

CHOICE OF TRAILER CARAVAN

This leaflet is prepared as a Club service. The contents are believed correct at the date of publication but please raise any queries with the Club's Information office.

January 2009

At first sight the choice available to the buyer of a trailer caravan is so enormous that it can be very confusing. Whilst nobody other than yourself can make the final choice, there are some general considerations to be borne in mind, and these will help with the task of sorting out your specific requirements.

We suggest below a checklist to follow, to ensure no important factors are overlooked. It will be noted that there are many aspects to cover before getting to the final shape and layout. For definitions of terms used please refer to pages 9 and 10.

1. What will my car tow?

It is vital to establish this fact before anything else. Reaching your destination safely with your family relaxed and in one piece must be preferable to delays and mishaps caused by towing an unsuitable caravan, generally one that is too heavy.

Nearly all car manufacturers state a maximum permissible trailer weight that each model may tow. This is a measure of pulling power and is generally what the car can pull up a 1 in 8 slope at sea level, obviously in first gear. It is emphatically *not* a guide to outfit stability and safety at speed.

There is no legal weight ratio requirement (except for those who first passed their test after 1 January 1997 – ask for The Club's information leaflet, 'drivers licences in a nutshell!') but the law does require that caravans, their towing vehicles and the loads they carry must be in such condition that no danger or nuisance is caused to other road users. All caravan outfits are permitted to travel at up to 50 mph on single carriageways and 60 mph on dual carriageways and motorways, providing a lower limit does not apply. Notwithstanding the lack of legal conditions, the Club suggests the following guidelines:

1. The lower the laden weight of a trailer caravan when towed on the public highway, the safer the outfit
2. In any case, the laden weight of the caravan should never exceed the kerbside weight of the towing vehicle.
3. The nearer the caravan laden weight approaches the one-to-one ratio, the more careful the driver must be.

The lower the percentage ratio between the car and caravan the better, so there is always an adequate reserve of power for overtaking and hill climbing and a sufficient weight margin for safety and extreme conditions, particularly on fast roads such as motorways. The Club recommends that 85% is the **maximum** ratio which should be attempted by novice caravanners and those with less powerful tow cars, and is also advisable for experienced towers wanting to travel at the maximum permitted speed limit on dual carriageways/motorways.

Also important is the weight the laden caravan will place on the car's towball - the noseweight. Most car manufacturers state a maximum permitted noseweight. As a guide, the optimum caravan noseweight is generally 7% of its laden weight (subject to the caravan's hitch limit), so before buying a caravan, check that this figure is not in excess of your car's limit. With modern cars, there is rarely a problem with vehicle suspension, but in the case of some older vehicles, even with compatible noseweights, the rear end of the car may sag. This may not only cause outfit instability but also require re-setting of headlamps if night driving is to be undertaken. Cars that do not already have variable level suspension and have soft rear springing may therefore need heavier duty springs or other rear suspension aids (ask for The Club's leaflet on the subject).

2. What type of caravan?

Unlike very old trailer caravans which had a boxy square-edged shape and hence increased the car's fuel consumption considerably, modern caravans are streamlined which helps fuel consumption by improving the aerodynamics of the caravan. This also assists outfit stability. For this reason, a folding caravan is also an attractive consideration. Modern versions of folders can be very quickly erected on arrival at a site, with the cooker etc (and even full length cupboards) being hinged up into position, but the main drawback is that fewer top lockers can be provided and generally there is less storage space. However, as fuel becomes more expensive, the economics of towing a folding caravan may become even more attractive, with its safer handling and a travelling height on average 6" below that of the towing car.

3. What length caravan?

Length and weight are partly inter-related but the old rule of thumb - each foot (0.3m) of body length equals 1 cwt (50.8kg), giving a weight of 15 cwt (762kg) to a body length of 15 ft (4.6m) - rarely applies with today's higher specification, aerodynamically shaped, models.

All modern rigid trailer caravans today have a toilet room, only the very smallest (mostly foreign) models not having the necessary space to include one. If you are only going to be on sites where permanent toilets are provided, the caravan's toilet room is less important, but if you will be staying on sites such as Caravan Club Certificated Locations, then the Caravan Code requires you to have your own sanitary arrangements.

As a general rule it pays to tow the shortest, lightest caravan that suits your needs. Greater living space can be obtained by choosing a 13 ft (4m) van with an awning rather than a 17 ft (5m) caravan alone, and the overall cost will be considerably less too. In Britain an awning may be necessary anyway as an 'umbrella' for storing wet weather clobber, and in hot countries as a sunshade under which you can sit and have meals.

Other good reasons for not towing too long a trailer are the difficulties that can be encountered with a long caravan when turning sharp angles into gateways or drives and the fact that it will be more difficult to man-handle on site. The maximum body length of caravan that may be towed on British roads by a motor car (vehicle with a Gross Vehicle Weight of 3,500kg or more) is 7 metres (22 ft 11½ in). The maximum width is 2.3 metres (7 ft 6½ in). If touring abroad, the length of caravan will also affect ferry charges, which is another important point, and some countries such as Switzerland have length and width restrictions because of their mountainous roads. Finally, a long caravan may be difficult to park, whether en route or at home, and to store.

4. Single Axle or Twin

Only the largest caravans need two axles, and therefore four tyres, to bear their fully laden weight. Suspension, wheel and tyre design generally ensures that most caravans are very adequately supported by one axle. Some manufacturers supply caravan bodies fitted with either a single or twin axle, to give the buyer choice. So which is best?

Briefly, in theory two tyres on each side of the caravan give better grip than one and therefore should give better stability through resistance to side wind pressure, but this does depend on the tyre specification. Static and unhitched, however, the twin axle caravan does not necessarily stand level, and may indeed have a heavier noseweight than that of a single axle.

The single axle scores heavily when it comes to manoeuvring on site, with the twin's on-road benefit of extra grip becoming a liability when you have to swing the caravan to be able to hitch up. Unless you are an expert in reversing your outfit for spot-on pitching and also 100% accurate at backing up to re-connect, stick to a single axle, and spare the heaving!

Finally, an extra axle adds initial cost and weight, doubles tyre replacement costs in due course, and requires greater care and maintenance to achieve braking balance.

5. How much can I load in it?

When choosing a caravan, look carefully at the payload allowance, and bear in mind that with older, (prior to the mid 1990's), caravans the quoted ex-works weight has a permitted 5% tolerance (officially plus or minus, but in practice usually plus!).

From 1999 model year, new caravans are built to a European Standard, and the manufacturer will state in the user's handbook the following information including the definitions where appropriate:

- (a) the maximum technically permissible laden mass (MTPLM) - previously known as maximum authorised weight (MAW) - in kilograms
- (b) the mass in running order (MIRO) – previously known as ex-works weight – in kilograms
- (c) the maximum user payload - (a) minus (b) - in kilograms
- (d) the mass of the essential habitation equipment for the caravan - in kilograms.

The manufacturer shall indicate clearly that the payload includes:

- (a) essential habitation equipment (see (d) above)
- (b) optional equipment
- (c) personal effects.

To give a rough guide as to how little might be available for such items as crockery, utensils and clothing, some average weights of customary requirements (cassette toilets and spare wheels may be included in the quoted ex-works weight, or may be part of a "special package" which will reduce the quoted payload) are listed below.

Typical item	Weight		Typical item	Weight	
	KG	LBS*		KG	LBS
Full awning and poles	40.0	90	Heavy duty hitch lock	6.0	13
Porch awning and poles	20.0	45	Heavy duty wheel clamp	15.0	33
Jack and winding handle	2.5	5	Continental adaptor	0.3	1
60 Ampere/hour battery	16.5	36	2 x 7kg LPG cylinders	30.0	66
Spare wheel and tyre	14.0	31	Porta-Potti (empty)	5.0	11
Noseweight gauge	1.0	2	Water - per litre	1.0	2
10" portable television	8.0	18	Torque wrench	1.2	3
Portable radio/cassette	2.0	4	Set cooking pans	2.0	4
Omni-directional antenna	1.0	2	Sunlounger (metal frame)	5.0	11
Rollalong water carrier	3.2	7	Folding chair alloy/steel	1.5/3	3/7
Waste water container	1.4	3	Picnic table	6.0	13
Fire extinguisher	1.5	3	Wood levelling ramp	4.0	9
Metal step	3.0	7	Plates, cutlery (p/person)	1.0	2
Mains extension lead	3.5	8	Microwave	13.0	29
Motorised caravan mover	30.0	68			

*lbs are approximate (to convert kg to lb, multiply by 2.2)

Note: It is not recommended to travel with water container or toilet full

It is very easy to accidentally exceed the MTPLM or MAW of a caravan, and not only is this an offence, but you may also cause premature tyre failure and damage other undergear components. The amount of payload offered with a caravan is therefore an important consideration.

(The Caravan Club recommends that you take your laden caravan to a weighbridge to ensure you are not exceeding the MTPLM/MAW - and check as often as required)

6. How long will it last?

This is very difficult to estimate and because of the pounding it receives from travelling, a touring caravan is obviously much shorter lived than other more permanent dwellings. Certainly one should expect at least 10 years, provided that it is cared for and regularly checked.

Whether you acquire a new or second hand caravan it is *essential* to check the body annually, to ensure that it remains waterproof. Once damp gets into the structure you will soon have a useless wreck on your hands that may not be economic to repair. Do not buy a used caravan without having it checked with a moisture meter, which will warn of any problems (see the Club's leaflet on buying a used caravan). Ideally, get an independent pre-purchase inspection carried out by a competent person. The Club's technical/information department has a list of Members of the Institute of Automotive Engineer Assessors and would be pleased to advise members of a company in their area, if possible, which may be prepared (for a fee) to carry out an inspection. Alternatively, logon to www.iaea-online.org for details.

The Club strongly recommends an annual service by a caravan workshop, which should include a damp check – logon to www.nationalcaravan.co.uk/home/index.asp?id=1&nid=24 for a nationwide list or alternatively telephone the technical/information department for information.

What layout is best?

Up to this point, advice has been applicable to all potential buyers, but from here the personal needs of the buyer will vary greatly. The first requirement is to establish how many berths are normally needed, remembering that adults as well as children can sleep outside under an awning. On the other hand, many couples regret changing from a 4 berth to a 2 berth when their children grow up, as it is not long before grandchildren want to be taken too! Use a tape measure to be certain each berth is long enough. 5/6 berth caravans may have only two berths long enough for adults. Cushion depth, when in use as a mattress, is also important if you want a good night's sleep, and the way that the sometimes varied small pieces fit together can make or mar a night's rest. Don't be afraid to test any bed for length or comfort.

With children, in a 4 berth it is useful to have two dinettes (facing seats with table in between which lowers to make a bed base) as there can then be both eating and play areas, and at night one end, screened off, becomes the children's bedroom. This layout results in a centre kitchen, which is good for caravan balance on the road as most of the weight, fixed and portable, is carried over or near the axle. An end kitchen at the rear does not necessarily mean balance is worse, but forethought by the designer and careful loading by the user, with particular attention to noseweight, is more necessary. (Too much weight at the extremity of the trailer can increase the pendulum effect if tail-wag starts.) If there is not a double dinette, consider carefully the night time routines of children reaching the toilet room from their berths and not having lights shining on their faces when asleep.

Consider the location of the working area where food is prepared and cooked. Are the worktop and sink at a comfortable height? Can people get past the cook easily without bumping into him/her? Do cupboard and toilet room doors open without interfering with cooking? Is the doorway completely clear all the time for rapid exit in case of fire? Is there adequate ventilation near the cooker?

Headroom throughout the length of the van can also cause discomfort if it is insufficient for a tall person. A few offer only 6 ft (1.8m) or less. It is important to ensure that the internal height at the sloping front of the caravan does not affect easy access to the front dinette, so check to be certain. The ease of getting into the seats around the table should also be tested. The toilet compartment will be at the side or end where the roof may slope downwards and

sufficient height here, for showering or shaving, is important; the same applies to the cassette toilet. Quite often, with centre kitchens, the toilet is opposite, where there is a wheel arch: is it in the way? Is the light near the mirror, or as is sometimes the case, behind your head as you shave/make up?

What storage space is there? Do you have to stoop down to get at food or crockery? Is there a shelf deep enough to take a large packet of breakfast cereal? Is the wardrobe wide and deep enough? Are there enough drawers? Do all cupboard and drawer catches really hold shut when travelling?

What sort of floor covering do you need? Deep pile carpets, or vinyl flooring when you come in with wet, muddy boots? Many modern caravans have removable carpeting, so you can have the best of both worlds!

8. What can I afford?

Whether you seek a new or used caravan do remember, if you are new to caravanning, that there are many essential extras that you will need to get you on the road and onto a site. As well as the items listed on page 4 you may need a groundsheet. Buy one that allows the grass to “breathe” – see separate information leaflet ‘All About Awnings’. Don’t forget also a folding table and chairs (for use outside) and these, along with other “necessities”, could add hundreds of pounds to the cost of the caravan itself.

Also, of course, a towing bracket for the car (tested to BS AU 114 : 1979, or its International equivalent, ISO 3853 : 1977), and the necessary wiring and sockets to connect to the caravan, extra mirrors, possibly rear suspension aids and/or a stabiliser - none of them cheap.

Note that from 1 August 1998 all new cars first registered from that date must only be fitted with a towing bracket that has been given a European Standard Type Approval number and this must be marked on the bracket. Details of the design requirements are contained in European Directive 94/20, available from The Stationery Office..

If you are buying new, decide whether you need all the items included in the top of the range specification. Will the cook really need a full oven when away on 'holiday'? Very adequate, easily prepared meals are possible with hob and grill, or a microwave oven (ask for the information leaflet on the subject).

Do you really need a shower, hot water, extra batteries etc. - items which require lifting, filling and charging - perhaps yes, but it is all additional weight and cost and is perhaps not necessary if you will always use full-facility sites with electric hook-ups.

If you are buying used and have not caravanned before, try and take a knowledgeable friend with you, whether to a dealer or a private seller. Remember that in law you have more redress with a dealer than from a private vendor. In both cases the old saying 'caveat emptor' (buyer beware) applies.

Ask to take the caravan for a trial run. Note its behaviour on the road, in particular that the overrun brakes work smoothly. Ensure it is level, viewed from the front when halted and check that the handbrake works effectively. Check the underneath for corrosion, the condition of springs/dampers (where fitted) and brake linkages. The tyre treads may look

fine, but how old are the tyres? Five years is probably the maximum safe life, whatever the mileage. Sidewalls of tyres generally go before the treads are worn on caravans; check for cracks in the grooves as well as sidewalls. Are the tyres the right size for the wheel rims? Are they in fact a pair? Are they suitable for the maximum weight of the caravan and the maximum speed travelled (remember higher speeds are permissible abroad)? Lower the corner steadies to ensure these lower easily, are well maintained and not bent through misuse.

In the body itself damp from outside has already been mentioned. Look under the sink and by any pump to ensure no joints have leaked onto the shelving. Inspect all the mattresses and cushions, particularly underneath, for damp and staining. Ensure the bed locker lids still support weight, and that the tables stand firm when in position. Check the operation of all gas equipment, even if you have to take an LPG cylinder with you. If mains electricity is installed, ask to see the latest inspection certificate by a qualified electrical engineer: it should be inspected at regular intervals – annually if the caravan covers high mileages.

9. The price to pay

If you can afford a new caravan, and particularly if you are not trading in an old one, the price may be "negotiable", particularly in times of recession when the dealer wants money in his till, not caravans in his showroom/yard.

For secondhand caravans the buyer may decide to offer less than the vendor suggests, but it can be difficult to establish the going rate for a particular caravan, as so many variables are involved, such as condition, extras fitted etc. As you are unlikely to be able to consult the trade's used price guide, the best advice is to look at the classified ads. in caravan magazines to establish guidelines for the model you have in mind.

Establishing the true age of a caravan can be difficult and many buyers have been sold caravans with the age understated by the vendor by two, three and even more years, to obtain a higher price. Locate the chassis number and contact the caravan or chassis manufacturer for its construction date. If the chassis number is missing, be suspicious. Since 1992 caravans built by National Caravan Council members and some imports have car-like registration documents; it is now also possible to register pre-1992 caravans under the same scheme. Be sure all registration documents are in order.

10. Where to buy?

If at all possible, buy from a local dealer. It is amazing how many miles you can clock up if you buy in, say, Gloucestershire and live in Lincoln, and have to return a caravan for attention then go back to collect it and find yet another trip necessary because it is not ready, or the work is not done to your satisfaction (this does happen). Importers of caravans from the Continent, unless a well established UK official importer, tend to come and go so you may be left on your own with a foreign make (note, incidentally, that foreign caravans, like cars, may be more expensive to insure). Make sure such a caravan has been adapted to UK Construction and Use Regulations, and also to UK electrical, LPG and road lighting requirements.

11. The Handbook

Whether the caravan is new or used, insist on having the Users Handbook. Since British Standard 4626 was published in 1970 it has been a requirement that a handbook must be provided covering caravan type, dimensions, weights, data on wheels and tyres, general operating instructions and safety precautions. If a used caravan does not have one, write to the manufacturer for another. The many devices now fitted in caravans must be fully understood, carefully operated and maintained. If buying new, ask to see the handbook before you purchase, which must be supplied. From 1999 model year BS 4626 has been replaced with BS EN 1645, which defines the health and safety requirements for the design of the caravan, and which has added further requirements to the useful information which must be included in the handbook.

13. Final advice

You will part with a lot of money when you buy a caravan, and to be certain you obtain your money's worth, and exactly what you require, take time in making a decision. Time spent in looking is never wasted.

14. Test Reports

Members who have access to The Caravan Club website can download a test report (if available) by going into The Club website at www.caravanclub.co.uk and following the links as follows:

- News and Events.
- Magazine.
- Archived Magazines.
- You will at this point need to login with your membership details.
- Enter relevant dates, as indicated.
- Click into 'Caravan Tests' then click on 'Search'. This will bring up Magazine issues containing the requested tests, if available.

If you do not have this facility, Club members are welcome to write in (with stamped addressed envelope) to see if we have tested a particular make/model in the past and, if we have, a photocopy of the report will be sent by return.

15. The Website

This leaflet is one of about fifty technical information leaflets which can be downloaded from The Club's Website at www.caravanclub.co.uk.

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

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

*Maximum Authorised Weight
(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*

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

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. Payload includes essential habitation equipment, personal effects and optional equipment.

*Essential Habitation
Equipment*

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..

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

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

Gross Train Weight

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

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 = lbs