan belt tension and condition.
- Brake fluid level.
- Tyre pressures.
- Operation of lights.
- Mirrors secured and adjusted.
- Insect screen in front of radiator.



CARAVAN INTERIOR

- Cupboards and drawers securely closed.
- Table secured.
- Refrigerator - check that container with liquids are sealed -lock door.
- Hatches and windows closed.
- No loose items in cupboards or on shelves.
- Fire extinguisher fitted.



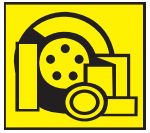
CARAVAN EXTERIOR

1. Prior to holiday

- Gas bottle filled and secured.
- Water tank filled.
- Brakes checked and adjusted.
- Wheel bearings adjusted.
- Spring shackles lubricated (this is easier if van is jacked up to remove load off shackles).
- Wheel nuts tight.
- Condition of tyres.

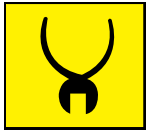
2. Before moving off

- Jockey wheel removed or secured.
- Lights operating correctly.
- Gas turned off.
- Tyres inflated correctly.
- Doors locked and steps raised.
- Jacks raised or safety stands removed.
- Wheel chocks removed.
- Hand brake released.
- Electrical connection between car and van secured.
- 240V electrical lead disconnected.
- Water and/or sullage hose disconnected.
- Towing equipment correctly fitted.
- Safety chains secured.



SPARES

- Fan belt and radiator hoses.
- Engine oil.
- Coolant.
- Spare wheel and tyre to suit caravan.
- Tube to suit car and caravan tyre.
- Insulating tape.
- Electrical wire.
- Tow rope.



TOOLS AND EQUIPMENT

- General assortment of hand tools to suit sizes on car and caravan.
- Tyre levers (2).
- Wheel brace to suit wheel nuts on car and caravan.
- Jack to suit car and caravan.
- Tyre gauge.
- Wheel chocks.
- Blocks for placing under corner jacks, stands for wheels for soft ground or unlevel site.

CANVAS CARE

Do not leave exposed to the elements unnecessarily.

Ensure it is dry before storing away.

Do not allow bird droppings, earth, sand or vegetable matter to remain in contact with your annexe.

Keep it clean - by brushing it down regularly both inside and out with a soft brush and hose it occasionally with cold, clean water. Starting at the bottom of the walls and working upwards.

Do not apply soaps, detergents, cleaning fluids and insecticides.

Keep away from petrol, oil, solvents, kerosene or similar fluids.

Should mildew spots appear, these should be brushed off before they become attached.

Persistent mould or mildew growth should be brushed with a solution of one part liquid bleach (White King or similar) and four parts water, allowed to stand for 15 minutes, then wash off with cold, clean water only.

Canvas which has been cleaned, using the above method, may need to be re-proofed.

All tents/annexes erected permanently or for long periods require regular maintenance.

ROLL OUT AWNINGS

Clean vinyl cover with mild soapy solution and warm water, rinse with fresh clean water

Lubricate hardware with silicone spray (or similar). Do not use grease or similar product as this attracts dust and dirt, etc.

The use of guy ropes is recommended for additional stability as sudden wind gusts may remove normal hold down pegs.

Ensure travel and brake locks are engaged after awning is rolled up and before travel.

CARAVAN - CAMPER CARE

- Wash the roof and check the sealer along joints and edges for cracks. If cracks exist, remove old sealer and using a good quality compound, reseal. Someone specialising in caravan repairs and maintenance can either advise on the most suitable product or do the work for you.
- Clean the outside of the van and apply a good quality automotive polish. Although cleaning and polishing a caravan is a time consuming task, the effort is well worth while. In addition to making it look great, the polish will protect the paint and prevent it fading.
- Cover the gas cylinder to prevent moisture affecting the regulator or causing corrosion on the cylinder. Alternatively remove the cylinder and store under cover. If the cylinder is removed, do not forget to protect the regulator.
- Cover the coupling and brake master cylinder if fitted. A large plastic bag is suitable but make sure that it is not completely sealed as condensation may occur. This could do as much damage as the rain you are trying to keep out.
- Paint the A-frame and any other exposed parts of the chassis. Although a silver paint is often used, any good quality exterior enamel can be used. Always prepare the surface as directed by the paint manufacturer.
- Ideally the wheels and tyres should be removed and stored in a cool, dark area. If this is inconvenient, at least cover the tyres to prevent contact with the sun's rays. Also reduce tyre pressures to about 2/3 the normal pressure.

CARAVAN - HOT WATER SERVICES

1. Clean internal fittings of dust, cobwebs, etc.
2. Ensure corrosion is not seizing or affecting movable parts by lubricating regularly.
3. Check anode three monthly for significant deterioration and replace if necessary.
4. On storage type hot water services, the tank should be flushed after a prolonged trip, especially away from your home state, due to changes in the quality of water available.

WHERE TO GET ADDITIONAL HELP

STATE CARAVAN ASSOCIATIONS:

Victoria
Caravan Trade and Industries
Association of Victoria
64 Harcourt St, North Melbourne, Vic. 3051
Phone: (03) 9329 5311 Fax: (03) 9329 6339

Queensland
Caravan Trade and Industries
Association of Queensland Ltd.
P.O. Box 5542, Stafford Heights, Q. 4053
Phone: (07) 3357 4399 Fax: (07) 3357 4422

New South Wales
Caravan and Camping Industry
Association of NSW
P.O. Box H114, Harris Park, NSW 2150.
Phone: (02) 9637 0599 Fax: (02) 9637 0299

South Australia
Caravan and Camping Industries Association
of South Australia Inc.
365 Prospect Rd, Blair Athol, S.A. 5084.
Phone: (08) 8260 4488 Fax: (08) 8260 4088

Western Australia
Caravan Parks and Trades
Association of Western Australia.
P.O. Box 27, Karrinyup, W.A. 6921
Phone: (08) 9243 1208 Fax: (08) 9448 0291

CIL wishes to acknowledge the assistance of Caratech Consultants in the preparation of this handbook

WE'RE ONLY A PHONE CALL AWAY

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FREECALL: 1800 112 481

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