



Technical Information

East Grinstead House
East Grinstead, West Sussex RH19 1UA
Telephone: 01342 326944
Fax: 01342 410258
www.caravanclub.co.uk

HINTS FOR TRAILER CARAVANNERS

This leaflet is prepared by The Caravan Club as part of its service to members. The contents are believed correct at the date of publication but the current position may be checked with the Information Office of the Club.

August 2008

One question often asked is "**How can I make sure that I am towing safely?**"

The need for safety on the road overrides all other considerations. Caravanning is first and foremost a relaxation, and to arrive at your chosen destination flustered, with the family's nerves on edge, probably late - or worse still, not at all because of an accident on the road - is not a good way to start a holiday. You need to achieve a comfortable safe tow of your trailer caravan before you set off on the road. Priority one is a good outfit weight ratio and power to weight ratio, and priority two is the correct balance of car and caravan. Some of the terms used may be unfamiliar - see attached definitions.

1. WEIGHT RATIOS

For safe, stable towing, choose the smallest lightest possible caravan that meets your needs. The lower the laden weight of the caravan pulled by your car, the safer the whole outfit. The Club's advice is to aim for a towed load no more than 85% of the car's kerb weight for safety and stability. **NEVER** tow above 100% of the car's kerbside weight. In fact, if you passed your test after 1 January 1997 it would be illegal to do so without taking a further test to extend your towing entitlement. To establish the caravan's Actual Laden Weight (ALW), either take it fully loaded to a weighbridge, or take the ex-works weight (see manufacturer's brochure or handbook) and add to it the weight of every item you have either added or loaded into the caravan.

Note: If you are buying an older (eg pre-1994 or so) caravan, be aware that it was not unknown for the actual unladen weight of the caravan to differ significantly from the plated unladen weight. This can reduce your available payload or even lead to inadvertent overloading. If in any doubt, have the caravan weighed on a weighbridge - contact your nearest Trading Standards Office for details. Revised standards and changing industry practice have improved, if not virtually eliminated this problem in recent years.

The car manufacturer, in brochure or handbook, should give the braked towing limit for the car, which is often only a statement of the car's ability to re-start on a gradient of, usually, 1 in 8. This limit quite often suggests a weight greater than that of the car itself. It should be pointed out, however, that this figure is not intended to indicate the maximum weight of caravan the car can pull **safely or comfortably**. As far as pulling power is concerned, opt if you can for an engine that offers at least 40 Brake Horse Power (bhp) per ton of "train weight". To do this divide engine bhp by combined tonnage of loaded car and caravan.

For example, a 1800cc, 115bhp vehicle with a kerb weight of 1367kg plus passengers and luggage (say 250kg) pulls a loaded caravan of 85% of the *kerb* weight of the car, ie $1367\text{kg} \times 85\% = 1160\text{kg}$. Add together 1367kg plus 250kg plus 1160kg, giving a total train weight of 2777kg. Divide 2777kg by 1000kg (one tonne) which gives a figure of 2.77kg (approx), then multiply this by 40(bhp) giving 111bhp (approx). The car has 115bhp, so 111bhp is adequate to pull the caravan.

Note: This rule does not necessarily apply to older, diesel-engined cars, where good, low-end torque will often make up for any loss of bhp. However, the latest generation of diesels are tending to have both power output and power delivery characteristics which are more like those of petrol engines, meaning that this guideline can be used for cars of both fuel types.

1. BALANCE

Although it is especially important to load the caravan correctly, remember that the balance of car and caravan linked together as an outfit is essential for stable towing. Here we come to a contradiction. As a general rule the caravan will tow better if it is nose-heavy, but if this results in the rear of the car sagging, the car (and therefore the whole outfit) will become much less stable. This is because as the rear end goes down, the front comes up; control of the steering is reduced and, with front wheel drive cars, the wheels cannot grip enough to pull, particularly uphill. Your caravan too will be travelling very nose-down, though this is better than the opposite, nose-up, and you should aim for the caravan to be level if possible. Cars with suspension in good condition should rarely struggle when matched to an appropriate caravan, and those with self-levelling suspension certainly benefit the caravanner. If you have an older car, however, you may have to fit aids to the rear suspension, such as heavy duty shock absorbers and springs.

2. DISTRIBUTING THE OUTFIT LOAD

Before you start loading your kit into car or caravan, consider the outfit as a whole. Consult the car Handbook for the recommended total permitted load, and rear axle loading limit. Deduct from the latter the recommended maximum trailer noseweight that the car is designed to accept. Ensure that the combined weight of loaded car and caravan will be within the stated '**gross train weight**'/VIN plate (see p12 for **definitions**) that you will ask the car to pull. If only two people are touring you will have a better chance of loading as much as possible into the car, in particular with a vehicle that has a folding rear seat, as you can load heavy items well forward in front of the rear axle. If there are four or more in the car, then you will have to be much stricter and limit loading accordingly; it is the last tin of food or whatever that will prove too much for the car.

3. LOADING THE CARAVAN

There are two basic rules here: keep the load low, and over or in front of the axle. Because a caravan is free to swing behind the towing vehicle, any heavy weight at the extreme rear will multiply the pendulum effect if swinging starts. For the same reason the lower down the weight of stowed items, the lower the centre of gravity, and the least likelihood of upset.

The caravan manufacturer will have made assumptions about what you will need to carry when designing the caravan taking into account the requirements of relevant standards. Some caravans will only have the minimum payload that the standards require, whereas others are more generous - check that the allowance is sufficient for your requirements.

If you seem to be on the limit for weight, ask the manufacturer whether the MAW or MTPLM can be raised, to give you more payload. While this was sometimes possible with older caravans, it is less commonly feasible with the latest designs.

When you have established which items are to go in the car, and which in the caravan, decide on their positioning. The caravan manufacturer will have made design assumptions also about the weight distribution when the caravan is loaded. He should have placed the axle line as far back as possible for stability but, when the gas cylinder locker is loaded, this should not make the van too nose-heavy. As this locker is equipped to take two gas cylinders (two filled 7kg steel cylinders total 30kg) and often a spare wheel (around 15kg), the nose-load problems increase.

Two berth caravans tend to be designed with the '**plumbing**' (kitchen and bathroom) at the rear. Kitchen storage also exists there, and the temptation to load a lot of heavy crockery, tinned foods etc, at the tail end must be resisted. This is important in any van, but centre kitchens, set between two living ends, produce better weight

positioning above the axle. The weight of tinned foods is anyway something your car engine will not thank you for and it would be better to purchase these on arrival at your destination or consider dried and packet foods to keep the weight to a minimum.

Securing the load is particularly important. Whenever carried, gas cylinders **must** travel upright for safety and be securely held so that they cannot break loose. An upset chemical closet, or even water container with cap washer missing or worn, will cause considerable damage and staining. Swerving on the road, as when negotiating a roundabout, and also vertical bouncing on bad roads, will test the door and drawer catches or restraints. Make sure that any breakables, whether eggs or glassware, are stored where they cannot come loose: melamine crockery, very attractive nowadays, pays in the long run and saves on weight.

Remember that water weighs a considerable amount (4.5kg or 10lb a gallon) so travel with only what you need for the journey itself. A small amount in a large container will surge round which is not a good idea, so a separate smaller container, even a plastic squash bottle or two, should be adequate.

We are often asked to advise on what is essential equipment in a caravan. Remembering the overall weight problem the simple answer is - the minimum for your needs. A weekend in the country with only breakfast in the caravan, a sandwich lunch and a pub supper will require obviously less than a three week holiday abroad. A check list of most of the items you should require is available, but this is quite long and may be more than required. One good tip is to make certain that, when you have established what your essentials are, you leave them in the caravan throughout the season. If not, you will arrive on site with something essential absent! A good set of melamine crockery, cutlery sets for numbers travelling, and a 3-in-1 set of non-stick saucepans, or a pressure cooker will do. Do leave the chip pan at home; it is a considerable fire risk.

If your caravan is equipped to connect to a mains electrical 'hook-up' on site, check what electrical items are worth taking. Up to 16 amps may be expected on Club sites; a lower amperage may be available on CLs, non-Club sites or sites overseas. Divide the wattage of each appliance by the supply voltage (230v) to establish the current in amps. If you can choose lower wattage appliances (especially kettles and heaters), this will help avoid problems with the power supply and will often save you weight as well.

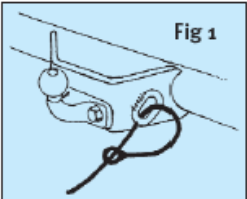
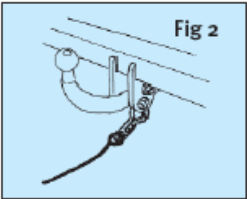
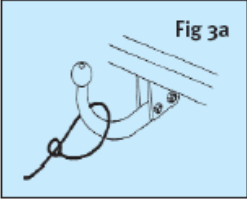
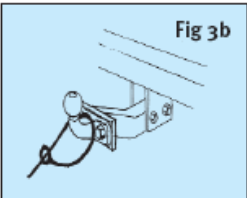
4. SETTING OFF

Listed in your Sites Directory and Handbook is a specimen list of checks to be made before you set off. Do make up your own and keep it with you when touring.

Hitching up will be greatly helped if you have an assistant - and if you agree on the meaning of any signals given! With older caravans in which the coupling shaft rotates freely through 360 degrees, it may be easiest to reverse until the towball is alongside the caravan's coupling head. Winding the jockey wheel, raise the coupling above the level of the towball. It is now easier to rock the caravan sideways than to try and move it backwards or forwards. Next, holding the locking catch open, turn the winding handle the other way to lower the coupling onto the ball. With the rotating shaft type, you can slide the coupling across and onto the ball with a rocking motion: with the more rigid Al-Ko type, more precise positioning may be necessary. A click will be heard when the locking catch engages. New hitch heads have an indicator button to let you know when it is properly engaged. A further advice sheet entitled 'Coupling Up a Caravan to a Car' is available on the Club website, www.caravanclub.co.uk.

The caravan industry guidance on breakaway cable usage is reproduced below:

Correct Attachment of Breakaway Cables Braked Trailers (up to 3500kg GVW)

<p style="text-align: center;">Where a designated attachment point is provided on the towbar:</p> <p>Either:</p> <p>a) Pass the cable through the attachment point and clip it back on itself (Fig. 1),</p>  <p>Fig 1</p> <p>Or:</p> <p>b) Attach the clip directly to the designated point (Fig. 2). This alternative must be specifically permitted by the trailer manufacturer since the clip may not be sufficiently strong for use in this way.</p>  <p>Fig 2</p>	<p style="text-align: center;">Where no designated attachment point has been provided on the towbar:</p> <p>Fixed ball Loop the cable around the neck of the towball. If you fit the cable like this, use a single loop only. See Figs. 3A and 3B.</p>  <p>Fig 3a</p> <p>Detachable ball You must seek guidance on procedure from the towbar manufacturer or supplier.</p>  <p>Fig 3b</p> <p style="text-align: center;">For other means of attachment see overpage</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Other means of attachment:

In some instances it may be possible to attach the cable assembly:

Either:

- a) to a permanent part of the towbar structure, as long as this meets the approval of the towbar manufacturer/supplier,

Or:

- b) to an accessory sold for the specific purpose of breakaway cable attachment.

Correct procedure for use:

- Regularly check the cable and clip for damage. If in doubt, contact your dealer or your service agent.
- Make sure the cable runs as straight as possible and goes through a cable guide underneath the trailer coupling.
- Determine whether or not the towbar has a designated attachment point (i.e. a part specifically designated by its manufacturer for a breakaway cable).

This is the Law

UK LAW requires that all trailers with brakes built on or after 1st October 1982 (e.g. caravans, horse boxes, flat bed car trailers etc.) are fitted with a

safety device to provide protection in the unlikely event of the separation of the main coupling while in motion. A device referred to as a "breakaway cable" fulfils this requirement and when fitted to a trailer its use is mandatory.

Trailer and/or towbar manufacturers should supply advice on the correct use of these cables. In the absence of such information, the following guidance should be noted.

When the breakaway cable is attached, check to ensure:

- a) that the cable cannot snag in use on the trailer coupling head, jockey wheel, or any accessory e.g. a stabiliser, bumper shield, cycle carrier, etc.
- b) that there is sufficient slack in the cable to allow the towing vehicle and trailer to articulate fully without the cable ever becoming taut and applying the brakes.

Note: For peace of mind you might wish to check the state of the cable by positioning the trailer and towing vehicle at extreme angles before setting off.

- c) that it is not so slack that it can drag on the ground. If left loose, the cable may scrape along the ground and be weakened so that it subsequently fails to do its job. The cable may also be caught on an obstacle when in motion thus engaging the trailer brakes prematurely.

Having followed this advice, should you feel that a satisfactory coupling arrangement cannot be achieved, consult your trailer or towbar supplier or service agent.

Purpose of a Breakaway Cable

To apply a trailer's brakes if it becomes separated from its towing vehicle. Having done this, the cable assembly is designed to part, allowing the trailer to come to a halt away from the towing vehicle.

Construction

Usually a thin steel cable, possibly plastic coated, and fitted with a means of attachment for connection to the towing vehicle.

Operation

In the event of the main coupling of the trailer separating from the towing vehicle, the cable should be able to pull tight, without any hindrance, engaging the trailer's brakes.

Note: The breakaway cable should never become taut during normal use.

THIS ADVICE DOES NOT APPLY TO UNBRAKED TRAILERS UP TO 750kg GVW which are required by law to have the use of a SECONDARY COUPLING. A secondary coupling should keep the trailer ATTACHED to its towing vehicle even if its main coupling becomes separated.

The guidance set out in this leaflet is provided for general guidance purposes only, and does not purport to be legal advice or a definitive interpretation of the law.

5. TAKING TO THE ROAD

First time caravanning is dotted with small, but pleasing delights. The first of these is the realisation that, particularly if you have heeded the large car/small caravan theory, the caravan moves easily behind you. You will notice that you quickly adjust to the extra width of the caravan, particularly if you have through vision with your outfit. If not it becomes even more important to have additional mirrors to give you the legally required view along both sides of your van. From 26 January 2010 it will be a legal requirement for all new cars first used on or after that date to have towing mirrors complying with Directives 2003/97 and 2005/27; that is, the mirrors must show the new e-mark as set out in this new legislation. Remember that turning at junctions requires more room than with a car, and keep a close look in the mirrors to avoid clipping the kerb with the caravan.

Towing a caravan requires anticipation of the changing road situation. By planning your driving, by making up your mind in advance of a situation, and by giving timely indication of your intentions to other road users, you will be recognised as a considerate driver who does not allow his presence to impede the progress of other traffic. A word here on overtaking. This is a slower business which requires both time and space: when not on a dual carriageway your time exposed to danger is much greater. Drop down a gear and wait for a healthy gap on a clear straight road before making the manoeuvre.

Reversing a caravan needs a certain amount of practice. All modern caravans are now fitted with an automatic reversing mechanism, but if yours is an old model that does not have this, then a catch on the drawbar must be operated at the hitch. In this case the job calls for an assistant. Begin with the two vehicles in a straight line, applying lock in the opposite direction to that in which you wish the caravan to go. When the caravan is inching slowly backwards, and its tail starts to swing in the desired direction, gently reverse the lock on the steering wheel until car and caravan are both tracing out a gentle curve.

This requires a light touch, as too much lock will cause the outfit to straighten out. Continue reversing and straighten the steering as necessary. If you really want plenty of practice and expert tuition, then the Club's Practical Caravanning Course or Caravan Manoeuvring Course are ideal and very good value for money.

Restarting on hills may also present problems. Remember that the overrun brakes are not working when stationary uphill because the caravan is tending to pull backwards. Chocks may be placed behind the wheels to prevent running backwards. On a very steep hill it will help the car if you allow the outfit to inch slowly backwards until the caravan is at an angle to the car. The car then has a better chance to gather up the full load of the caravan gradually, and move off. (You should not, of course, forget to retrieve the chocks from the road!)

During your first few towing trips, it is best to bear in mind the old maxim about life being a journey not a destination, and to play safe by taking your time. This does not mean you should crawl along, but merely that you should plan your journey with one or two stops en route. No driver should spend more than two hours at the wheel without a break.

The difference between solo driving and driving with a caravan is one only of emphasis but, rather like driving on the continent for the first time, it requires extra care. In general, remember that, to the driver of a solo car, the only thing worse than coming up behind one caravan is coming up behind two or three in convoy. If you catch up with a fellow caravanner, either overtake and pull away, or drop back, leaving ample room for solo motorists to pass the outfits individually.

6. MOTORWAY TOWING

It is well worth using motorways where possible to save wear and tear on yourself and the car, and to reduce the overall journey time and fuel consumption. Motorway driving requires extra alertness, and an awareness of the effects of other traffic and crosswinds on your outfit. For these reasons it is probably best to gain the feel of your outfit on ordinary roads before using a motorway.

The first point to make is that any speed limits in force are maximum speeds; settle only to that speed at which you and your outfit feel comfortable. If that is 50 mph - travel at that speed. If there is a strong wind, particularly a crosswind or tailwind, slow right down. If you are coming out of a cutting where wind can suddenly hit you, anticipate it.

Also, you are advised to **slow down as you approach the brow of a hill and before starting to go downhill**, so that the car continues to pull the caravan, rather than the caravan pushing the car. This will help to keep the outfit stable. Excessive speed downhill is a common cause of difficulties which can increase the risk of an accident.

Always know what is behind you, and watch for large approaching vehicles, such as coaches, container lorries etc, as they create considerable bow waves. This is so that you move as far away from their turbulence as possible, before they reach the rear of your caravan. It is this potential sideways force that can set the caravan swinging, and swinging can build up to become snaking. But if swinging does start do **NOT** brake except, if essential, by gentle intermittent braking, which should prevent the wheels locking up. If your wheels lock, it could be very difficult indeed to regain control of the outfit. Do not believe those who advise you to accelerate out of swinging. The faster you go, the more difficult it is to regain control. Sit it out. This means keeping control of the steering and letting the unwanted movement damp itself out. As with driving on ice, the only solution is to get back to a steady state by minimum reaction. No over-correction of the steering; foot gently off the accelerator; preferably no touching of the brake.

7. REVERSING

Reversing an outfit successfully is an acquired knack: lack of the knack is perhaps the major concern of many a caravanner who has not had the benefit of being taught the principles and then practised under instruction – a major element of The Club's Practical Caravanning and Caravan Manoeuvring Courses.

Explaining a skill in words is seldom easy, which is why the Courses are held. The Club produces *Towing the Line – A Guide to Getting Started* which gives basic instruction on manoeuvring. The notes which follow summarise the Course instruction, but it is stressed the essential ingredient is practise from which you will

get the feel of your outfit and how it reacts when you reverse – which you will most certainly have to do at some time.

First practise the straight line reverse. Mastery of this is fundamental to other manoeuvres in reverse. Start by drawing forward until car and caravan are in a straight line. Look in your external mirrors: the images of each side (wall) of the caravan should be equal. If necessary adjust the mirrors so you have a balanced view. **Now**, begin to reverse very slowly – all movement in reverse is best done slowly so the caravan does not turn quickly, for if it does, it is more difficult to correct any unwanted sideways movement. As you move backwards the caravan **will** begin to turn. Keep looking at the mirrors. In one you will see the image of the caravan beginning to fill the mirror and disappear from the other. Now steer towards the filling mirror, i.e. right hand down if the image is on the offside and vice versa if on the nearside. As you turn the steering wheel so the image in the filling mirror will begin to reduce. Look in the other mirror and chances are the other wall will begin to fill the other mirror: to correct, steer towards the filling mirror.

Of course, if you start to adjust the car's steering before the caravan starts filling the other mirror, you will counteract the caravan's movement and hence keep reversing in a straight line rather than on a zig-zag course. The trick, if there is one, is to make the corrections to the steering **before** the angle of the caravan becomes too acute and causes a jack-knife situation – not good for drawbar, car, caravan or good humour!

So, the straight line reverse is a series of small corrections at the steering wheel to counteract the caravan's inherent tendency to go off line when reversing. Small corrections, in good time, will reduce the zig-zag effect and mean you need less room for manoeuvring. Practise this in an open area, ideally with a marker line or markers to help you keep your bearings and prove your newly acquired confidence. It is a good idea to have an assistant watching – to ensure you do not reverse into an object rather than to try to give instructions other than **STOP!** Words such as left and right can be very confusing and may not even be correct! However, never feel embarrassed by having to pull forward and straighten out the alignment of the caravan if it has not performed as you wish first time – better to do this rather than cause damage in a jack-knife situation.

So, you have decided to turn the caravan into a **nearside opening**. Start reversing slowly and turn the steering wheel to the offside: this will make the caravan turn to the nearside. As soon as you see the caravan beginning to pivot into the desired opening, change the steering to the nearside so the car begins to follow the caravan on the same turning arc, now apply the straight line reversing principle. To straighten out the arc, turn the steering wheel more to the nearside, or if you need to make a tighter turn **reduce** the amount of nearside lock. When you want to straighten the whole outfit having reversed round the corner, simply apply the straight line reversing technique to straighten out the outfit whilst still reversing. If at any time during a reversing manoeuvre there is a risk of a jack-knife, or the rear of the caravan touching an object, **STOP**, pull forward a little and if you straighten the steering the caravan will follow. Reversing into an **offside space** is the same technique except first steer to the nearside to start the arc and then proceed as above, using the alternative lock, of course.

The adjustment of external mirrors to see what is happening on a curved reverse is a matter of preference. Some people like to be able to see the caravan wheels so corrections can be made more precisely as when reversing into a side road and using the kerb as a marker. Others like to see the rear end of the caravan so when reversing into a gateway the risk of hitting the gatepost is reduced. With electronic mirror control perhaps one can do both!

8. CONCLUSION

Caravanning on the road is the means to an end. That end is happy recreation and the ability to relax away from it all on beautiful sites and Certificated Locations up and down the British Isles and, eventually perhaps, with experience behind you, on the Continent. Towing a caravan is easily done and, with only a little experience and following these brief guidelines, should be a completely safe venture. A well matched outfit, properly loaded, will go almost anywhere the solo car can. **'Be Prepared'**, and also **'Hasten Slowly'**, should be your guidelines.

Definitions of Terms Used

The Caravan

Ex Works Weight
(Unladen Weight)

The weight of the caravan as new with standard fixtures and fittings as stated by the caravan manufacturer. (NB: Because of the differences in the weight of materials supplied for construction of caravans, and moisture retention, variations of $\pm 5\%$ of the manufacturer's figure can be expected, usually "+").

Actual Laden Weight
(ALW)

The total weight of the caravan and its contents when being towed.

Maximum Authorised Weight
(MAW)
(Maximum Gross Weight)

The maximum weight for which the caravan is designed for normal use when being towed on a road laden and this must never be exceeded.

Maximum Technically Permissible Laden Mass
(MTPLM)

As stated by the vehicle manufacturer. This mass takes into account specific operating conditions including factors such as the strength of materials, loading capacity of the tyres etc.

Mass in Running Order
(MIRO)

Mass of the caravan equipped to the manufacturer's standard specification.

User Payload

The difference between the Maximum Technically Permissible Laden Mass and the Mass in Running Order. For most existing caravans payload includes essential habitation equipment, personal effects and optional equipment. It is anticipated that Essential Habitation Equipment will soon be moved from being part of user payload to being part of the MIRO. Check the specification details for new caravans carefully.

Essential Habitation Equipment (EHE)

Those items and fluids required for the safe and proper functioning of the equipment for habitation as defined by the manufacturer of the caravan.

Personal Effects

Those items which a user can choose to carry in a caravan and which are not included as essential habitation equipment or optional equipment.

Optional Equipment

Items made available by the manufacturer over and above the standard specification for the caravan.

Noseweight

Static vertical load. That part of the weight of the caravan supported by the rear of the towing vehicle..

Definitions of Terms Used contd

The Towing Vehicle

Kerb Weight

There are two definitions for towing vehicle kerbweight. These are:

1. As defined in the Road Vehicle Construction and Use Regulations 1986:

The weight of the towing vehicle as it leaves the manufacturer with a full tank of fuel, adequate fluids for normal operation (lubricants, oils, water etc) and its standard set of tools and equipment. It does not include the weight of the driver, occupants or load.

2. As defined by EU Directive 95/48/EC (issued in September 1995):

The weight of the vehicle as it leaves the manufacturer with its fuel tank 90% full, all the necessary fluids for normal operation (lubricants, oils, water etc), a nominal driver weight of 68kg and 7kg of luggage.

Vehicle manufacturers will tend to use the second definition in official documentation, since this is the one required by the regulations they have to meet to sell the vehicle Europe-wide. In publicity material and handbooks, however, either definition may be found, although the first one is expected to gradually disappear.

Towing Limit (braked trailer)

A statement by the manufacturer giving the maximum weight of braked trailer the car will tow, when restarting on a gradient of, usually, 1 in 8.

Gross Vehicle Weight (GVW)

The weight of the vehicle laden to its maximum, as defined by the vehicle manufacturer.

Gross Train Weight (GTW)

Often the Gross Vehicle Weight plus the Towing Limit, but check the vehicle handbook.

VIN Plate / MTPLM

Only applicable to post-August 1998 vehicles

This calculation is based on the Gross Train Weight of your vehicle. If the Gross Vehicle Weight plus the MAW/MTPLM of your caravan exceeds the Gross Train Weight shown on the VIN Plate of your car, you could be breaking the law. The Gross Train Weight of a vehicle should be the Gross Vehicle Weight plus the vehicle's maximum towing weight. However, some manufacturers have set their Gross Train Weights below that figure and this will restrict the towing limit of these vehicles.

Outfit Weight Ratio

The Actual Laden Weight expressed as a percentage of the Kerb Weight, ie: $\frac{ALW}{KW} \times 100$

Conversion

Kilograms divided by 50.8 = cwt
Kilograms multiplied by 2.2046 =lb

© The Caravan Club 2008

