# The permissible load for your motorhome

For calculating the permissible load**G**you need the following information:

G: Payload = dead weight of the motorcycle carrier**G**ₘ+Dead weight scooter/motorcycle**G**ᵣ

Vᵣ: actual rear axle load. You can get this by weighing the rear axle on a scale. Make sure that the vehicle is loaded in a ready-to-travel condition (water, luggage, etc.!!)

Vz: permissible rear axle load. You can find this on your vehicle registration

A: document. Wheelbase between front and rear axles.

B: Distance between the rear axle and the center of gravity of the load. For a rough calculation, this can be assumed to be approx. 45 cm behind the end of the vehicle.

G(payload)

A

b

Vᵣ(real rear axle load)

Vz(permissible rear axle load)
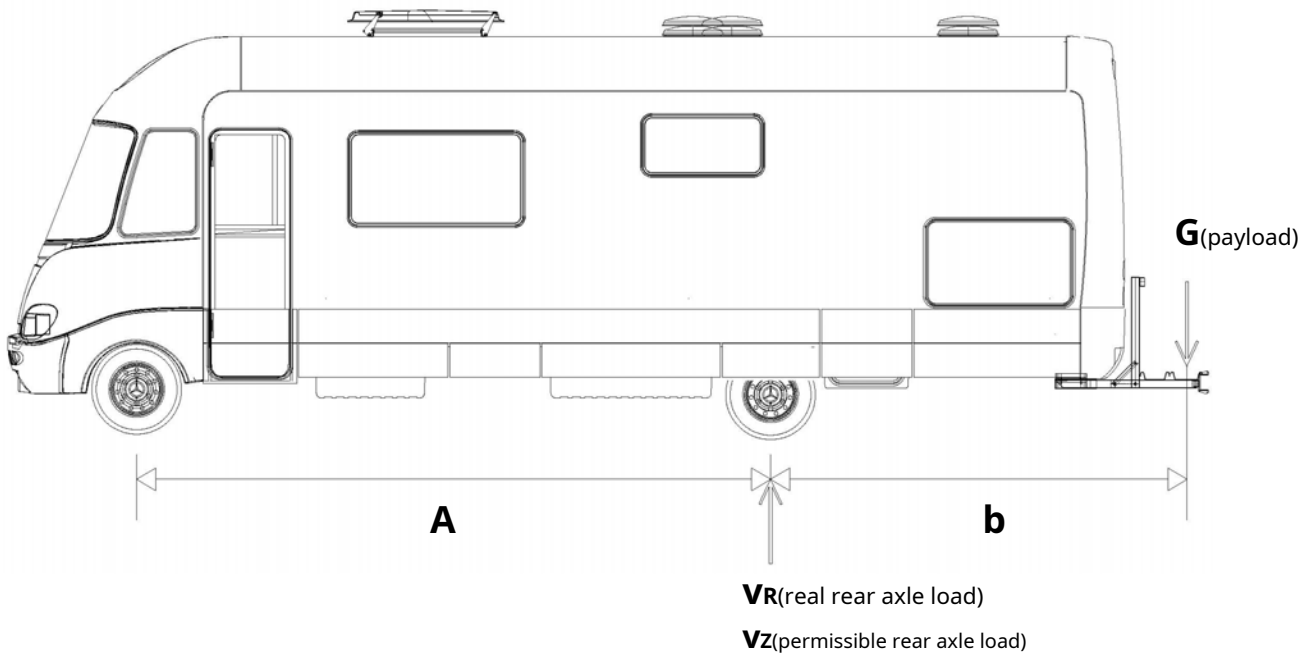
The possible payload is calculated using these values (**G**)according to the following formula:

$$G = \frac{(V_Z - V_R) \times A}{A+B}$$

If you are concerned about the weight of your scooter/motorcycle**G**ᵣas well as the weight of the motorcycle carrier**G**ₘis known, you can calculate the resulting additional load on the rear axle (**Δv**)determine using the following formula:

$$\Delta V = \frac{(G_R + G_M) \times (A + B)}{A}$$

Example calculation(Values freely chosen):

A) Maximum payload G based on the rear axle load:

vᵣ=1880kg;**v**z=2150kg;**A**=3.3m;**b**=2.4m⇒**max G**= $\frac{(2150 - 1880) \times 3.3}{3.3 + 2.4} = \frac{891}{5.7} =$ **156kg**

B) Additional load on the rear axle from the motorcycle carrier:

Gᵣ=121kg;**G**ₘ=35kg;**A**=3.3m;**b**=2.4m⇒ **Δv**= $\frac{(121 + 35) \times (3.3 + 2.4)}{3.3} = \frac{890}{3.3} =$ **270kg**