

Caravan / Trailer Handling & Stability Issues

We receive *many* complaints about, and also witness first hand, poor - and dangerous - handling and stability of caravans and large camper-trailers on our roads.

The *Caravan Council of Australia* is endeavouring to assist 'vanners in determining the cause(s), and then suggest actions to resolve the issues.

Our web-site - www.caravancouncil.com.au - under "Technical Articles" on the home-page, there is a *Questionnaire* for 'vanners who experience these disturbing, and often frightening, problems on the road.

Masses and Ratings continue - apart from driver issues - to be the No: 1 cause of nasty incidents involving 'vans on the road, and the main reason for complaints and litigation.

A lot of 'vans are hideously over-loaded, and even worse, have Ball-loadings that are either way too high, or way too low.

In light of recent legal actions and *ACL* considerations, one may well argue that a manufacturer has an obligation to professionally design, engineer, test, manufacture and inspect, *all* variants of their 'van models, to ensure that they can accurately and fully inform customers of "what they may reasonably be required to know", regarding legal and safety issues, when loading and operating their 'vans.

One shocking case was a new 'van with an *empty* Ball-loading of 360 kg... in addition, there were *two* (empty) water tanks, both *ahead* of the axles!!! There is a current case involving 'vans with dangerous handling, where two water tanks are both *behind* the axles!!!

An important consideration is ensuring that regardless of the combinations of contents of water tanks, the ball-loading *variation* is minimized.

Tyres - size, load-rating, condition, and most of all... inflation pressures - also have a large bearing on a caravan's handling and stability characteristics.

Too many tyres are dangerously *over*-loaded or grossly *under*-loaded, and/or have inflation pressures either too high, or too low.

Unfortunately, a lot of manufacturers do *not* specify the *recommended* - by the *Tyre & Rim Association* - pressures, for both the empty *and* the fully-loaded conditions.

Obviously the manufacturer and dealer have *no* control whatsoever on how the customer loads their 'van, and how they drive on the road, but it behoves them to make their 'vans as stable as possible, and to best-assist their customers with factual information.

Owners with handling and stability problems are most welcome to email the completed *Questionnaire* to the CCA - caravancouncil@optusnet.com.au - where we will attempt to assist them.

Please provide additional information - or ask questions - if desired...

Needless to say, the responses *must* be completely honest and sufficiently detailed... with *accurate* weight and tyre-pressure measurements provided. Guesses and assumptions are completely pointless.

If required, the CCA has accredited independent experienced professional automotive engineers in some States to provide further consultancy assistance.

Feel free to down-load the various *Technical Articles* from the home-page, and other page buttons.

Caravan / Trailer Handling & Stability Issues

Caravan/Trailer Make & Model (Optional):

ATM Rating: kg GTM Rating: kg Axle-Group Rating: kg

Plated Tare Mass: kg Plated Tyre Pressure(s): kPa

Plated (Empty) Ball-Loading: kg Weighed (Empty) Ball-Loading: kg

Weighed Tare Mass: kg Complete Tyre Size:

Date of Manufacture: / Tyre Load Rating: Tyre Speed Rating:

Axle(s): SINGLE / TANDEM Suspension: INDEPENDENT / SOLID-AXLE(S)

Tow-Vehicle Make & Model & Year:

GVM Rating: kg GCM Rating: kg Rear-Axle Rating: kg

Towing Rating: kg Tow-Ball down-load Rating: kg

Tyre Size: Plated Tyre Pressures: kPa

Distance of Tow-Ball from Rear Axle: mm Height of Ball: mm

WDS (Weight-Distribution System) Fitted: YES / NO If so, Rating: kg

Nature of Handling/Stability Issues:

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Conditions When Issues Arise (Speeds, Type of road surfaces, Water tanks full or empty, Vehicle empty or fully-loaded, WDS fitted, Anti-sway fitted, etc.; Has the vehicle always had these issues?):

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Has the vehicle been weighed – Axle(s)-Loading & Ball-loading – at these conditions: YES / NO

If so, what were the readings: Axle(s)-Loading kg Ball-loading Kg

What were the tyre pressures of the vehicle: kPa

What were the tyre pressures of the tow vehicle: Front: kPa Rear: kPa

Has the vehicle been towed by another tow-vehicle: YES / NO

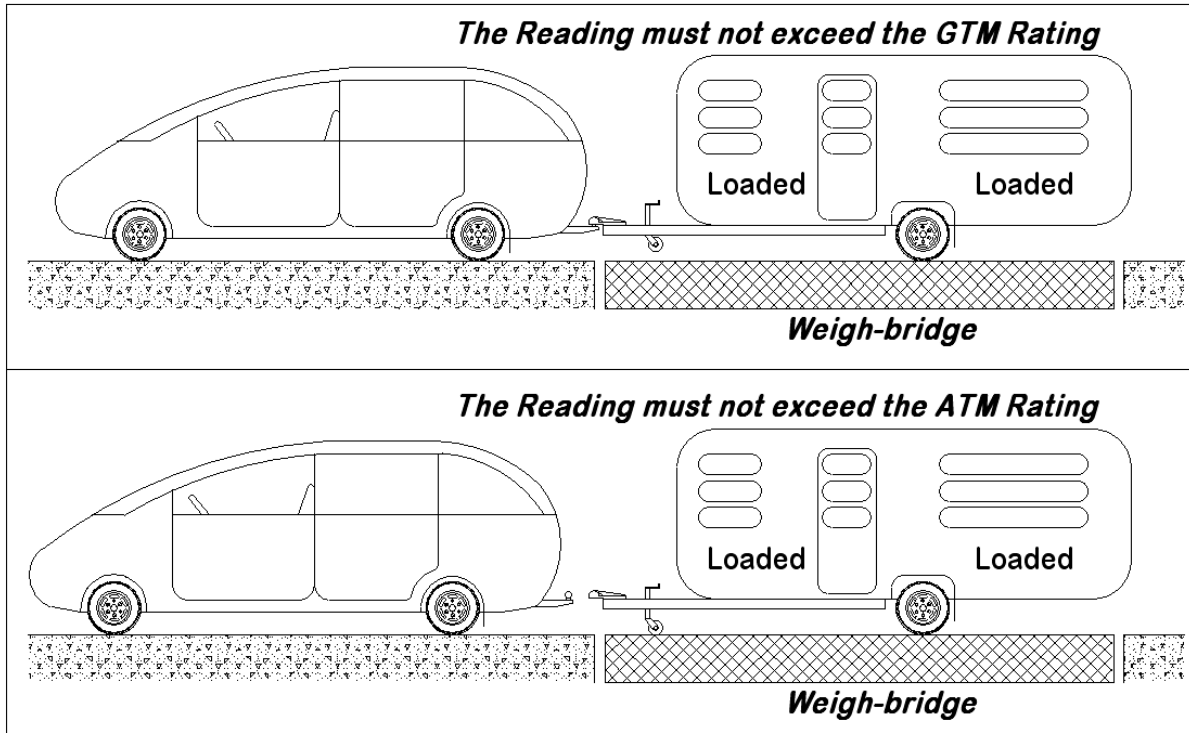
If so, were the same handling issues still experienced: YES / NO

Caravan Ratings & Masses

The GTM & ATM are Ratings... allocated by the Manufacturer

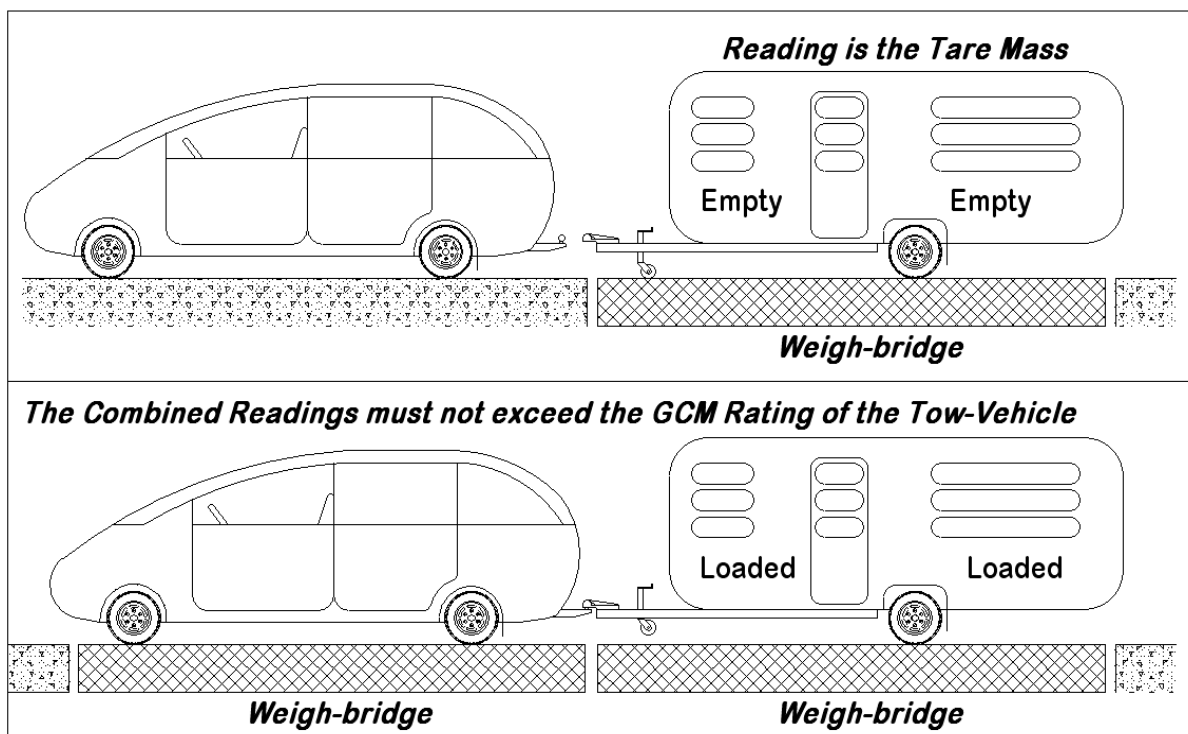
The Tare Mass and Ball-Loading are Actual Masses... that must be measured

The Tare Mass is the *actual measured mass* of the vehicle as it leaves the Supplier. The vehicle is fitted with everything that was stated on the *Purchase Contract*. The vehicle is empty. The gas cylinder(s) and the water tank(s) must be empty.

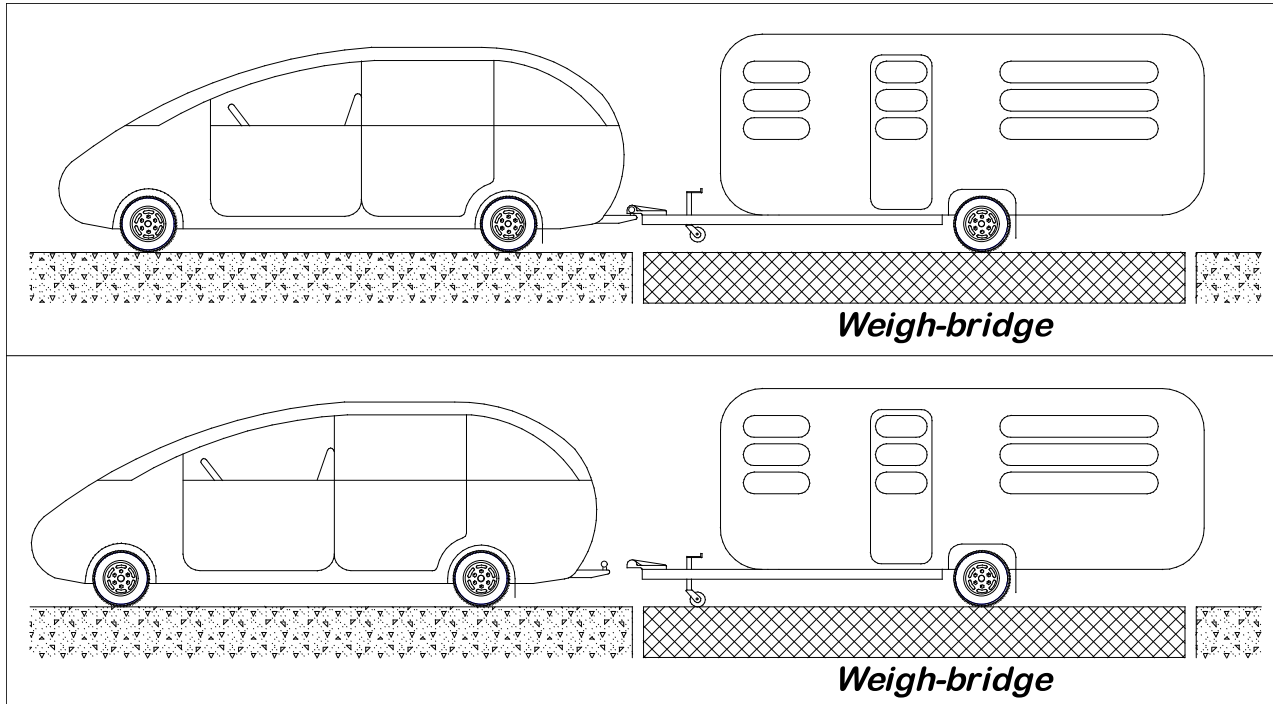


Drawing 1 shows measuring the “**Axle-Loading**” Must not exceed the **GTM** Rating

Drawing 2 shows measuring the “**All-Up Mass**” Must not exceed the **ATM** Rating



Legal Load-Carrying Capacity = ATM Rating – Tare Mass



The Ball-Loading is the *difference* between the two readings

ATM: Aggregate Trailer Mass (Rating)

GTM: Gross Trailer Mass (Rating)

The GTM Rating must *not* exceed the *lowest* of the “Axle-Group” Ratings.

The “Axle-Group” comprises the:

- **Wheels & Tyres**
- **Suspension Structure**
- **Springs**
- **Axles & Wheel-Bearings**

Tow-Vehicles:

- **GVM: Gross Vehicle Mass (Rating)**
- **GCM: Gross Combination Mass (Rating)**
- **RAC: Rear Axle Capacity (Rating)**
- **Maximum Permitted Towing Capacity: (Rating)**
- **Maximum Permitted Coupling Down-load Capacity: (Rating)**

Tow-Bar: Maximum Permitted Towing & Down-load Limits: (Ratings)