

Customer Issues relating to the Caravan Manufacture and Sales industry.

This discussion seeks to outline through a personal anecdote, how aspects of a Caravans specification can affect the vehicle's fitness for purpose.

This discussion relates to the new 16'8" Single axle caravan sold to us at a Brisbane RV retailer in February 2016. The van was sold to us as being suitable to tow behind a (Max Towing 2500kg, Tow Ball Loading 250kg). Indeed, at our additional cost we were fitted with a tow bar, hitch and a load distribution system to match those loadings. No effort was made at the time of sale to point out, or document that the figures given on the compliance plate are not related to the real world in that they do not include the weight of water stored on board in the various tanks, nor the gas storage bottles or their contents. Nor was it mentioned that the measurements shown on the compliance plate are quite commonly understated by the industry, a fact that appears to be borne out by the weighbridge measurements set out below.

In our case the most extraordinary concern is that the Draw Bar Mass 171kg (plated) or 180kg (measured) increases way up to 320kg (measured) when water and gas is loaded. This figure is way above the cars rated capacity and also that of the towbar and hitch that the retailer fitted.

Secondly, after water and gas are on board, the remaining weight capacity for luggage is well less than is required for the normal goods and provisions a reasonable customer would expect to be able to carry on board.

Thirdly, the fitted tow-ball coupling does not appear to comply with the current design standard if the van is to be towed with the chassis level to the ground.

It is argued that the vehicle as sold is not fit for purpose if it is accepted that the Manufacturer and the Retailer should exercise a Duty of Care to inform a buyer of the limitations that would apply in relation to the consumers intended towing vehicle. Any scanning of Australian Caravan and RV internet sites and Forums will show that this is a widespread problem causing extreme concern to many consumers.

I do not believe that the consumer should be expected to be armed with the technical knowledge to detect these things prior to sale. At the very least, Consumer Law should require an appropriate amount of disclosure by the Manufacturers and Retailers prior to sale, and perhaps they should retain a liability for inappropriate or unconscionable sales.

Towing Tare Mass – GTM Rating – ATM Rating – Ball-loading – Loading Capacity and Tow Hitch height.

Outline:

Following is a self-written technical discussion in support of the contentions above. It has been put together by me as a non-expert but using references which I believe can be trusted.

Definitions:

- Legal Load-Carrying Capacity = ATM Rating – Tare Mass
- The actual Tow Ball Loading is the *difference* between the two readings (Tare Mass while hitched and not hitched)
 - From *"2013 Caravan Council of Australia"*

Compliance Plate

See the photo of the Trailer Compliance plate below

Weighbridge Measured Results

See the below photos of Public weighbridge results

*See note:

Note: These measurements were made with every effort to parallel the method of measurement used by manufacturers for the compliance plate. - Reference as provided by the Caravan Council of Australia, i.e.: 1. No Luggage loadings of any kind. 2. No gas bottles fitted, 3. No water on board and 4. No owner-fitted accessories or additions. 5. In preparation the HWS was emptied and the van was tilted at a high side angle to drain the water tanks as much as possible.

Load Capacity

Load Capacity: empty of water and gas and all other luggage and non-manufactures fittings

	Compliance Plate	Measured at Burpengary weighbridge	Variance
ATM	2500	N/a	N/a
Tare Mass	2096	2140	+44
Tow Ball loading*1	172	180 note*1	+9
Load Capacity	404	360	-44

Note *1 Calculated as the difference derived by subtracting the measured Tare weight (i.e.: with the trailer hitched) compared with it unhitched. See the weighbridge certificate above.

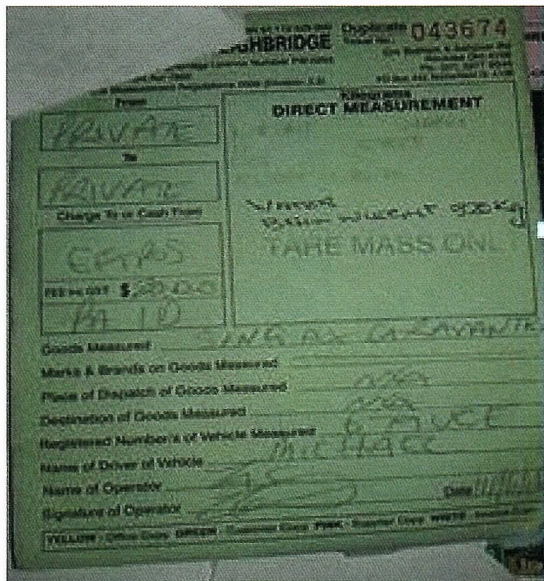
Load Capacity: after water and gas

Load capacity less water and gas note*2	124	80	-44
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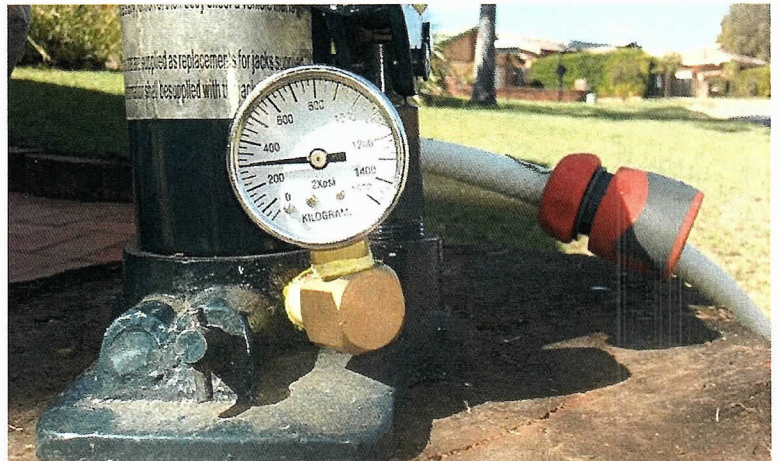
Note *2 Calculated as 220l of water in tanks and 20 litres in HWS = 240kg. Add 40kg for two full gas tanks = 280kg

Summation: Depending on the correctness of either set of measurements, it is very possible that the available load capacity in this is as low as 80 to 100Kg and is well less than the van for the normal goods and provisions a reasonable customer would expect to be able to carry on board.

Actual Tow Ball Mass when loaded



See the photo showing the Gross weight 2400kg and a TBM and 320kg (hand written) Rocklea Public weighbridge 043674



This measurement was made with water on board in the tanks and HWS and with both gas tanks partially full. While this figure seems extraordinary, it has been corroborated using two separate portable units. Allowing for some measurement error it also is in line with the calculated method below as provided by the Caravan Council of Australia.



Summation: This TBM figure is way out of line with rule-of-thumb expectation (GTM/10). The TBM is also grossly outside the capacity of the car (PB Challenger MY10) for which the van was recommended at point of sale. It seems likely to be caused by the positioning of two water tanks and the HWS in front of the axle.

Tow Ball Hitch design and installation – VBS 1, ADR and AS standards

Please refer to Vehicle Standards Bulletin VSB1 - precise below.

Ball couplings under VBS1

16.4 Couplings

Trailers that do not exceed 3.5 tonnes ATM must have a quick release coupling which is designed to be engaged and disengaged without the use of tools. It must be of a positive locking type with provision for a second independent device. The locking must be readily verifiable by visual inspection.

16.4.1: 50mm Ball Couplings

Ball couplings used on trailers with an ATM that does not exceed 3.5 tonnes must comply with Australian Standard AS 4177.3-2004 Caravan and light trailer towing components Part 3: Coupling body for ball couplings.

Ball couplings on tow bars are required to be installed so that the height of the centre of the body of the ball coupling is between 350mm and 420mm from the ground when laden (Refer to ADR 62/01). Alternatively, if complying with the requirements of ADR 62/02 the maximum height of the centre of the body of the ball coupling may be increased to 460mm. However, the ball may be installed at any other height, provided it is also capable of being adjusted to at least one height within the 350-460mm range.

The coupling body used on trailers should be designed to be compatible with these heights.

The coupling body (tow ball) height on our van is measured on our van at approximately 620 to 625 mm using the following method.

- A height is taken as close to the axle as possible from the ground to the top of the chassis member that continues on to form the draw bar A frame. (600mm)
- The 50mm tow ball hitch is mounted to the top of this frame and an allowance of 20mm to 25mm is added to approximate the centre point of the ball.
- The van is assumed to be level when towing to determine the result at 625mm.

Summation: The design rule is difficult to interpret, and I am not sure when ADR 62/02 becomes applicable. ADR 62/01 does seem to imply that the tow ball hitch should not exceed 460mm in height. The difference of 165mm is too great to be adjusted by tilting the van. The 625 height does not appear to be suitable for most light vehicles.

Overall Summation:

It would not be unreasonable to say that the Manufacturer and the Retailer together should at least have advised me as a buyer that this van, despite being only 16'8" long and having single axle, is not generally suitable to be towed behind a light or medium 4WD such as ours.