

Caravan Maintenance

A lovely caravan, a great way to have a vacation... but it *must* be properly maintained to keep it in a good, safe and reliable condition

“Keep you ‘van safe and legal”

“Keep the re-sale value of your ‘van high”

“Ensure your vacation goes as planned!”



You have invested a lot of money in your caravan, and it is important to protect your “second home”, by looking after it, and *maintaining* it in good condition.

Maintenance - or rather, “*preventative* maintenance” - is like a safety inspection, and needs to be done on a *regular* basis, so that your ‘van won’t let you down on the road, or when you should be relaxing in a park.

The most important consideration is that you and your family arrive *safely* at your destination, and arrive *safely* back home. Looking after your ‘van gives you the best insurance that it won’t let you down.

Both your caravan *and* your tow-vehicle must be legal/compliant and in a safe condition. They must fully comply with all applicable *ADRs* (Australian Design Rules) and *Australian Standards*. If there have been any modifications to either the tow-vehicle, or the ‘van, the compliance *may* now be invalid.

If you are *not* mechanically knowledgeable and experienced, you should have an *accredited* automotive engineer or mechanic conduct the *technical* aspects of the maintenance, and make any necessary replacements or adjustments.

Only licensed gas-fitters and electricians are permitted to service gas and 230 volt ac electrical appliances and installations.

It is expected that all Dealers will supply *all* of the necessary information (in writing) for proper servicing and maintaining of their ‘vans. If any information is apparently missing - or you do not understand something - do not hesitate to contact the Dealer who sold the ‘van.

Of course, with used ‘vans, some of this information may well have got lost, hence owners should try to obtain a copy of anything that has seemingly disappeared. The most important documents are the “*Owner’s Manuals*” - often jokingly called “*Moaner’s Annuals*” - for the ‘van, and all of the appliances and additional equipment fitted.

Again, if you do *not* feel confident in doing any of the inspection and maintenance items, have them done by an experienced technician, so as best prevent causing any personal or product damage.

Cleaning is a basic first-step in maintaining your ‘van in good condition, and also for allowing proper inspection of components for any damage. Following instructions provided, and do *not* use harsh chemicals, when just soap and water are recommended. Likewise, do *not* use excessive force when rubbing the various surfaces.

Cleaning covers three areas:

- 1: Hard surfaces, such as all exterior surfaces and all interior surfaces of the ‘van, cabinets, appliances, toilet/shower, and vinyl and fibreglass surfaces.
- 2: Soft surfaces, such as canvas, carpets, curtains, bedding, tyres, and all rubber seals.
- 3: Under-side and running-gear, such as the chassis, floor, axles, suspension components, hub assemblies, brakes, wheels, tyres, stabilizers, jockey-wheel, and coupling assembly.

Do not use *full* pressure as a “jet”, but use *moderate* pressure as a “spray” - to simulate a severe rain storm as may reasonably be experienced - to tests all seals (around the ‘van door and compartment doors, windows, hatches, and body/roof panels) for effectiveness. Carefully inspect the interior panels and seams to see if any water leakage has occurred; if so, have the leaks professionally repaired.

Ratings & Masses: It is extremely important to understand all of the relevant Ratings and Masses. It is illegal to exceed any of the Ratings that are set by the manufacturers. If any *are* exceeded, there may well be prosecutions, civil actions, refusals of warranty and insurance claims... and of course, serious accidents and nasty incidents on the road.

- Confirm the Ratings & Actual Masses of the caravan
- Confirm the Ratings – Gross Combination Mass (GCM) /Towing Capacity & Maximum Ball-loading of the tow-vehicle/tow-bar

It is *highly* recommended that you obtain a certified weigh-bridge certificate, stating both the *Tare Mass*, and the *Ball-Loading* at the Tare Mass condition. Record the readings and retain the certificate.

Measured Tare Mass: kg Ball-Loading at the Tare Mass condition: kg

The **Ball-Loading** is *critical* regarding proper handling and stability.

It is also recommended that you obtain a weigh-bridge certificate, for both the *Total Mass*, and the *Ball-Loading*, when you are *fully-loaded*, just to be certain that you are not over-loaded.

Legal Load-Carrying Capacity (LLCC) = Aggregate Trailer Mass (ATM) Rating – Tare Mass

How much water do you *really* need to carry??? Remember, water is included in the “Pay-Load”, and *not* in the “Tare Mass”.

Has the manufacturer supplied the “Ball-Loading at the Tare Mass (empty) Condition”, *and* the “Maximum Permissible Ball-Loading”?

Chassis & A-Frame: Are all structural members - and *welds* - free of damage, cracks, and rust? Is the underside free from damage, timber rotting, mud accumulations, and loose components? Are all tubes, hoses and electrical wires properly protected, secured, and in good condition?

Fill the water tank(s) using a hose at normal pressure. Check all lines and connections for leaks.

50 mm Ball & Coupling: Is the coupling in good condition, and the mounting bolts in good condition and torqued correctly? Is the “anti-rattle” stud correctly adjusted? Is the ball nut tightened to the prescribed torque, and fitted with a lock-washer/nut? If a friction-type anti-sway coupling is fitted, is the ball *physically* prevented from rotating?

Safety Chains & D-Shackles: Are the safety-chains securely welded to the A-Frame? Do the D-Shackles have a stamped Load Rating? *Never* use light alloy spring-loaded tie-down hooks. *Always* use steel D-Shackles, that are as strong as the safety chains, and have a threaded securing bolt.

Tyres: The **tyres** are probably the most important parts of the caravan - and tow-vehicle - regarding safety, ride and handling. Maintaining the correct **tyre pressure** - for the particular load - is *critical*.

They are the vital items that connect the vehicles with the road surface, to provide traction for cornering, acceleration and braking.

Does the **Tyre Placard** state the fitted tyre size; Minimum Load Rating; Minimum Speed Rating? Does it also state the recommended tyre pressures for both the *empty* and *fully-loaded* conditions? If *not*, consult a specialist tyre supplier for advice on tyre sizes and inflation pressures for the various tyre loadings.

Recommended Tyre Pressure (empty): kPa
Recommended Tyre Pressure (fully-loaded): kPa

Carefully inspect *all* tyres (*entire* treads & side-walls) for any damage, cracks or unusual wear.

Wheels: It is important that the wheel-nuts are fully compatible with the wheel hubs and studs, and are tightened in the proper sequence, to the *correct torque*... using a torque-wrench.

Recommended Wheel-nut Torque: Nm:

It is strongly suggested that pencil (or water-proof felt pen) marks be drawn on each wheel-nut, with mating marks on the wheel, so that a quick glance will show if a nut has started to become loose.

Carefully inspect all wheels to ensure they are properly located on the hub, are undamaged, and are in sound condition.

Caravan/Trailer & Tow-Vehicle Wiring: Are the socket and plug - and the break-away switch assembly - in good condition, and positively latched when connected?

Lamps & Reflectors: Do all lamps work correctly? Are all reflectors clean and in good condition?

Appliances: Test *all* appliances and systems properly... on gas, 230 volt ac, and 12 volt dc.
Important: If you suspect even the *slightest* problem, have a licensed technician inspect the 'van.

LPG: Is there a valid certificate of compliance with AS 5601 for the LPG system?

Electricity: Is there a valid certificate of compliance with AS 3000/1 for the electrical system?

Is the Residual Current Device (RCD) operating correctly?

Are extension leads approved and in good condition?

Ensure that each battery and solar-panels are serviced as per the manufacturers' requirements.

Wheel Hub Assemblies: Are the hubs, bearings, stub axles, cap and seals clean and in good condition?

Are the bearings correctly grease-packed, correctly tensioned, and secured with split pins?

Suspension Components: Are all springs in sound condition and positively located?

Are all pins, bushes, hangers and shackles in good condition and lubricated as required?

Tow-Vehicle Inspection: It is *highly* recommended that you have a qualified mechanic inspect all of the safety-related items on the tow-vehicle, as would be done for a *Road-Worthiness* inspection.

- Are the tyres - including the spare - in good condition, and at the correct inflation pressure?
- Can each of the road wheels be easily removed from the caravan?
- Is the spare wheel(s) supplied suitable for the caravan?
- Does the spare wheel(s) supplied fit the caravan axle hub?
- Are the wheel nuts compatible with the spare wheel(s)?
- Are the brakes in good condition, and provide straight-line stopping on a hard stop?
- Is the Tow-Bar in sound condition?
- Are the mounting bolts of high-grade, in good condition and correctly tightened?

Connect the Combination:

- Are the vehicles level (in a side view)?
- Are the safety-chains, D-shackles, jockey-wheel and coupling working properly?
- Is the Jack approved, in good condition, and suitable for raising each tyre from the ground?
- Is the jack suitable for raising a deflated tyre to a sufficient height to enable a fully-inflated spare tyre to be fitted?
- Test-drive the vehicle combination at reasonable speeds on various road surfaces, to ensure the handling and stability seem OK.
- Ensure the brakes are working correctly, on both dry and wet roads.
- Appreciate the time and distance it takes to accelerate (to over-take another vehicle), and to decelerate.
- Appreciate the handling characteristics of the combination when cornering.

Braking System: Because of the higher mass of the combination, the braking systems of both the 'van and tow-vehicle, must be in sound condition, and *adjusted* correctly to provide the best possible *straight-line* braking. It is imperative that you test the braking system for proper "balance" - *before* you head off on vacation - on a *safe* gravel or wet road, before testing them at a higher speed on a dry sealed road.

It is important to know what brake pedal effort is required to provide the required stopping performance.

- Check that the sliding mechanism of an over-ride braking system in the coupling is in good condition, and lubricated to provide consistent and smooth braking.
- Check that the drums/discs and shoes/pads assemblies are in good condition.
- Check that the cable system in a mechanical over-ride braking system is in good condition and adjusted correctly.
- Ensure that you fully understand the operation - and adjustment - of electronic brake controllers.

If the over-ride braking system is hydraulic-actuated, check that the fluid is in good condition, the hydraulic system is free of leaks, and the brakes are adjusted correctly. If in doubt, have a trained technician replace the fluid with new fluid, and bleed the system of air.

Towing Equipment: Ask a specialist caravan equipment supplier if you should be using any towing aids: (a) Weight-Distribution Hitch (WDH), (b) Anti-Sway System, (c) Extended Mirrors.

If you *are* using a towing aid, ensure that you understand how to *install* - and correctly *adjust* - it.

Personal Protection: Do you have suitable *current* insurance for the caravan and tow-vehicle?

Do you have a fire extinguisher, smoke-detector, CO [carbon monoxide] -detector, and a First Aid kit? Are they accessible and in good condition?

Ensure that *everyone* who will be in the caravan reads and understands *all* safety notices, and knows what to do in an emergency.

Happy & Safe Travels!!!

Note: Detailed articles on "**Caravan - and Tow-Vehicle - Inspections**" and "**Tyres**" can be down-loaded from:

<http://www.caravancouncil.com.au/#!/technical-articles/cbu9>

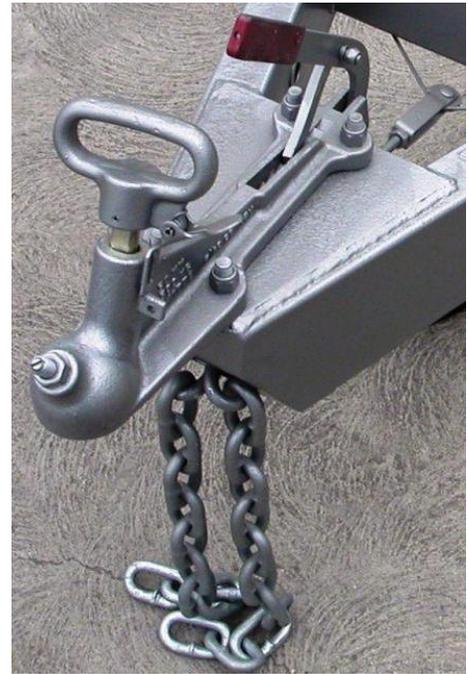
Disclaimer:

This information is *not* to be deemed to be legal advice. It is supplied in good faith and is believed to be correct. However, no liability whatsoever is accepted from the use or reliance of this, or other information available on the CCA web-site.

Caravan Council of Australia www.caravancouncil.com.au caravancouncil@optusnet.com.au



A very important safety item... an accurate tyre pressure gauge



Vital attachment... Coupling & Safety Chains



**Tyre Side-wall, showing Load Rating
Inspect all Side-walls carefully for cracks**



Inspect Tyre Treads for wear or damage



Check Wheel-nuts and Alignment (tandem-axles)