Load Carrying Capacity - How Much is Enough?

What Is Load Carrying Capacity?

When in reference to a recreational vehicle, load carrying capacity is the amount of weight/ load (in kg's) that a recreational vehicle can legally and safely carry. This includes (but is not limited to) any fluids, luggage/ personal effects and or after-market fittings/ equipment which may be added.

"But I always allow a 300kg load carrying capacity for my single axle models, and 400kg for my tandem axle vans."

Whilst this may still be acceptable in some instances, this generic "rule of thumb" is no longer an accurate assumption for the new varied recreational vehicles we are seeing out in the market place today. Technological developments in components such as chassis', axles and suspension set ups, tyres, couplings and wheels have enabled manufacturers to build towable recreational vehicles which have the potential to carry loads in excess of the once "industry standard" of 300 or 400kg.

Load Carry Capacities need to be Calculated – not Assumed

Load carrying capacity should be calculated based on evidence, not on assumptions or static figures, and should be considered during the design and build process – not simply allocated once the product is manufactured and weighed. Considering load carrying capacity during the design stage of production will allow the manufacturer to specify and allow for the required loads when ordering (or manufacturing) the chassis and associated components such as axles, suspension, coupling, tyres and wheels. It is too late once the towable recreational vehicle is completed and weighed only to discover the suspension (or any other load rated component) is underrated given the TARE weight of towable recreational vehicle PLUS the minimum calculated load carrying capacity.

Load Distribution

In addition to the above, considering the way in which loads are distributed throughout the recreational vehicle during the design stage of production will also enable the manufacturer to produce a product which is more stable and better balanced for towing.

Extensive research on the effects of load distribution has been carried out by the Department of Mechanical Engineering at the University of Bath in partnership with Bailey of Bristol. The Department of Mechanical Engineering at the University of Bath has been involved in caravan stability research for nearly twenty years and is now regarded by many within the industry as the foremost independent authority on this subject.

Click on the image on the right to watch an interesting video on the effects load distribution have on towing stability.

Minimum Load Carrying Capacity

The minimum load carrying capacity required for a towable recreational vehicle such as a caravan, pop top or camper trailer should be calculated based on the following factors:

1. Sleeping Capacity - How many designated sleeping areas are required or supplied?

- An average of 13.6kg of luggage per occupant shall be accounted for. Personal effects such as books, computers, camping chairs etc. shall be calculated @120kg for 1 and 2 berths and 20kg for every berth thereafter.

Sleeping Capacity	Load allowance required (in kg*)
1	134
2	147
3	181
4	214
5	248
6	282
7	315
8	349

*rounded to the nearest whole number

2. Water Tanks – What is the required total capacity of the water tanks?

- This includes calculating the fresh, grey and black water tanks, as well as the capacity of the hot water system (remember 1 litre = 1 kilogram)

3. Gas Bottles – How many and of what capacity?

- Note that the capacity (e.g. 9kg) of the gas bottle represents its weight when filled with LPG.

4. Jerry Cans – Are Jerry Cans or Jerry Can holders fitted to the Recreational Vehicle?

- (remember 1 litre = 1 kilogram)

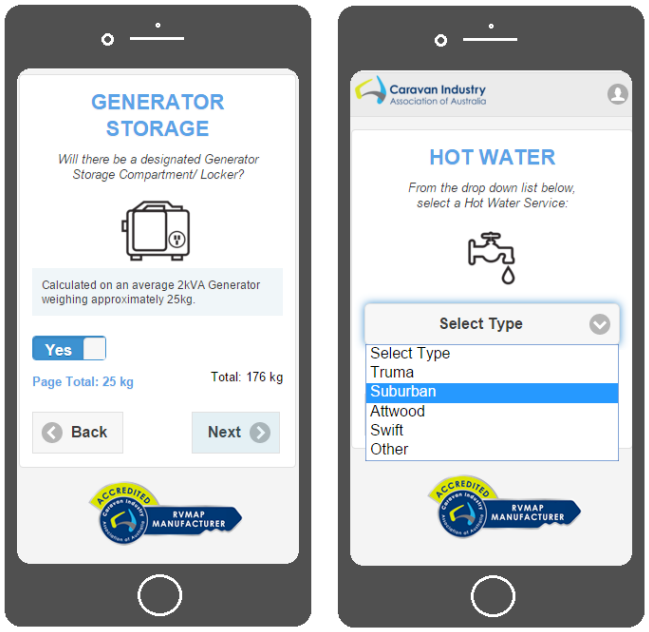
5. Any Other Fluids?

- Generator fuel, central heater fuel tank etc.

6. Provisions for other Appliances, Machinery, Components or Accessories such as:

- Generator – is there a generator slide fitted to the Recreational Vehicle?
- Additional Spare Tyre– where an extra bracket fitted with no spare wheel supplied.
- Portable Cooker or Barbecue - Is there provisions for the use and storage of a Portable barbecue or cooker? (E.g. external gas bayonet and appropriately sized storage compartment).
- Bicycle Rack - Is there provisions in place to store or carry Bicycles, such as a Bicycle Rack?
- Annexe / Awning Walls - Is an Annexe/ Awning Walls to be fitted?

Caravan Industry
Association of Australia



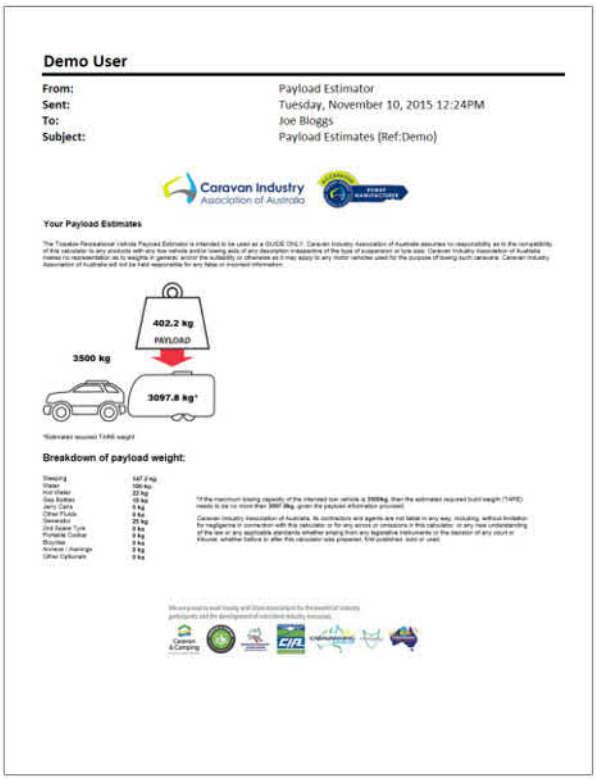
Payload Estimator

Caravan Industry Association of Australia's Payload Estimator Mobile Website simplifies this task and systematically guides the user through the expected loads. Predetermined average weights and capacities within the Estimator allow the user to quickly go through all the options, with a running total automatically calculating as you progress.

The Payload Estimator Mobile Website also provides the registered user a summary email each time a calculation is submitted (see sample below). By providing a reference name or number (e.g. customer name – SMITH) when you start, the user is able to keep track of and file several estimates within an inbox folder, or print the summary email out and place it in the production folder or consumer file.

Caravan Industry Association of Australia's Payload Estimator Mobile Website is currently available for use by RVMAP manufacturers and industry businesses. To access the Estimator, simply click the link below, accept the conditions of use and follow the prompts.

www.caravanindustry.com.au/payloadestimator/



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