

A
MUST-
READ FOR
AVID CAMPERSgo!
Drive & Camp

CAMP GUIDE 2017

A comprehensive guide for campers, caravanners and off-road trailer owners



FROM YOUR HOME TO THE CAMPSITE



WEIGHT SPECS Tare, GVM and GCM



TOW safely and **CAMP** carefree



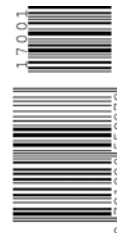
SERVICE and fix your own caravan



HOW TO get the correct driver's licence



HOW IT WORKS From engines to surge brakes



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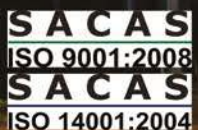
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Keep it handy

When we published the *WegSleep Kampgids* for the first time in 2012, we knew it would hit the spot with campers and caravanners. It sold like hot cakes and it even won us a prestigious Pica award. It was a no-brainer then to also make it available in English a short while later.

Last year we published a revised version of the *Kampgids*, and again it proved to be very popular. And with the recent launch of *go! Drive & Camp*, we thought it would only be fitting to once again give our English readers this handy and reworked guide to camping and caravanning.

The lion's share of the information you hold in your hands is new and updated. We're also focussing on some caravanning issues that has been in the spotlight recently – like which driver's licence you need to legally tow your Penta and the confusion and uncertainty over tare, GVM, GCM, and how much you're allowed to load in your caravan.

But please don't see this as a rule book. It is also nothing like your maths text book in school. This is a practical and easy-to-read guide for you to use as a reference to

make your camping experience safer and even more magical.

By the time you're through reading it, you will know all there is to know about the towing capabilities of petrol and diesel engines, how to service and maintain your caravan and what you need to pack in case of emergencies. You will definitely also be up to speed with all of the applicable rules and regulations of the road while you're towing.

The great part is that you don't have to memorise all the information. Keep this guide in your cubby hole or somewhere in your caravan and take it out when you can't remember exactly how to go about servicing your caravan's brakes or which colour wire is the right one for the left indicator. Or just give it a read when you're relaxing under your rally tent.

Safe travels.

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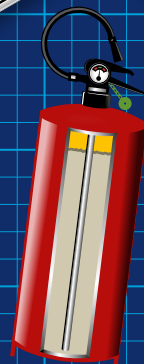
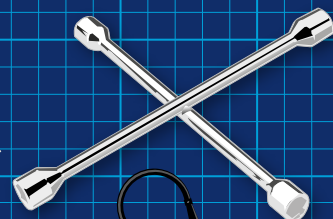
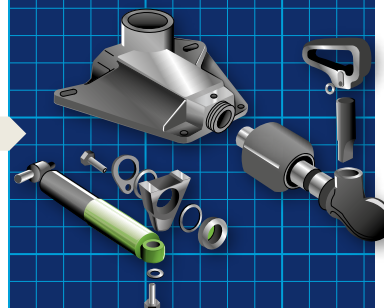
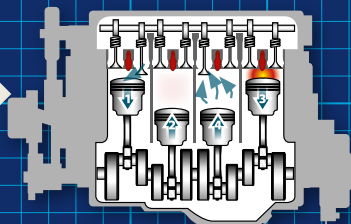
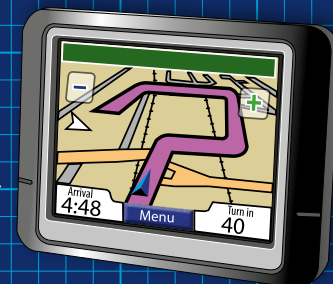
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The paperwork

As with everything in life, camping requires some admin that you need to get done before starting on your journey. Fortunately, it's not higher grade stuff – but if you skimp on it, you may run into problems.



1 A WEIGHTY MATTER

Get these basic concepts down pat for a safer start to your journey.

Tare. The mass of a vehicle without cargo (the weight licence fees are based on).

GVM. The gross vehicle mass is the maximum that a vehicle may weigh – including its load, fuel, passengers and anything else that it transports. You'll usually find the GVM indicated on a plate on the A-frame of your caravan or trailer.

GCM. The gross combination mass is the sum of the weight of the vehicle and whatever it is towing – that is, the legal combined mass.

Vehicle and caravan weight. Legally, the GVM of your trailer or caravan may not exceed the tare of your towing vehicle. Experts recommend a minimum difference of 20% less.

Axle mass. On the same plate on which you find the towing vehicle's tare and GVM, you'll also see "GA front" and "GA rear". This indicates to the gross axle mass of the front and rear axles. Distribute the load in such a way that the axles won't be overloaded.

WHAT IS THE COMBINED WEIGHT OF YOUR TOWING VEHICLE AND YOUR CARAVAN OR TRAILER?

The combined weight of the two vehicles may not exceed the towing vehicle's GCM. (You will also find this on the towing vehicle's mass plate.)

Suppose you're driving a Toyota Land Cruiser 79 bakkie with a 4,0 l-petrol engine and you want to tow a Jurgens Exclusive: According to Toyota SA's website, the tare of the bakkie is 2 055kg – so you can legally tow the Exclusive (with a GVM of 1 800 kg) with

it. If you load the Cruiser to its permissible GVM of 3 200 kg and the caravan to its maximum too, the two will have a combined mass of 5 000 kg.

The Cruiser's permissible GCM is however only 4 700 kg. Although the two vehicles aren't individually overloaded, they nevertheless do exceed the bakkie's GCM with 300 kg and the combination is therefore illegal.

$$\begin{array}{c} \text{1 800 kg} \end{array} + \begin{array}{c} \text{3 200 kg} \end{array} = 5\,000\text{ kg}$$

LOAD LIMITATIONS

To determine how much you can load into and onto a vehicle, simply subtract the tare from the GVM. For example: 3 200 kg (GVM) minus 2 200 kg (tare) equals 1 000 kg (allowed load). Remember that the load includes yourself, passengers and things like the spare wheel, toolbox and fuel. If you

weigh 80 kg, your spouse 60 kg, your kids 30 kg each, the dog 5 kg, a spare wheel and toolbox each 5kg and a full tank 85 kg (a total of 330 kg), the calculation would be: 1 ton permissible load minus 330 kg equalling 670 kg. If your luggage weighs more than 670 kg, the vehicle will be overloaded.

$$\begin{array}{c} \text{2 270 kg} \end{array} - \left(\begin{array}{c} \text{Icons: Person, Person, Person, Dog, Wheel, Toolbox, Fuel} \end{array} \right) = 670\text{ kg}$$



STEP-BY-STEP TO A LICENCE

Write your 'learners'. The first step to obtaining a Code EB driver's licence (the one that allows you to tow), is to qualify for an EB learner's licence. This test is identical to the one you had to pass for your Code B driver's licence. You must pass the test again, even if you already have a Code B driver's licence.

Big red L... While towing a trailer as a learner driver, you must be accompanied in the vehicle by a person who is in possession of a valid licence to tow. You should also affix an L sticker to the back of the trailer.

Practice makes perfect. Once you've qualified for your learner's licence, you can make an appointment at the traffic office. You may even go to practice in their yard. There are time slots reserved for this.

Test time. A towing test will typically be completed in less than an hour. The yard test lasts about 20 minutes and the road test less than half an hour. Invest in a set of those round blind-spot mirrors and stick them to your extension mirrors. They don't cost much, but help a lot during the test.

Who's in and who's out? The GCM (gross combination mass) of the towing vehicle for this test may not exceed 3500 kg, while the GVM (gross vehicle mass) of the trailer must be more than 750 kg. The trailer used during the test is not required to contain a load.

It's who you know... Complete the test with a towing vehicle and trailer that you are familiar with. Don't be fooled into thinking that a small car towing a small trailer will make the test easier. Keep in mind that the closer the trailer's wheels are to those of the car, the sharper the turning angle of the trailer will be when you reverse. Given the choice between a road caravan and an off-road caravan, choose the latter. They're narrower, simplifying things when you are instructed to reverse into a tight space. >

TRAIN OF THOUGHT

It isn't illegal to hitch a trailer behind your caravan. The transport act was however phrased to make provision for trucks and tractors towing more than just one trailer. When taking into account the regulations regarding driver's licences, the gross combination mass and the brake system of the entire towing combination, it becomes technically quite problematic to legally drive your own little holiday "train".

If you want to tow a Jurgens Penta and a Venter trailer, for instance, the requirement that apply are as follows:

Towing vehicle The tare of the towing vehicle must be more than 2 tons. (A Land Cruiser qualifies, but not the Nissan Champ that you inherited from your uncle.)

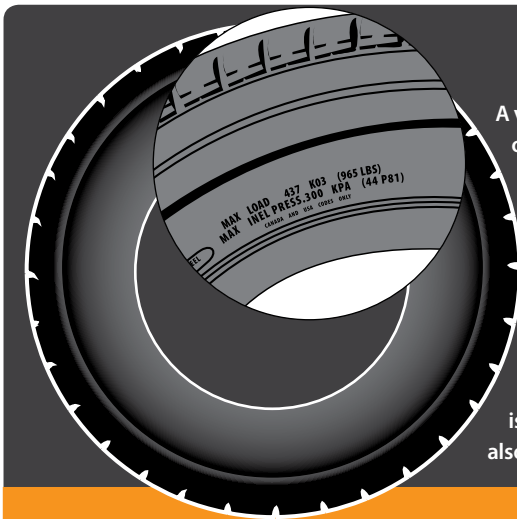
Driver's licence You need to have an EC1 driver's licence (or a Code 14 licence, which was issued prior to 1998.)

Trailer Even the trailer towed behind the caravan will have to be fitted with special brakes.



TYRE LOAD INDEX

A vehicle's tyres can also be overloaded. On the sidewall of a tyre, you'll find a written description indicating the maximum load rating of this particular tyre. If the maximum load capacity of a tyre is multiplied by the amount of tyres and the vehicle outweighs this total, it is not only a traffic violation, but also extremely unsafe.



2 DRIVER'S LICENCE, PLEASE...

If your driver's licence harkens back to a time when it still had pride of place in your ID book, you're allowed to tow a caravan without any additional paperwork – your old Code 08 driver's licence was converted to an EB driver's licence.

And if you obtained your licence after 1998 (when the newer card system was implemented) and you tow nothing bigger than a small luggage trailer on the

open road, or use it to get rid of garden refuse, you can also relax. The Code B driver's license is quite sufficient.

However, if you currently only have a Code B driver's licence and you want to tow a caravan or off-road trailer, actually, anything with a gross vehicle mass (GVM) exceeding 750 kg, you should make an appointment at the traffic department and get the right licence to tow.

Slowly does it... The full yard test must be completed within 20 minutes. That is the combined stopwatch time of each of the six items being tested. The road test is done outside the test site and it must last longer than 20 minutes, but less than 45 minutes.

Belt free. You may drive the vehicle without your safety belt during the yard test.

Mix and match. The yard test items can be done in any sequence, and it depends on the test centre.

Drive accident-free. If you cause an accident during the road test or are involved in one that could have been avoided, you've

blown it. If the collision was unavoidable and the vehicle is still roadworthy, you'll be allowed to continue the test.

THE YARD TEST

Pre-trip inspection. Before getting into a vehicle, you have to perform an inspection to make sure your towing vehicle is roadworthy. Should anything be amiss – for instance bald tyres or broken signal lights – the test official will regard your vehicle as unroadworthy and will stop the test immediately.

Apart from the inspection on your towing vehicle, you will need to check your caravan as well. This involves checking that the jockey wheel is raised and in place, that the

manual brake is released, that the wheels and lights are in order and that the corner steadies are completely raised and secure.

Parallel parking. For this exercise, you will be required to unhitch the caravan and park the towing vehicle parallel to the left and to the right. Once you have passed these tests, you may commence the next assessment.

THE ROAD TEST

Keep in mind that although it is always safer to drive courteously and carefully, you may lose points for driving too slowly for the surrounding traffic. The test drive must include the following scenarios:

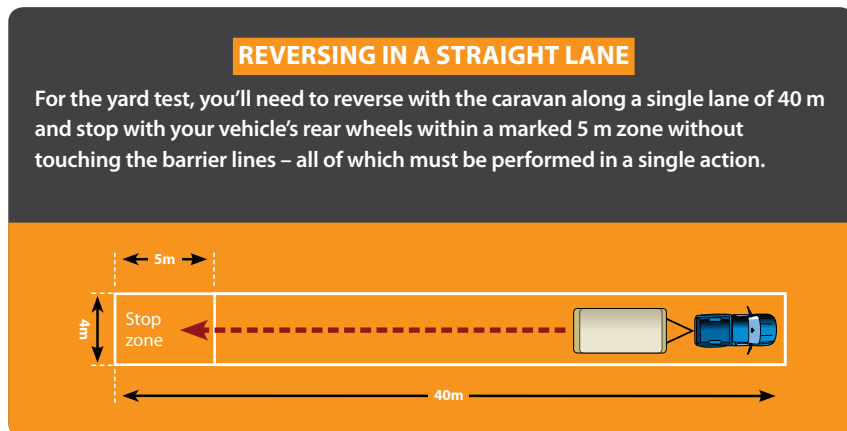
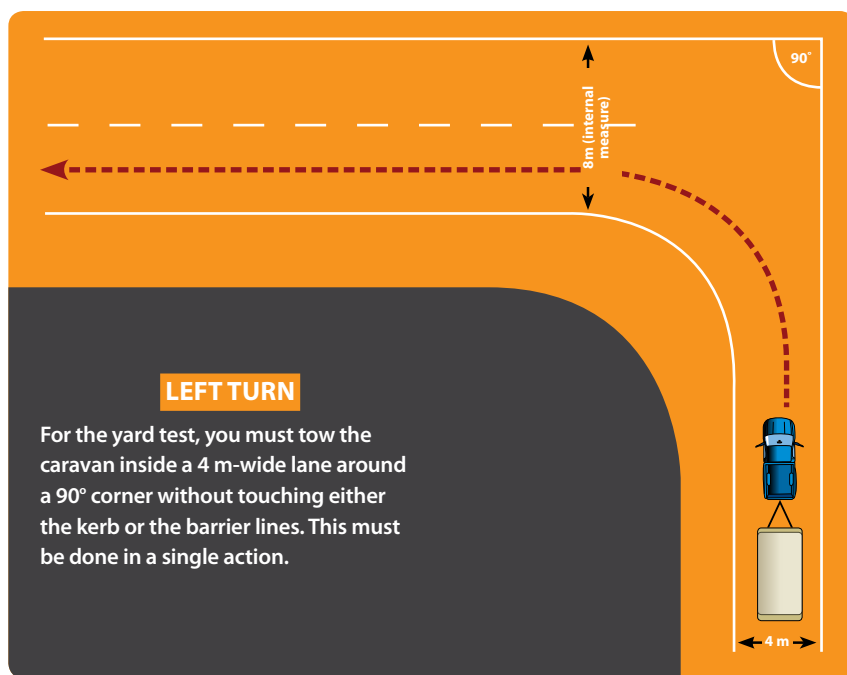
- A part of the route must consist of at least two lanes where you'll be required to change lanes.
- You must pass through an intersection with a four-way stop and at least four intersections that have a stop sign or a traffic light (you will also be required to make a right turn at two of these.) You will also need to pass through two yield-controlled intersections where you and oncoming traffic receive precedence – that is, right of way.
- You may not approach any crossing along the route more than once coming from the same direction.
- You must cross at least two intersections with two-way traffic.

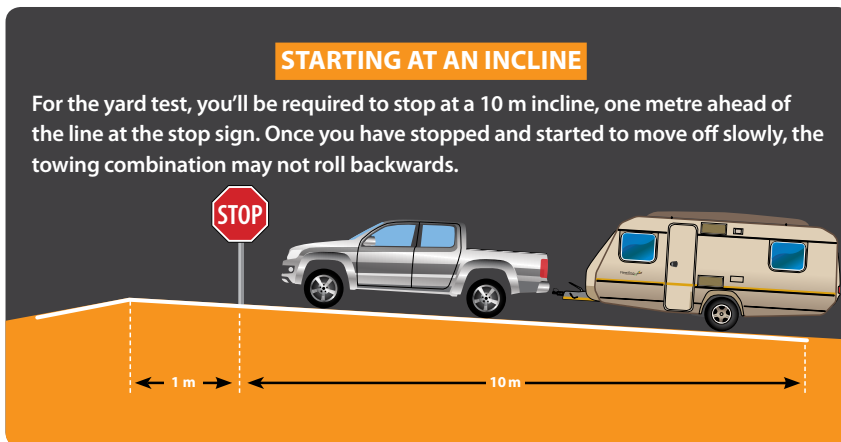
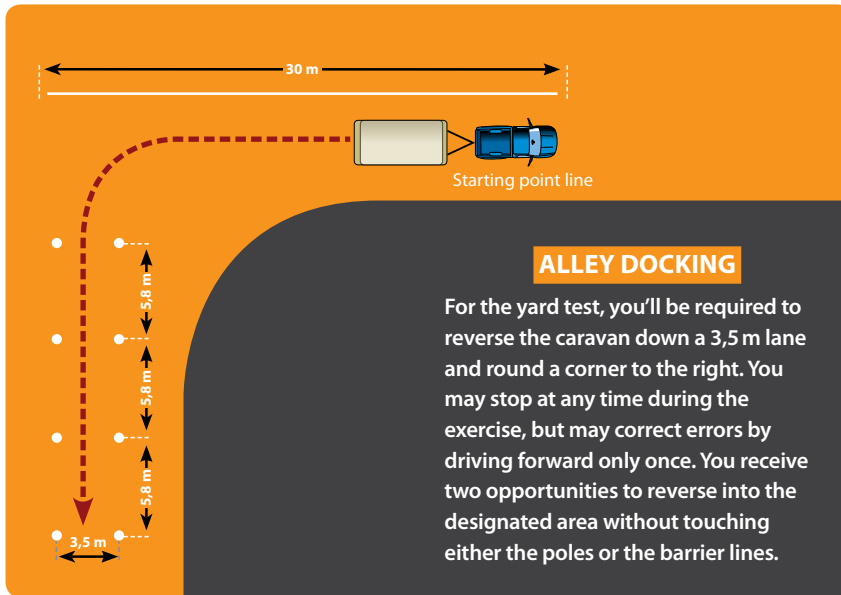
SUPPOSE I HAVE A HEAVY VEHICLE DRIVER'S LICENCE?

Heavy vehicle driver's licences are categorised as C, C1, EC and EC1. With a C and C1 driver's licence, you're not allowed to tow, but if you have an EC1 licence, you may tow a combination of which the GCM can be up to 16 000 kg. For anything heavier, you'll need an EC driver's licence. *(And a huge parking spot. – Ed.)*

WHAT ABOUT MOTORHOMES?

Most motorhomes are built on the same chassis used by delivery vehicles with a GVM of more than 3 500kg. Usually, the driver of such a vehicle would hold a C1 driver's licence, but the moment that a vehicle is classified as a motorhome, that restriction falls away and the tare requirement is applicable. As long as the tare doesn't exceed 3 500 kg, you may drive a motorhome with an ordinary B licence.





WHAT IF MY DRIVER'S LICENCE IS MISSING OR STOLEN?

These things sometimes simply go missing. Get a temporary driver's licence at the test centre while waiting for your new card to be issued.

AND IF I LOSE MY DRIVER'S LICENCE IN THE BUNDU?

If you're too far from civilisation to apply for a temporary driver's licence, you may take a sworn affidavit at a police station. You may then drive around with this affidavit for up to three days until you can get to a licence test centre. Make sure the contents of the affidavit address the following:

Why you no longer have your driver's licence card. It's going to be hard to convince a traffic official that a leopard ate your licence, but you have to try, at least.

The code of your current (lost) driver's license. Don't even dare to pretend that you are also licenced to operate a heavy vehicle or a motorcycle when you don't.

Any restrictions on your driver's license. This includes having to wear spectacles when driving or being qualified to drive only automatic vehicles.

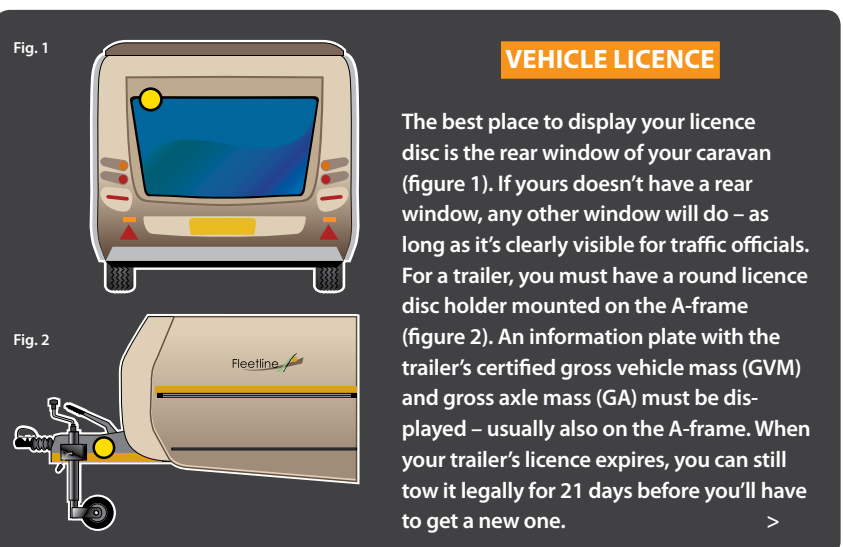
Where the driver's licence was issued. This enables a traffic officer to joke about which province has the best drivers.

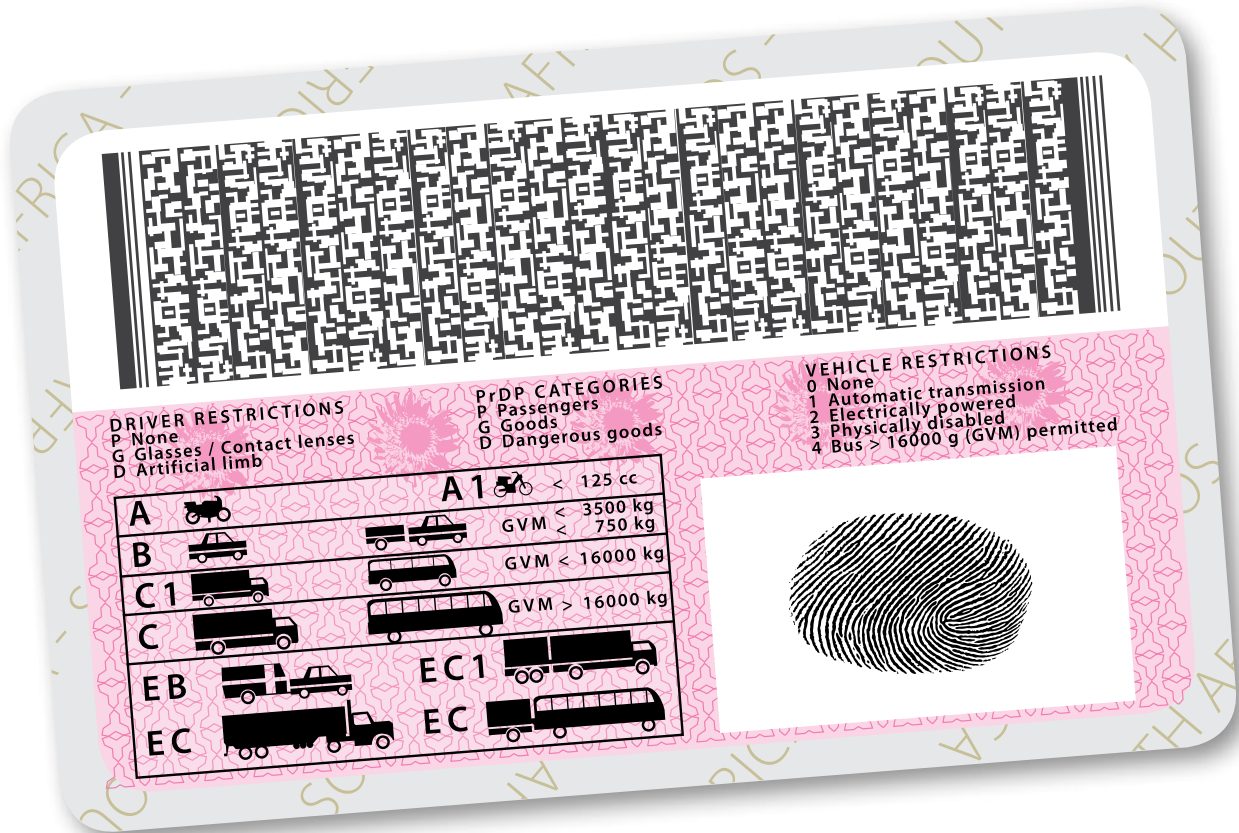
WHAT DO I DO ACROSS THE BORDER?

SA forms part of the Southern African Development Community (SADC) and the driver's licences of all member countries are recognised mutually. You don't need an international driver's licence to drive in our neighbouring countries.

REMEMBER HER BIRTHDAY...

Your driver's licence expires every five years. When you apply for a new card, you can still legally drive for three months with your old one after it has expired. Just keep your old card and the receipt that you received with your renewal application with you.





3 GET THE CORRECT DRIVER'S LICENCE!

Your buddy Dave reckons you can tow a Sprite Splash with a Code 10 heavy vehicle driver's licence. The oke at the driving school says that if you have the new C1 driver's licence, Bob's your uncle. Then you run into Harry from the traffic office at Spar and he's pretty sure your C1 driver's licence should do the trick – he was told that some time in the future, you will in fact be able to tow with it. It's not exactly what you wanted to you hear, and now you're in two minds again. You decide to go with what Harry and the guy from the driving school said. After all, you know you're a good driver and you don't want to start from scratch again, get a learner's driver's licence or do the towing test...

FIRST, THE BAD NEWS

You're misinformed and bound for trouble. At some stage, a law enforcer is going to nail you, because you're not allowed to tow

your Splash with a C1 driver's licence – finish and *klaar*.

The towing regulations in the Road Traffic Act (no. 93 of 1996) states this clearly, even if certain people try to tell you differently. And it's not just a fine that you need to worry about – your insurance won't pay if you're involved in an accident and don't have the correct driver's licence for towing.

WHAT'S THE PROBLEM?

Road transport consultant Alta Swanepoel of Alta Swanepoel & Associates in Pretoria says that the continuous debates, uncertainty and confusion is unnecessary.

You only need to comply with the regulations in the act, which is not that difficult to understand. She attributes the problems and confusion to stubbornness and says that people should let go of the idea of the old driver's licence and forget it entirely.

"The legislation is actually very clear. People are sometimes stubborn. They still talk about a Code 8 and Code 10, which ceased to exist 18 years ago. That adds to the confusion."

Alta also says that there are people who don't want to do the towing test and try to talk their way around it.

The Act is however clear. The fact is: If you don't have a driver's licence for towing, you'll have to accept that you need to do a K53 again. You need to write a learner's driver's licence test and go for a towing driver's licence test thereafter.

THE ANSWER LIES IN THE 'E'

A basic breakdown of the different driver's licence codes can be found on the back of your driver's licence card. The crux of caravan towing lies in the last three codes starting with an E: EB (light vehicle), EC1 (heavy vehicle) and EC (extra-heavy vehicle).

These driver's licences are the only ones with which you can tow a trailer or caravan with a gross vehicle mass (GVM) of more than 750 kg.

Under the top group driver's licences at the back of your driver's licence card, you'll find the normal motor vehicle driver's licence (Code B) with which you are also allowed to tow, although nothing with a GVM of more than 750 kg. So you can tow a trailer or a small two-person caravan, as long as it states on the caravan's plate that it has a GVM of 750 kg or less.

Under the top group, there is also two heavy vehicle driver's licences: the C1 (or old Code 10) that some people wrongly view as a general towing licence, and the C driver's licence for extra heavy vehicles. You are only allowed to tow a caravan with a GVM of 750 kg or lighter (and nothing heavier) with these two heavy vehicle driver's licences, just like with the Code B for motor vehicles.

BUT WHY NOT?

Why aren't you allowed to tow your Sprite with the B-, C1- or C driver's licence, and only with Code EB, EC1 and EC?

Code B, C1 or C is for non-articulated or rigid vehicles that don't entail a horse and carriage. Even if you don't complete a towing test for rigid vehicles, you are allowed to tow a caravan or trailer with a GVM of 750 kg or less. Code EB, EC1 and EC driver's licences are specifically for articulated vehicles and bigger towing combination and requires a towing test. If you want to tow any caravan or trailer with a GVM of more than 750 kg, you have to do the towing test. If you obtained a Code 8 driver's licence before March 1998, you do however have a towing licence (EB), even if you never did a towing test.

MOTORHOMES AND BAKKIES

Authorities use three weight yardsticks for driver's and vehicle licences: The weight of the empty vehicle (tare); the gross vehicle mass (GVM); or the gross combination mass (GCM).

With motorhomes, they've given some leeway. Although these are built on the chassis of a panel van, or a goods vehicle, it is considered to be a normal vehicle and the directive for your driver's licence and vehicle licence is its empty weight (tare). So you only need a normal driver's licence (B) for

this type of vehicle.

If you're going to tow a Jimny or anything else with a GVM of more than 750 kg with it, the B driver's licence won't do – you'll have to get a licence for towing.

There's no leeway with bakkies. Even if your bakkie is your only driving or towing vehicle, it is still considered to be a freight vehicle, not a normal motor vehicle.

As with a bus or truck, the weight yardstick for a bakkie is GVM. If you have a Ford F250 with a GVM of more than 3,5 tons, for instance, you need a Code C1 driver's licence to drive it and a EC1 to tow your caravan with it.

But that's not all: You also need a professional driver's permit, because this vehicle has a GVM of more than 3,5 tons.

LEGALLY SPEAKING...

B


With this driver's licence, you can drive a vehicle or motorhome with a tare that doesn't exceed 3,5 tons; or a mini-bus, bus or freight vehicle with a GVM of 3,5 tons or lighter. You're only allowed to tow a trailer or caravan with a GVM of 750 kg or less.

C1


You're permitted to drive a motor vehicle with a tare less than 16 tons, or a minibus, bus or freight vehicle with a GVM less than 16 tons, but you're only permitted to tow a trailer weighing less than 750kg. With this licence, you automatically get a Code B licence.

C


This is the extra heavy vehicle licence for rigid vehicles like trucks and busses with a GVM of more than 16 tons. With this licence, you're also only allowed to tow a trailer of 750 kg; and you also automatically obtain Code B and C1 driver's licences with it.

EB


You're permitted to drive a rigid vehicle with a GVM of up to 3,5 tons. You're also allowed to drive a car with a tare of up to 3,5 tons, or a minibus, bus or freight vehicle with a GVM of up to 3,5 tons, as well as tow a trailer or caravan with a GVM of more than 750 kg. With this licence, you also obtain a Code B driver's licence.

EC1


You're permitted to drive a rigid vehicle with a GCM less than 16 tons. You're also allowed to drive a car with a tare below 16 tons, or a minibus, bus or freight vehicle with a GVM less than 16 tons, and tow a caravan or trailer a GVM of more than 750 kg. You also obtain a Code B, C1 and EB driver's licence with it.

EC


The big shot of rigid vehicles with a GCM of more than 16 tons. With this licence you are also permitted to drive a bus or freight vehicle with a GVM of 16 tons and above and tow a caravan or trailer with a GVM of more than 750 kg. You also automatically qualify for a B, C1, C, EB and EC1 licence.

go! Drive & Camp says Get that Code E in your driver's licence – it's the only legal way for you to hitch your Sprite and tow it to Uvongo. >

4 LET'S GET TECHNICAL

Should you have reflectors on everything you tow? And if so, should there be two or seven? Where do you put the yellow reflector tape? Here are all the answers to your burning questions.

THE BRAKES

A trailer weighing less than 750 kg when fully loaded is not required to have brakes, but if the GVM is between 750 kg and 3 500 kg, your trailer must have run-in brakes.

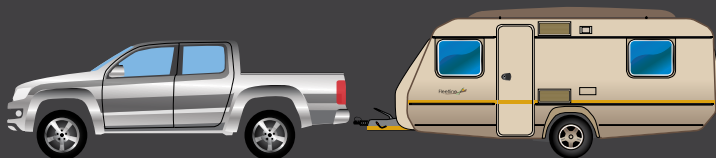
This implies that the trailer you use to dispose of garden refuse on Saturdays doesn't have to be equipped with brakes of its own, but your caravan or off-road trailer must have overrun brakes. When a towed vehicle weighs more than 3,5 tons, it must be equipped with service brakes.

And if you absolutely must tow a ski boat *and* trailer behind the caravan (not recommended) and the combined weight of these two exceeds 3,5 tons, then both the trailer and the caravan must have service brakes.

THE DIMENSIONS

A trailer or caravan may not be wider than 2,5 m. The total length of the towing combination may not exceed 22 m. This won't pose a problem to the

majority of caravanners. For example: If you should tow a Jurgens Exclusive with a Nissan Navara, the combination amounts to only 12,5 m.



OVERRUN BRAKES WORK AS FOLLOWS

An overrun brake (or surge brake) is a German invention that have been used all over the world for over two decades.

This is how it works: The coupler of the vehicle being towed is attached to a dampened sliding mechanism (A).

When you step on the brakes, the towing vehicle slows down while the vehicle being towed continues to move forward, thus exerting pressure on the

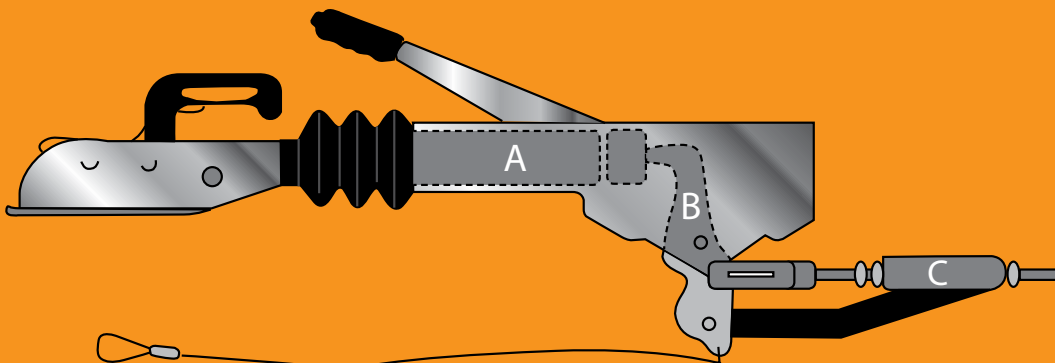
sliding mechanism. Attached to the rear end of the slider is a brake lever (B) that rotates on a pivot.

When the sliding mechanism pushes the upper part of the lever rearward, the bottom end simultaneously moves forward.

Attached to the lower end of the lever are two cables (C) or rods that lead to the drum brakes on the wheels.

So whenever the lower end of the lever moves forward, the cables are pulled to engage the brakes of your trailer or caravan.

Whenever a towing vehicle accelerates the sliding mechanism is once again extended, the brake lever moves forward while its bottom end moves backwards which in turn releases the brakes.



THE GUARANTEE

Vehicle manufacturers often provide their own guidelines regarding the weight of heavy vehicles that their products can tow.

Sometimes, this is less than the legal weight limit. If you then tow a heavier trailer or caravan and end up in an accident, the warranty may be declared void, which could cause insurance problems for you.

CHEVRONS

Every trailer must have a chevron board at the back – as must your caravan. Should the board be too long, you may trim it, provided that the chevrons are still clearly visible. However, if you don't want the rear of your caravan to be mistaken for a Putco bus, there are two alternatives: you may affix seven red reflectors in a zigzag pattern in two rows at the back of the caravan or trailer, or you may use a red reflective triangle on each side instead.

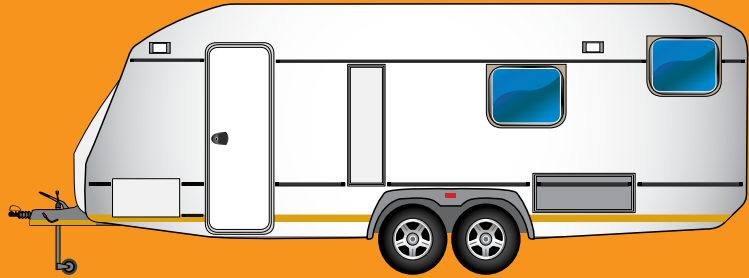


THE YELLOW REFLECTOR TAPE

Since 2006, it is compulsory to apply yellow reflector tape along the sides and rear of all trailers and caravans to ensure visibility for other road users.

Remember that the rear strip may

not be more than 60 cm from the bottom edge of the towed vehicle and that the strips must run along at least 80% of the rear and side panels of the vehicle.



THE TOW HITCH

The maximum load that the tow hitch is permitted to tow is stamped on its side. Never exceed this weight, even if it seems sturdy enough to tow a freight train. Your family won't be amused if your caravan overtakes you downhill because the tow hitch snapped.

also be indirectly increased whenever the premium is adjusted upwards owing to inflation or a claim. Caravans fall into a low-risk category, because they're used less often than cars. So the separate premiums are not high. *(Except if you want to tow your caravan or trailer daily in peak traffic – Ed).*

5 ARE YOU SURE YOU'RE INSURED?

Keep these important pointers in mind regarding your caravan's insurance.

SEPARATE POLICY OR PART OF HOMEOWNER'S INSURANCE?

Decide whether you'd prefer to have stand-alone insurance for your caravan, or if you want to include it with your homeowner's insurance. Most homeowner's insurance policies will cover your caravan against theft or damage, but you'll have to specify and insure the contents separately. The same applies to a tent. If you insure your caravan or trailer separately, the premium does not increase if you, for example, lodge a claim against your homeowner's insurance.

If your caravan's insurance is part of your homeowner's or car insurance, the cost will

WHAT ARE THE MORE COMMON CLAIMS?

Most claims involve damage caused by potholes, and also wind and storm damage. People also often submit claims for theft from their caravans. Most of the break-ins don't occur in camping sites, but at home, where the caravan is parked outside and an easy target. Claims involving accidents chiefly originate because the vehicles being towed aren't properly maintained. So it's important for caravans or trailers to be fully serviced by a dealer at least once a year.

STRANDED EN ROUTE?

The most underrated benefit of caravan insurance is that you're assisted when you have a breakdown. This can be anything from help with a puncture to assistance if your caravan overturns and you're stuck in the middle of nowhere. Remember: If your towing vehicle breaks along the way, most vehicle insurers won't make provision for your caravan to be towed as well. Ensure that your caravan insurance makes provision for this.

>

WHAT HAPPENS IF I'M INVOLVED IN A COLLISION?

As is the case with a motor vehicle, your caravan is also insured comprehensively against damage in a collision. However, there is a huge difference with regard to third-party claims. If, for example, you should tear off another car's side mirror with the side of your Sprite, the claim will be submitted to your motor insurance and not your caravan's, because insurers argue that the towing vehicle caused the accident – not your caravan.

The caravan could not have driven along the highway on its own. As long as it's hitched, it is merely considered to be an extension of the towing vehicle. The moment that you unhitch your caravan and it accidentally rolls over your neighbour's foot in the campsite while you are trying to park it, the caravan insurer will have to pay for his medical bill.

6 DON'T FORGET

The prospect of a holiday sometimes makes you want to hit the road so quickly that you completely forget about a few essentials. The little list below should help you unyoke with ease.

START IN GOOD TIME

There are a few things that you need to address beforehand. If official documents are lacking or an uncommon spare part needs to be ordered from the big city, you're not going to get things sorted during a single lunch break.



Get the paperwork sorted

Make sure that both your medical aid and insurance cover is in order.

You don't want to be stranded next to desert highway with a wrecked car and a broken arm, and then have to debate an operator in some call centre.



Fatten the piggy

Ensure that there is sufficient funds in your bank account so that your debit orders can be paid and your electricity and water won't be cut off during your time away from home.



Before you head off

If you're planning to travel far, it's advisable to have your towing vehicle as well as the caravan serviced before you leave home. You should at least have the wheel bearings, lights, spare wheels and brakes tested.



Is everything up to date?

Make sure that neither your driver's or vehicle licence will expire while you are on holiday – or else you'll incur fines before you get back home.



Get a comprehensive road map

Get the most recent and best map of the areas you'll be passing through. Make sure your GPS (if you have one) is updated with the latest mapset.



Remember your pills

There's only one ointment that works for your chilblained toes or fingers, but what's it called again? It will be a tall order to find it in an unfamiliar town's pharmacy! Also remember to start taking malaria prophylactics early enough if you're travelling to an affected area.



Remember your first-aid kit

Include all the basics – your GP or travel clinic should be able to advise you on what needs to be included.



Get that chronic meds

If someone in your family uses chronic medication, arrange a double prescription with your doctor or pharmacist beforehand so that the meds will last until you return home.

KEEP THE BADDIES OUT

Crime has become a national pastime – so do what you can to prevent your home from becoming a criminal's playground. Test your home alarm a number of times before your departure to allow sufficient time for repairs, if necessary. Leave a key and the alarm's deactivation code with a neighbour, friend or a family member who lives nearby. Also provide them with a copy of your itinerary and the contact details of the places where you'll be camping – in case a geyser bursts or Amadeus, the next-door dachshund, consumes your beloved, rare, prize-winning budgerigars.



Inform your security company

Most of them will be prepared to pay a visit to your property more frequently during your absence. Your security company should also have the contact details of whoever has your house keys, should the alarm be triggered and the guards need access to your property.



Cancel the paper(s)

Cancel all newspaper deliveries for the duration of your absence and also arrange for someone to empty your mailbox once in a while.



Don't be an easy target

Don't announce to the entire world that you're going away on holiday. Load the car up in the garage and don't leave any messages on your answering machine announcing that you'll be away for a while. It's like an open invitation...



They know all the tricks

Never leave a key in its lock on the inside of a door. If a burglar notices it through a window, he'll do anything to reach it.



Don't encourage thieves

Garden tools lying around make dirty work easy for opportunistic burglars or anyone who is up to mischief. Rather lock away the ladder, spades and even the hosepipe in your garage. Who knows, perhaps that mischievous little rascal from next door decides to flood your house just for fun while you're away....

I'M ALWAYS AROUND...

A little bit of movement and changes in and around the house will create the illusion that there is someone at home.



Would you like to phone a friend?

If you use a house sitter, the person must know how your alarm system works. Also give them the phone numbers of neighbours or friends who they can call if there's a problem.



Fewer possible problems

Switch off all unnecessary electrical appliances if the house sitter won't be needing them.

**Make those thieves wary**

If you're not using a house sitter, it is a good idea to ask your neighbour to water your garden and house plants often and to switch the lights on and off from time to time. This creates the illusion that your house is occupied. You could also get a timer switch which will automatically turn your lights on and off.

YOUR BEST FRIEND

You may be excited about your holiday, but it's no fun for your dog to stay at home all alone. Animal hotels are usually fully booked during the holidays. If there is no-one to take care of your pets at home, you'll have to arrange accommodation for them months in advance.

**Do your homework**

Find out from the camping spots you'll visit if you need to pack items such as extension cords or a braai grid.

**It's the little things**

Remember the right chargers, adaptors, extra memory cards and batteries for your camera, mobile phone, tablet or laptop.

**Consult the weatherman**

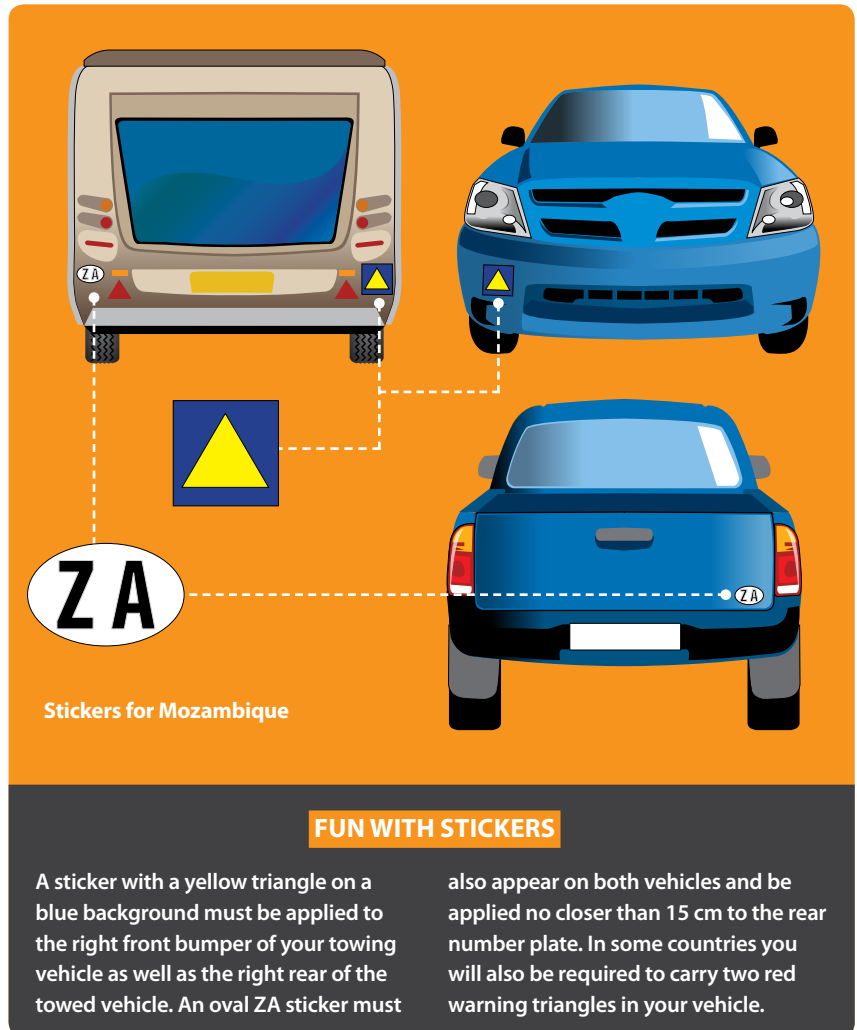
Find out the weather forecast for your destination. It's pointless going to the Boland during the December holiday with a suitcase filled with jerseys.

**ACROSS THE BORDER**

Make sure you have the necessary documents if you're crossing the border. It will ease things along if you have to deal with grumpy foreign officials. (And when we refer to documents and papers, we don't mean stacks of R100 notes – Ed.)

Leave your mark. South Africans don't need to apply for a visa in order to visit our neighbouring countries, but a passport must be valid for six months after the return date. Make sure about regulations if you're travelling farther north.

Licence? Your South African driver's licence is valid in all SADC countries.



Stickers for Mozambique

FUN WITH STICKERS

A sticker with a yellow triangle on a blue background must be applied to the right front bumper of your towing vehicle as well as the right rear of the towed vehicle. An oval ZA sticker must

also appear on both vehicles and be applied no closer than 15 cm to the rear number plate. In some countries you will also be required to carry two red warning triangles in your vehicle.

And where are those papers? You must have the registration certificates of your car and towing vehicle with you. If you're still paying instalments, the bank must issue a letter of consent for you to use the vehicle as well as a copy of the registration docs.

I promise it's mine! If a grumpy official stops you in a foreign country, it will be useful to have a clearance certificate handy to prove that your vehicle is legally yours and not stolen. Get this form prior to your departure from the Vehicle Clearance Department at a traffic department's test centre nearest to you. It's free of charge.

Insured to the letter. The insurer of both your car and caravan must also issue you with a letter of consent.

Call the doctor. Consider getting medical

cover for a holiday across the border.

But I've had it forever! Obtain a temporary export permit (the DA 331 form) on the South African side of the border for listing items that you'll be bringing back with you – such as cameras, binoculars and laptops.

For that unexpected mishap. If you're going to Mozambique, get third-party insurance for your vehicle and trailer or caravan from Outdoor Warehouse before your departure. It costs R220 for the towing vehicle and R110 for a caravan, normal trailer or off-road caravan.

No bribery, please. You often hear about people who get pulled over and then hand over money to the traffic officials. Don't do it! Just act friendly and insist on going to the closest police station. >



potential buyer. Statements like “this is a real bargain” are taboo.

IT'S YOUR GOOD RIGHT

According to the CPA, the buyer has the right to purchase quality products with high safety standards. If there is anything wrong with the product, the buyer needs to know about it before the purchase. If he finds a defect after the transaction that wasn't disclosed before the purchase, he has six months after the transaction date to address the issue. If you decide to return the caravan because of such a fault, the seller cannot charge you a levy for returning it. He needs to fix the defect or return your money. In cases where the seller fixes the defect and you decide to keep the caravan, you have a further three months to make sure the repairs last.

VOETSTOOTS IS A FAIRYTALE

In the old days, a person could sell a caravan 'as is', meaning that the buyer would accept it the way it was, defects and all. However, the full disclosure clause nullifies the concept of *voetstoots*. The buyer has six months to return it to the seller with any problems he didn't know about at the time of purchase.

GUILTY, YOUR HONOUR

If the deal goes sour and the seller is found guilty of transgressing the CPA, a fine of up to R1 million or 10% of the annual turnover of the business can be imposed.

TEAMWORK

The CPA doesn't replace normal warranties from manufacturers. The law and guarantees are in force, until they expire.

ME, YOU, THE NEIGHBOUR TOO?

The CPA affects transactions between a business and a consumer, for example when you buy a caravan from a dealer, or when they service it. But the act is still very new. It hasn't been ruled out that your neighbour might face the wrath of the law if he sells you a faulty caravan privately. In this sense, the law is still open for interpretation. It simply states that where you as buyer are part of the transaction, the party from who you are buying the product or service is considered to be the supplier, and thus included under the law. >

8 THE CONSUMER PROTECTION ACT

The CPA aims to protect consumers' interests. So if you buy a caravan or trailer that's not up to code, you can go back to the seller. If you buy a new one, it should be straightforward, but buying second hand means walking through a minefield.

IT'S A DONE DEAL

According to the law, a contract between two parties can be created in writing or verbally. An electronic signature is also accepted. If the seller sends you a contract via email and you agree to the terms in your reply, it's considered binding. It is advisable to have physical proof of the contract.

YOU NEED IT ALL: A TO Z

Before you sign anything, make sure that the contract adheres to the requirements of the law. If not, it could be declared null and void and both parties would have to return whatever they gained through the agreement. The party that transgressed the law will also be liable for any damages caused to the other party by the transgression.

NO LEGALESE, THANKS

The contract must be written in simple language that is easy to understand.

TELL ME EVERYTHING

The seller must disclose any repairs made to the caravan because of the CPA's full

disclosure clause. Sellers even need to specify parts that were checked during a normal service, even if it turns out they didn't need repairing or replacing.

THE WHOLE TRUTH

Sellers may not falsify any info influencing the deal and must act in good faith.

BLACK ON WHITE

It is always safer if the seller puts everything he explained to you about the caravan and the transaction in writing. This way, he can prove that he made you aware of it.

BE REASONABLE

You can't draw up a purchase agreement that contains unreasonable terms and conditions. For example, the seller may not create a clause that aims to undermine the law.

BUT IT'S NOT MY FAULT!

The seller cannot include clauses that protects him against reasonable risks associated with the contract. If you buy an off-road trailer, for example, the seller can't stipulate that he won't be liable if a door falls off its hinges on a rough road a week after you bought it.

HOLD ON, NOW

The seller may not unduly influence a



FIND YOUR NEXT CARAVAN OR CAMPER TRAILER

And view it from every angle.



Visit our user-friendly website or App and find your next caravan or camper-trailer quickly and easily. You can also view each product with our latest 360° Interior View feature, allowing you to interact with the product and see it from every angle. Enhance your viewing experience and find your perfect match with Carfind.co.za



9 KICK THOSE TYRES FIRST...

The market for second hand caravans is positively booming. Have a look at websites such as Gumtree and Carfind – they're filled to the brim with offers. But you can't always be sure what you're letting yourself in for when you buy a caravan from a complete stranger.

We chatted to Pretoria-woonwaens, as well as workshop manager Lourens Matthysen, who pointed out what you should look out for when you buy a second hand caravan.

1 Appearances matter

Pay attention to the general condition of the caravan exterior. The outer layer of most caravans is made of aluminium – this easily picks up scratches and can even dent if the caravan is knocked by a branch.

But don't be putt off if the caravan has an unsightly scratch. Most caravans' side panels consist of three layers on top of each other.

Chances are good that a mark on it won't go deeper than the outside panel. In that case, you only need to replace that panel. These days, caravan noses and sterns also boast fibreglass panels that can be repaired easily enough.

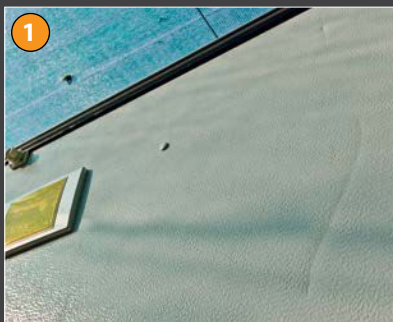
2 It's not inside...

The previous owner may have damaged the caravan's roof when he misjudged the height of a low awning. You're not going to see this if you stand next to the caravan, so climb a ladder and inspect the roof.

Caravans that were built after the nineties have fibreglass roofs than can be repaired easily. Older ones have roofs made from thin sheeting. This type of roof is not only more expensive to repair, but can also leak where sheets were joined.

3 Fresh as a daisy?

Even if a tyre's tread looks acceptable, it doesn't mean that its lifetime hasn't expired. Pay attention to cracks in the side walls to give you an idea of the tyre's age. As a rule, tyres should be replaced after five years, irrespective of the condition of the tread.



4 Lighten up

Ensure that the housings of the all the lights are intact. It may sound like a nuisance, but a cracked lens means your caravan isn't roadworthy.

5 Legless throne?

Interested in a caravan with a cassette toilet? Then you need to ensure that you have all the necessary components. (*For obvious reasons – Ed.*)

All the current models on the market are imported and it can be expensive if you have to replace parts.

6 Shock absorber shock

If you can push and pull the head of the coupler back and forth without any effort –

the coupler's damper is kaput.

It usually costs about R880 to be replaced.

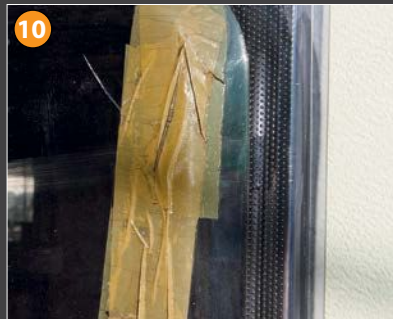
Also make sure that the rubber gaiter over the coupler's draw bar is in one piece. This is important as it keeps dust away from the axle.

7 Is your case watertight?

Don't be alarmed if you see stains next to the aluminium strips where the caravan's panels join together. This is a good sign – it's dust that builds up on the sealant being pushed from below the strip. These stains show that there's still sealant between the panels. The excess sealant washes off easily.

8 Are things running smoothly?

Check for any damage on the fibreglass



panel over the draw bar, especially on the side of the coupler. A handbrake that's pulled up too high can easily damage the panel and a new panel will cost you around R1 300.

You can ask a caravan dealer to repair the damaged panel, but for a few hours' work – at R375 per hour, plus spare parts – you'd really have to consider whether it's worth your while.

9 No softy

A caravan's battery is supposed to last a few years without giving problems, but the batteries of most of the second hand caravans that are brought to dealers are dog-tired. So make sure it still has some life left in it before you buy a caravan.

These days sealed batteries are the norm and it's therefore difficult to see what it looks like on the inside.

Rather take the battery to a battery dealer, who has the right equipment to test it properly.

10 Through the looking glass

Caravan windows scratch pretty easily and it doesn't take much to crack them either. What's more, they ain't cheap! Depending on which window is damaged, it can cost anything from R2 000 to R6 000 to replace it.

So make sure that all the windows are intact. Generally, the rubber seals between the coachwork and the windows that open don't give any problems.

11 Stretch that neck

Lift the pop-up roof and make sure that the canvas is still in good nick – these parts of the windows usually give out. Thankfully, you don't have to replace the entire canvas structure if a single window is damaged – only the affected panel.

12 The cold, hard truth

A fridge gives you a good indication of how well a caravan was looked after. A few rust marks here and there on shelves are not the end of the world and can easily be fixed with a coat of paint. But a fridge that doesn't cool food anymore is a different ball game. It's also difficult to know if a second hand fridge is doing what it's supposed to do if you only have half an hour to have a look at the caravan. If you're dealing with a private seller, ask them to switch it on the night before so that you can make sure it works properly. Caravan dealers will check the fridge before they display the caravan on the sales floor.

13 Watch out for wood rot

The biggest problem a caravan could possibly have is wood rot – and it's difficult to detect.

Almost all road caravans' panels are made of wood. If water gets into a panel for whatever reason, it's not a train smash, but if the panels are regularly exposed to moisture, the wood will begin to rot and eventually disintegrate. Even a relatively new caravan can succumb to this.

Dealers use a moisture meter to test for water, but it's not always 100% accurate – if a rotten part is already bone dry, it won't register on the meter.

It's near impossible to detect wood rot with the naked eye. But if you touch the outside panels and press hard on them inside the caravan and it feels uneven – almost as if the panel gives – it's a red flag, and then the wood is rotten inside.

Remember to also check the insides of all the cabinets in the caravan, especially the areas around the windows and air vents. If wood rot is in an advanced stage, the surface of the panel will wrinkle and you'll be able to see it quite easily.

Wood rot amounts to big damage and it costs a lot of money to repair: You'll probably have to replace the rotten panels.

2 Before you hit the road

A long road trip is so much better if you depart to your destination prepared. Here is a quick refresher course where we recap road signs, the golden rules of the road, GPSes, tyres and the age old problem of how much weight you're allowed to place on a tow bar...

1 DO YOU KNOW ALL THE ROAD SIGNS?

If you drive a vehicle, it means you've passed a driver's licence test that required you to know road signs.

But there are a few lesser known signs, rules and information signs. If you know how to read these signs, it'll save you lots of money and prevent damage – and spare you from a few family fights along the way.

IT'S A MILESTONE!

Signs indicating distance and direction have come a long way. Just more than 2 000 years ago the Romans placed round stone pillars next to the road to show travellers how far from Rome they were and in which direction the city lied. The pillars were supposedly planted at intervals of one mile (that is 1,6 km).

But all roads no longer lead to Rome, and nowadays our road signs indicate more than the distance to the nearest town.

When you're stranded next to the road in the middle of nowhere and you need to call for help, you must be able to determine roughly where you are. It won't help if you tell the emergency personnel you're somewhere between Richmond and Three Sisters and in the distance you can see a farm house with a blue roof.

The point of those blue signs of the South African National Roads Agency (Sanral) is to

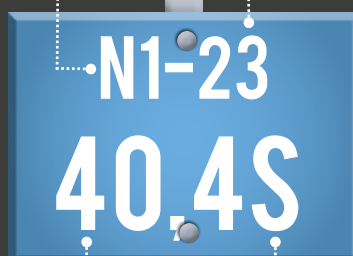
help you explain exactly where you are. You'll encounter them every 200m along our national roads.

They are blue with white text and the size of an A3 piece of paper (42 x 30 cm). On a dual carriageway the signs are on both sides of the road (at a 45° angle facing oncoming traffic) and on single carriageways only on the one side (parallel).

READ IT LIKE THIS

The road you're travelling on – for example the **N1**.

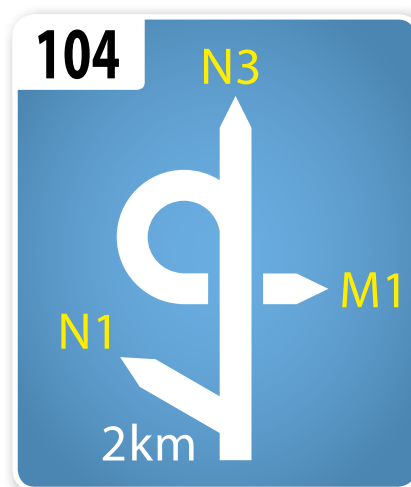
The specific section of the road – here Section 23 (an "X" after the **23** would indicate a temporary proclaimed route).



The distance in kilometre from where the section starts – here **40,4** km.

The direction you're travelling towards – here **South**. It can also be North, East and West.

WHAT'S YOUR NUMBER?



People often refer to the number in the white block on the top left of the road sign that indicates an exit from the highway as an exit number.

This isn't entirely incorrect, but have you noticed that these numbers do not follow each other sequentially?

If you look closely, you'll see some of these numbers also contain a letter. This is because the exits are "numbered" according to how far they are from the starting point of the specific highway.

Here's an example: You're taking the N1 north out of Cape Town, the first exit you'll find is numbered 3, which is approximately 3km from where the N1 officially starts. (At the bottom of Buitengracht, by the entrance to the Cape Town Waterfront).

A kilometre further is exit 4, but after that you get exits 7, 10 and 13. When a single exit divides into more than one direction, each one gets a letter added to it, for example 7A or 7B.



EARN YOUR STRIPES

The yellow line on the side of the road is a familiar sight, but what about the red one?

Do you know what the difference is?

- A **yellow** line is an indication that you're not supposed to park there, or in the case of main roads they indicate the shoulder or

emergency lane.

- A **red** line is a warning that it's dangerous to pull over here and prohibits you from stopping under any circumstance.



A HISTORY LESSON

1870's

Where do you come from? The granddaddy of modern traffic signs saw the light of day in the late nineteenth century, back when cyclists were described as people on "fast machines that move quietly and of which the peddles are difficult to control and that can travel long distances". Road signs were placed for

their benefit – to warn against slippery roads and steep hills ahead.



1903



Bad with the good. The first serious car accident in South Africa took place at a level crossing in the Cape when one Charles Garlick parked his dad's Darracq in front of the Johannesburg Express travelling at full speed.

Johannesburg 23 km

Miles become kilometres.

The metric system replaced the Imperial system, and South Africa now measured in kilometres rather than miles.

1909

All together now. The first traffic bosses in Paris, France, considered standardising traffic signs, and three years later the British announced four national road signs that indicated what the signs should look like. Shortly after that nine European countries agreed to use a common sign for a bump, turn, crossing and train crossing.



1971

Why right? In most countries in the world people drive on the right side of the road. This supposedly dates back to an era of horse-drawn wagons in America, when wagons drawn by several pairs of horses didn't have space for a driver on a wagon. The driver sat on the last horse at back on the left-hand side with a whip in his right hand.

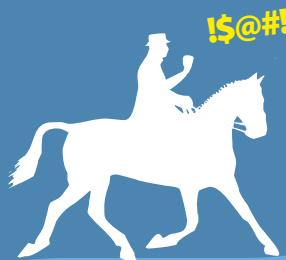
To better see the oncoming traffic, they had to keep left of him, and therefore he had to drive on the right side of the road.

Why left? The British discovered ancient Roman coach tracks indicating that these

guys actually preferred the left side of the road. The assumption is that riders kept left because most of them were right-handed. They could therefore hold the reins in the left hand and have the right hand free to greet oncoming riders or hold a sword

when there's trouble. *(Or to show rude signs to other coachmen that disobeyed the traffic rules. – Ed.)*

In countries like South Africa, Australia and India, which previously were British colonies, people still drive on the left side of the road.



2

DO YOU KNOW THESE GOLDEN RULES?

In primary school we learnt that one must stop at a red light and proceed when it turned green, but there are several lesser-known – and sometimes weird – traffic rules you may not know about.

WHAT DOES THE LAW SAY?

What's your number? A number plate must be properly fastened to your vehicle, front and rear. There are special regulations for vehicles registered for the first time after July 2011. Fines differ between regions, but you can expect around R500 if one of your number plates are missing. If you drive without number plates, you can be arrested on the spot. *(Regulation 35)*

Licence front left. You must stick the licence disc on the bottom left side of the windscreen where it can be easily read from the outside. This also applies to your trailer. If your trailer doesn't have a "transparent windscreen", you must place the disc on the front left of the trailer or on the A-frame where it can easily be seen. If the disc is exposed to the elements, it needs to be in a weatherproof cover through which you can still read the writing. *(Regulation 36)*

Give back, that's mine! Did you know you can claim back your licence fee if your vehicle is stolen? The annual fee you paid, is divided by 12 and you'll receive the remaining months' fees. *(Regulation 37)*

Shop talk. A motor dealer may not sell a car on his premises if it isn't registered in his name as "dealer's stock". *(Regulation 53)*

To your health! Authorities may declare your driver's or learner's licence invalid if you suffer from a medical condition that may lead to you passing out due to high blood pressure. *(Regulation 101)*

Where to now? If you've permanently moved to a new residence, you as the

licence holder need to inform the authorities within two weeks after the move. *(Regulation 113)* It is now also compulsory to show proof of address when you renew your driver's licence – so remember to take that municipal bill (not older than three months) along when you go queue with your chequebook. *(Regulation 32A)*

Watch out! The driver of a fire truck, emergency vehicle or ambulance, as well as a traffic or police officer may exceed the speed limit and ignore traffic signs as long as they're busy performing their duties and have taken the safety of the other road users into consideration. *(Article 58 and 60)*

Now you see it, now you don't. When two traffic signs next to each other are contradictory, you obey the instruction of the temporary one. This often happens when there are road works. *(Regulation 287)*

Flash, 1 001, flash, 1 001... A light flashing next to the road – like the orange light warning you about road works ahead – must flash one to two times per second. *(Regulation 287)*

A sobering fact. If you're under the influence of alcohol, you're not allowed to sit in the driver's seat when the engine is switched on – even if the car is standing still. You may also not refuse that the law enforcement officer draw your blood or say 'no' to the breathalyser test. *(Article 65)*

No tricks. You may not have any equipment in your vehicle that interfere with speed measuring devices. *(Regulation 292)*

Slow down! A goods vehicle of more than 9 tons may not exceed 80km/h – the same applies to any towing vehicle. Busses and minibus taxis may not drive faster than 100km/h. *(Regulation 293)*

Help immediately. If you're involved in an

accident in which someone died or was injured or any property (including animals) was damaged, you must stop immediately and afterwards report the incident.

If someone was hurt, you need to assist them as far as possible. *(Article 61)*

Dad, may I borrow the car? You may not drive a car without the owner's permission, and the owner needs to have the address and licence information of the driver if he's lending out his car. *(Article 31 and Article 17 of the AARTO act)*

Playing MacGyver. Don't let your buddy put ideas in your head about his "Banana Peel MK 5" device that deters thieves. It is illegal to equip your car with anything that can interfere with the brakes, even if it is to prevent theft. *(Regulation 149)* The same applies to devices that disconnect the steering rod. *(Regulation 200)*

Lights, action. Your car's lights must be intact – and must be able to stay switched on permanently. Between sunset and sunrise your car's front, rear and number plate lights must be turned on. *(Regulation 157)* And your car's lights must be such that you can see a person of average height 150m ahead. *(Regulation 158)*

Light on the topic. The number plate lights must work and be bright enough that you can read the text from 20m away at night. *(Regulation 170)*

Wink. If only one of your car's headlights is working, that light must be able to be bright and dim. *(Regulation 159)* The bright must be strong enough for the driver to see a person at least 100m ahead in the road. *(Regulation 160)*

To blink or not. If your car is more than 40 years old,



it doesn't need indicator lights. (*Regulation 193*)

If your car has indicators, you must be able to see them from 30m away in daylight. Front indicators may shine white or yellow and the back one yellow or red. (*Regulation 194*)

Can't see. Your car's front windscreen must allow at least 70% light through and side windows at least 35%. Material you apply to the glass to block sunlight, for example, may not have air bubbles or scrapes. (*Regulation 202*)

Is it a smoke screen? Your car may not emit so much smoke that it interferes with other road users and their visibility. (*Regulation 209*)

And reverse too. If your vehicle weighs more than 570kg, it must be able to drive forwards and backwards. (*Regulation 211*)

No steel. Your car may not have "steel tyres" – so no, you may not ride on your rims – and motorcycles may not have retread tyres. (*Regulation 212*)

Buckle up. If your vehicle has a seat belt, you are obliged to wear it. But this isn't required when you reverse or park. (*Regulation 213*)

Warn people. If your car breaks down on a road or on a shoulder, you need to put out at least one warning sign. The sign – such as a triangle – must be placed more than 45m away from the car, and must face oncoming traffic. This regulation doesn't apply if you're parked in a loading zone. (*Regulation 214*)

Keep an eye on that needle. If your car can go faster than 60km/h, the speedometer must work. (*Regulation 215*)

Too big, sir. Your vehicle may not be wider than 2,5m or higher than 4,3m. (*Regulation 223 and 224*)

Sho't left. A turn radius may not exceed 13,1m (turn circle therefore 26,2m) and a wheel base may not be longer than 8,5m. (*Regulation 225*)

Load carefully. If you load something on your bakkie, part of the load may not drag on the road, and it must be packed in such a way as to not interfere with your sight to the front, sides or back (in other words in front of the rear-view mirror). If you transport something on your car's roof, it may not be higher than 1,5 times the height of your



go! Drive & Camp says The good news regarding the speed limit is that you have 10km/h grace before the traffic official may issue you with a fine. But this doesn't apply where authorities measure your average

speed over a distance – then you're in trouble even if you went just 1km/h too fast. If an official doesn't fine you on the spot, the notice must be mailed to you within 30 days of the alleged infringement.

car's roof, but this does not include bicycles on the roof. (*Regulation 246*)

Keep left. You must keep to the left-hand side of the road, unless it is a one-way road. (*Regulation 296*) In other words, don't crawl along at 80km/h in the right-hand lane, even though some people like this so much.

The other side of the yellow line. During daytime you may drive to the left of the yellow line on the shoulder of the road if you want to allow someone to pass you, but only if you can see at least 150m ahead of you. This does not apply after sunset. (*Regulation 298*)

Watch out where you stop. You're not supposed to stop at an excavation next to the road where you can obstruct other traffic, or in a tunnel, or within 6m from where the road becomes narrower, or on the wrong side of the road with your car pointing against traffic, and also not within 9m from a pedestrian crossing. (*Regulation 304*)

Take a hike. You may not park on a traffic island, even if all the parking spots at Junior's under-9 rugby match are taken. (*Regulation 305*)

I said 'stop'. Traffic officials are not the only ones that can order you to stop. You must comply if a horse, sheep, pig, ostrich or mule herdsman tells you to stop. (*Regulation 307*)

Know your place. No part of your body may protrude from your car while you're

driving, except when you as driver gives a hand signal to turn, for example. You may not transport a person or animal on your car's roof – not even that pesky cousin-in-law. (*Regulation 308*)

No sis, man! You may not leave your car idling and you may not throw "offensive material" out the window along the way. (*Regulation 308*)

Switch off. When you stop at the petrol station to fill up, you must switch off the engine. (*Regulation 308*)

Hello, hello? It's no use clutching your phone between your chin and shoulder while you're driving. The law is quite clear: You may not drive and hold your phone in any hand or with any other body part. (*Regulation 308A*)

Look where you're going! There may not be a screen, such as that of a DVD player, in the driver's sight while he or she's driving. (*Regulation 308B*)

Silence! Your car may not be excessively noisy. This goes for the engine, exhaust pipe and the "Pop Shop Hits" in your CD player. (*Regulation 310*)

Beep-beep. Your hooter is there to warn people around you in an emergency. It is not a Morse code machine or doorbell. It will also not make the guy that just pushed in front of you disappear. (*Regulation 310A*)

Let them walk. When a vehicle stops at a

pedestrian crossing, you may not overtake that vehicle. **(Regulation 315)**

No spin, no cry It doesn't matter how fancy your Sentra is with its new mags and dropped suspension; you may not spin your wheels on the road, unless it's an emergency. And it definitely doesn't count as an emergency when Tiny van der Merwe with the LEDs behind his Chico's grill is flirting with your girl. **(Regulation 321)**

Slowly does it. If you're towing another car with a rope, for example, you may not exceed 30km/h. You may not tow any vehicle with a motorbike. **(Regulation 330)**

There can be only one. Motorbike riders may not ride next to each other, except when overtaking each other. This does exclude traffic officers though. *(Like Poncherello and Baker in CHiPs. – Ed.)* A motorbike rider must have at least one hand on the handle bar, and both wheels of the bike must always be in contact with the tar. So forget about a wheelie... **(Regulation 309)**

In the saddle. Bicycle riders must sit on their bike's saddle with one leg on either side of the bicycle frame. Bicycle riders must also ride behind each other and not next to each other, except when overtaking someone. You may not put an extra load on your bike – person or animal – if it obstructs your view. You must always have at least one hand on the handle bar and, again, you may not wheelie. **(Regulation 311).**

Back only. A bicycle must at least be quipped with back brakes if you want to ride on a public road. **(Regulation 152)**

Shrek's best friend... A donkey cart must display the owner's name and address. This information must be placed on the front left of the cart and the letters must be at least 2,5cm high. Outside of built areas donkey carts may not ride closer than 150m behind, unless when overtaking. **(Regulation 314)**

We're not all welcome there. You may not travel on a highway with a donkey cart, tractor, bicycle or motorbike smaller than 50cc. Rather look for an alternative route. **(Regulation 323)**

Pedestrians to the right. When walking on a road without a sidewalk, you must walk on the right-hand side of the road, as close to the shoulder as possible – yes, against the traffic. Pedestrians must cross at pedestrian crossings or road crossings – or within 50m thereof. **(Regulation 316)**

3 KEEP YOUR EYES ON THE ROAD

Road accidents are a terrible reality: According to the World Health Organisation about half a million people die annually due to malaria, but double that lose their lives in road accidents. South Africa does particularly badly – we have the highest number of road deaths per 100 000 people, and to make matters worse, a study by Discovery Insure showed your chances of being involved in an accident are highest when you travel long distances by car during the holidays.

HOLIDAYMAKERS SUFFER

In Discovery's study the behaviour of motorists travelling long distances during the holidays is compared to that of those commuting in cities daily. It seems drivers travelling during holidays are more impatient, because speed infringements increase by 26% during this time. More people also tend to drive at night during this time, because this number also increases by 5,5%.

According to an official report titled

“Snapshot of the Road Traffic Management in South Africa”, which documented accidents in 2011, more than 60% of all fatal accidents occurred over weekends. This is a dreary picture, but from these statistics you can learn some lessons to make travelling safer.

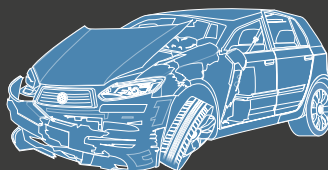
PLAN CAREFULLY

Be careful on a Friday. According to Discovery's research there's 15% more traffic on the roads on a Friday. It seems the impatience to get to weekend destinations also makes people worse drivers, because according to the report this is also the time when most people speed and drive recklessly.

Be afraid of the dark. It's better not to drive between 10 at night and four in the morning. Your chances of being in an accident are ten times higher than at any other time during the day. It will be a mission to get everyone in the car late at night anyway.

Everything keeps going right... If you check your vehicle carefully to ensure it's roadworthy before you depart, you lower your chances of being in an accident by a good 15%. (Chances of a family fight while

PROGRESS AND SAFETY



The safety of your vehicle goes hand in hand with technology. This includes from the design to factors like exhaust gasses, which negatively impacts the environment. But it remains the driver's responsibility to make the right decision at the right time...



Windscreen

A windscreen is designed to shatter in an accident.



Crumple zone

These parts absorb some of the impact force in an accident.



Seat belts

A seat belt prevents you from being flung about in the car on impact (or, even worse, falling out!).



Airbags

These are air cushions that inflate out of the panels to protect occupants if the car hits something.



Daytime lights

When your car's lights shine during the day, you are more visible.



Anti-lock brakes (ABS)

Brakes work better when the wheels continue to turn while braking.



Traction control

The car's computer ensures the wheels do not spin on the road.

you wait for a towing service are also considerably lower...)

TAKE IT EASY

It's common knowledge that you must stop and stretch your legs regularly when you travel far. According to Discovery the drive from Gauteng to the KwaZulu-Natal coast will take you five and a half hours if you stop and take a 15-minute break every two hours. If you drive straight through – and 5km faster than the speed limit while you're at it – you'll reach your destination an hour earlier, but your chances of not arriving at all, also double. This is besides the fact that you'll get tired behind the wheel.

BEHAVE YOURSELF!

Let's be honest: No vehicle gets into an accident by itself. Someone must do something – or not do something – to cause an accident. Drivers' negligence is the biggest cause of accidents. This refers to stupid behaviour like ignoring the speed limit or reckless driving – like overtaking on an unsighted/blind hill. To smoke, eat or drink (even if it's only food or a cooldrink) while driving, distracts you and increases your chance of getting in an accident. And

then there are the cellphones...

RATHER CALL LATER

Your chances of getting in an accident are four times greater when you use your cellphone while driving. Anton Ossip, chief executive at Discovery Insure, says two thirds of drivers use their phones while they drive, and many even try sending SMSes while behind the wheel. According to Discovery's research drivers in Limpopo are most prone to use their phones while driving, while Capetonians are the most law-abiding in this regard. Apparently about 40% of cellphone users in vehicles have a hands-free kit, but 80% of all calls made from cars are made without these.

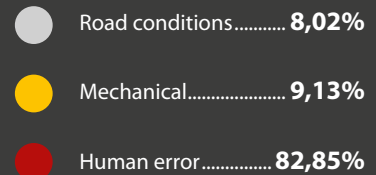
Discovery reckons your attention is distracted for almost a minute when you use your cellphone. This is like driving with your eyes closed for 1km at 60km/h.

BUCKLE UP!

Thirty, forty years ago wearing a seatbelt wasn't compulsory, but today there's no doubt about how many lives it saves. According to the government's report 67% of occupants on the front seats of cars faithfully wear their seatbelts. They reckon if this



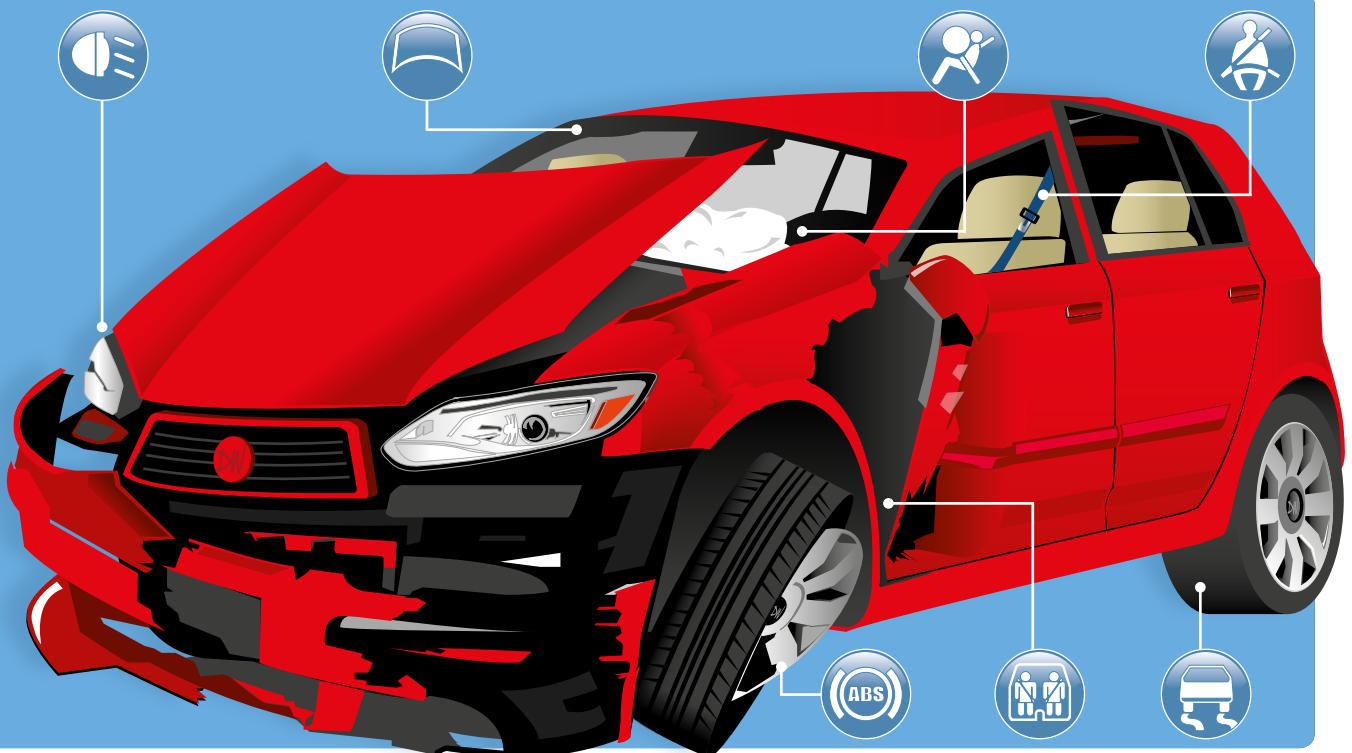
WHAT ARE THE CAUSES OF ROAD ACCIDENTS?



number increases to 80% for front and backseats, the number of fatalities will decrease by 30%.

go! Drive & Camp says It's easy to point fingers when someone angers you on the road, but keep your side clean first (and hope other motorists do the same).

Sources: Discovery Insure, the Road Traffic Management Corporation and the national department of transport.



4 TOWING WEIGHT AND DRIVER'S LICENCES

It's been a while since there has been such a complex subject in the towing world as the one concerning towing weight and driver's licences. After we explained in *WegSleep* #89 what you should be prepared for at the weighbridge – and what to do if you're overweight – we've been inundated with queries.

It seems every answer leads to another question. People are confused and angry about the situation and their feeling of helplessness.

The good news is you can do something about this yourself.

PUT THAT FINGER AWAY

The information on your trailer's disc differs from what your trailer weighs. The tare weight is heavier than what the weighbridge says and according to the gross vehicle mass (GVM) you're overweight if you pack anything more than a case of tomatoes. Now you're angry at the world and you're looking for someone to blame.

Whoa, says Fanie Marx of the South African Caravan Association (SACA). "The problem has many causes, and most of these are associated with competition between manufacturers – and this has a long history. Yes, the truth may have been bent a bit and chances might have been taken to ensure a trailer is the lightest on the market, but this isn't going to help you one bit at the weighbridge.

"The law is clear: It is your responsibility to ensure your combination is legal. The law enforcement officers are not going to say 'quickly phone your trailer manufacturer to

come solve this dilemma'. I reckon we must stop pointing fingers and fighting, take the matter into our own hands and correct it. Get yourself to a weighbridge, find out what your trailer weighs and do what you must to get the paperwork in order," Fanie says.

DO THIS

Willem Brits, a *WegSleep* reader from Pretoria, recently went through the process of getting the paper work for his 2011 model Jurgens Exclusive in order. He says he realised he would have to determine his caravan's empty weight again after he installed air-conditioning, a caravan mover and a bamboo box mattress (which is heavier than the original).

He contacted his local traffic department and asked which weighbridge the authorities recognise. He got an answer and headed that way with his caravan's registration documents. Here Willem was helped with the weighing process and the end result was that his empty caravan was 300kg heavier than the tare weight on the disc. It cost them R220 at the weighbridge.

Afterwards they went to the testing site to put his trailer through the test again. The axles, tyres and brakes among others were >



checked, as well as the lights and reflectors – to ensure the trailer is roadworthy. This cost him R347.

Willem then handed in his documents from the weighbridge and the testing site at the licensing office. Shortly afterwards a new licence disc with the adjusted tare weight was issued.

But the problem was that the trailer's tare weight and GVM were now exactly the same, which meant they wouldn't be able to load anything in the caravan.. They explained the problem to the people at the licensing office and were referred to a Data Fix counter where they took all their documentation.

Here the bureaucracy got in the way a little and there was a to and fro about which forms should be completed, but eventually they got on the right track with the correct documents. They had to return two weeks later.

When Willem's wife, Surette, arrived two week later to collect the new licence disc, the information was unchanged. According to Willem Surette then threw a bit of a tantrum and later that same day she left with the correct licence. The trailer's GVM is now just over 200kg more than its tare weight. In the end the whole proses took just over a month and Willem says he must now just replace the trailer's disc.

NOW WHAT?

Alta Swanepoel, a legal advisor specialising in road transport and traffic law, says she's glad to hear about people like Willem who are doing something about the situation.

"I think a huge problem in South Africa is the DIY-attitude. It is after all easy for us to add something and change our trailer a little here and there. But it's shocking how few people understand that those changes can make their trailer totally unroadworthy. "Therefore, it's good to hear there are people who follow the correct process to get on the right side of the law again."

It all starts at the weighbridge, Alta says. "Find out from your local traffic department which one you can go to to get the ball rolling."

But she is surprised to hear Willem could get his trailer's GVM changed. "It's only the National Regulator of Compulsory Specifications (NRCS) that can change a vehicle's GVM. You can get the tare weight



KNOW WHAT TO EXPECT. The more you know about what the law allows you to tow, the less you have to stress about a law enforcer stopping you at a weighbridge.

changed yourself, but only the manufacturer, together with the NRCS, can change the GVM. I understand there are cases, especially with older models, where the manufacturer isn't in the country anymore, and then you can go to certain test sites where they can calculate it for you.

"But you cannot decide for yourself that the GVM must be changed. If you change it yourself, it will still be incorrect on the eNaTIS system, because the vehicle specification stays the same if it doesn't get homologated again.

"In Article 1 of the Road Traffic Act is a definition of GVM and gross combination mass (GCM), and both state only the manufacturer may change these. Most testing sites don't touch the GVM, because this is that vehicle's maximum safe capacity.

"The manufacturer must take things like the trailer's tyres, the brake specifications and axles in account and accordingly determine what the GVM must be. There are certain minimum standards. If you change these and the vehicle is in an accident, you'll have huge problems," Alta warns.

THE TRAILER BUILDER SPEAKS

Bradley Salters, managing director of Jurgens Ci, says he is aware of people who've gotten their trailer's tare weight and GVM changed, but Jurgens Ci are still finding out exactly what the situation is.

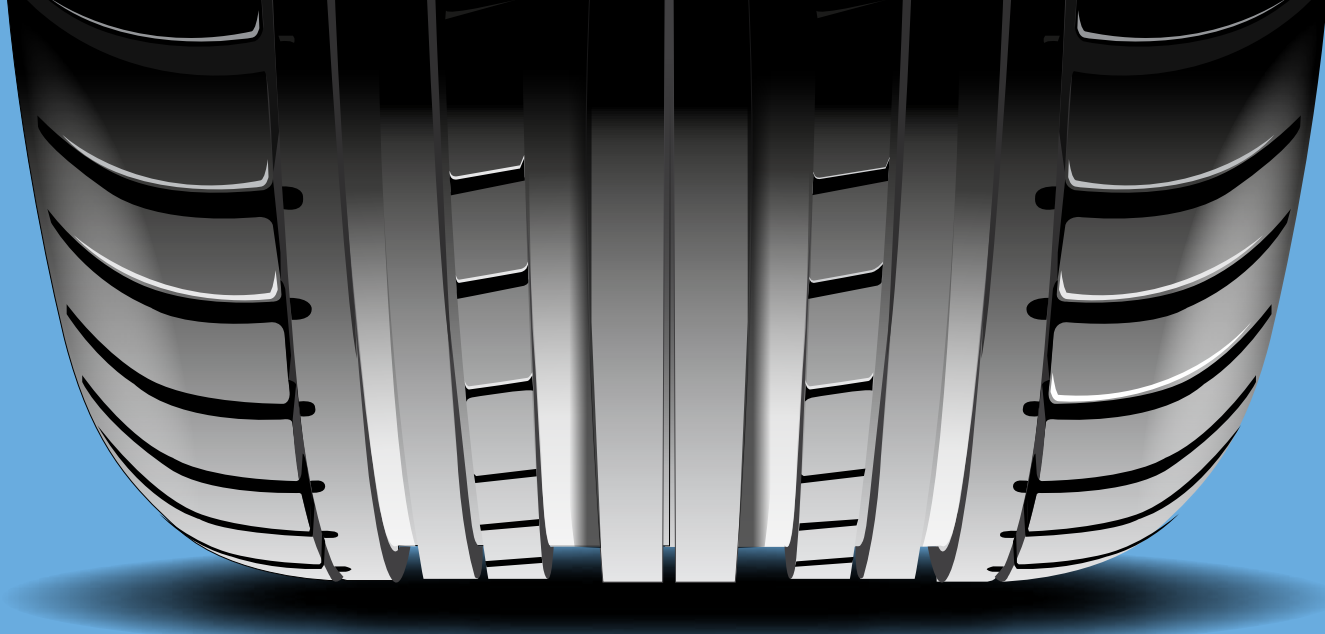
"We've had many requests from our dealers and from customers who want to get their trailer's information changed, especially people with older models," Bradley says.

"There are several reasons for this, and one must also note that the legislation has changed after many of these caravans were manufactured. As far as I know, the process must include a letter of authority from the manufacturer. In that letter the manufacturer must say that it isn't opposed to the changing of the GVM. But this only applies to those specific caravans and not the whole range. If the whole range's GVM needs be changed, only the manufacturer may do so."

Bradley says his team and himself have met with Alta to try and understand what their options are.

"It's important to make our customers' lives as easy as possible. We must get guidelines with regards to GVM in place, because there are specifications that need to be adhered to. I suspect in the case of people who've up to now managed to change their trailer's GVM themselves, there wasn't confirmation given by the manufacturer.

"We have in the meantime made a document available to our dealers that explains the process people need to follow. People can also get that important letter of authorisation from their local dealer."



5 TIME FOR NEW TYRES

The saying goes there are two things you can't escape: death and taxes. But there are a few more things that fall into this category.

Sooner or later you'll inevitably go out for dinner with your stingy brother-in-law with the expensive taste and at the end of the meal he'll suggest you split the bill 50-50 – even though you had the fish and chips while he enjoyed exotic imported mushrooms marinated in the Pope's tears. It's also inevitable that a school's sponsor form will arrive at home asking you to donate R1 per word for some or other reading Olympiad your child has to take part in.

It is as inevitable that you'll have to replace your caravan's tyres at some stage. This is never pleasant, and it always feels as if it's too expensive. And while we understand you're going to shop around for the best value for money, it isn't always a good idea to put Honest Ernie's bargain-of-the-week tyres on your trailer. There are a lot of things to consider.

LOOK AT THE MANUFACTURER

'A good starting point is to look at how the manufacturers decide on the tyres their caravans are fitted with in the factory. Clive Cox, Jurgens Ci's development manager, says the first thing they consider is the size of the wheel rim. "This can range between

13, 14 or 15 inch, but this is more of an aesthetic thing than anything else," Clive says. "In fact, we're moving away from 13-inch rims because they are so difficult to get hold of nowadays. At the moment most of our caravans are on 14-inch and our bush trailers on 15-inch rims."

Once the size of the rim has been established, they look at the tyre itself, Clive says. "One of the most important factors we consider is if the tyre can carry the caravan's load. And for this we look at the caravan's gross vehicle mass (GVM). For this purpose we use the weight of the heaviest caravan in our various ranges, for example the Exclusive. We then take its GVM and use the load index for tyres that is internationally recognised to find the appropriate tyre. This then applies to all the caravans in that range. For example, if you have a single-axle caravan with a GVM of 2 000kg, the law states that each of the caravan's tyres must be able to carry a weight of 1 000kg."

SPEED FREAK

Clive says the second, and equally important, consideration is the tyres' speed limit. "In terms of our legislation, where we're not allowed to go faster than 120km/h, we therefore need tyres with a speed limit of at least 120km/h.

"The tyres that are available in South Africa can go up to a speed of 180km/h or even faster – not that you must tow that fast. But the reason there's a speed limit on tyres is

related to the composition of the rubber the tyre is made from.

"When you drive, heat builds up in your tyres, and they are developed and manufactured to ensure the rubber in your tyre can stay intact at that particular speed and heat. If you therefore drive at 120km/h and your tyre's speed limit is only 80km/h, you can be sure your tyre is going to burst sooner rather than later. It is extremely important to take note of the tyre's speed limit, because it can lead to major problem if you make a mistake."

WIDER WIDEST

Once the carrying capacity and speed limit have been sorted out, they decide on the width of the tyre. "We look at 185mm, 195mm, 205mm or whatever the case is. But this is less important than the load index and speed limit of the tyres," Clive says.

They then find out which tyres that adhere to these specifications are available on the market. "For our caravans we use commercial tyres. These are similar to those used on minibus taxis, specifically because of those tyres' carrying capacity. We don't fit ordinary sedan motor vehicle tyres on our caravans.

"We look at what is available on the market from the various suppliers. For understandable reasons we do not buy tyres on the retail market, but rather from people who import them or directly from the factory. So we definitely also consider the price of the tyre and try to establish savings for our clients."

THE SPECIFICATIONS

All the information you need about your caravan's tyres, is on the side of the tyre. As an example, let's use the tyre the Sprite Tourer SW, with a GVM of 1 450 kg, is fitted with in the factory – a **215/80 R 15 110 S** tyre.

- The **215** is the width of the tyre in millimetre.
- The **80** is the tyre's profile, meaning the relation between the height of the tyre's side opposed to its width. This is given as a percentage.
- The **R** is for radian, which basically means there's a low enforcement that runs across the tread.
- The **15** means the tyre was developed to fit onto a 15-inch rim.
- The **110** is the tyre's load index. According to the index a tyre with a 110 index can carry a weight of 1 060 kg. This means the carrying capacity of the two tyres on the caravan is 2 120 kg.
- The **S** is the tyre's speed limit, meaning it was made to travel up to a speed of 180 km/h.

NEW TREADS

If it's time to buy new tyres for your caravan, Clive recommends you stay as

close to the specifications of the tyres the caravan originally had.

But when is it time to replace them? According to the Road Traffic Act your tyres are legal if there is at least 1 mm tread left on the tyre. The tread needs to be even across the width and circumference of the tyres, and the pattern must still be clearly visible. But Clive warns that tyres also expire, even if they still have more than enough tread left. "That rubber composition of your tire has an expiry date and this is usually about five years after the manufacturing date," he says. The date your tyre was manufactured is also on the side. In the case of the Tourer SW's tyre we used as an example, it's the number 4313. This means the tyre was manufacture in the 43rd week of 2013, which means it will expire around mid October 2018.

"You often hear about guys with older caravans they haven't used for a while, who go camping and then a tire bursts after travelling a short distance. This is because the tyre has expired, even though the tread was still good," Clive says. "The thing you need to remember about caravan tyres is that they never really reach their life expectancy in terms of kilometres travelled. It's not like with your car where you'll travel 60 000-80 000 km with your tyres. In the

same time frame your caravan might just travel 15 000 km.

But you still need to replace them after five years."

KEEP A LOW PROFILE

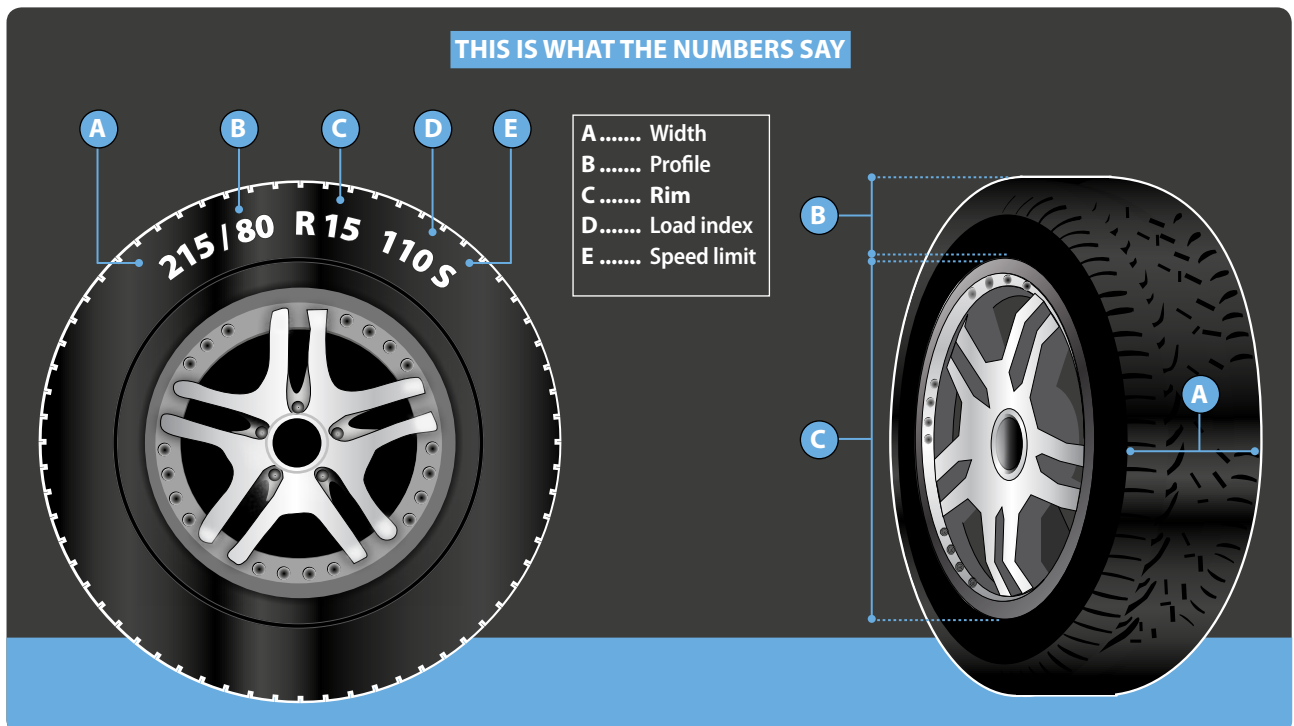
But what to do if you want to soup up your caravan with brand-new 17-inch rims and a set of low-profile tyres?

You can and may, says Clive, if the rim and the tyre have the load index to carry your caravan's GVM. Remember, this is divided by two – so if you want to put new tyres on your Tourer SW, they must each be able to carry a weight of at least 725 kg. You must also ensure the diameter of the rim and the tyre are the same as the standard tyre the caravan was issued with.

The reason for this is your caravan's brakes. They are set according to the specifications of the standard rim and tyre, and if you surpass this, you're asking for trouble. So never fit a larger rim while still using the same profile tyre as the standard. Always consider the overall diameter of the combination.

Clive suggests you chat to your local dealer and tell him about your plans to find out if they will work.

Another thing you need to consider when you want to fit new rims, is the position of



the centre point (where the wheel bolts go through). Clive says it must be the same as the caravan's original rim.

"If the centre point is further away from the undercarriage than the original, your tyre could be too close to the caravan. And if it is too close to the undercarriage your tyre will stick out beyond the wheel arch. And neither of these situations are good for your caravan or tyres."

KEEP THE WHEELS TURNING

Clive recommends you rotate your caravan's wheels at least once a month if it is stationary for long periods at home. Tyres that are stationary for long periods get smooth underneath – this is what causes the knocking sound when you tow for the first time in a long while. In terms of tyre pressure says Clive you must be guided by the recommendation above your caravan's wheel arch. "For road trailers it's usually around 2,5 bar, depending on how heavy the load is. The heavier the trailer, the closer to their maximum tyre pressure you need to pump them."

DID YOU KNOW?

Everyone knows the earth takes 365¼ days to revolve around the sun. But did you know during that year the earth moves through space at 108 000km/h on an orbit of 838 million kilometres?

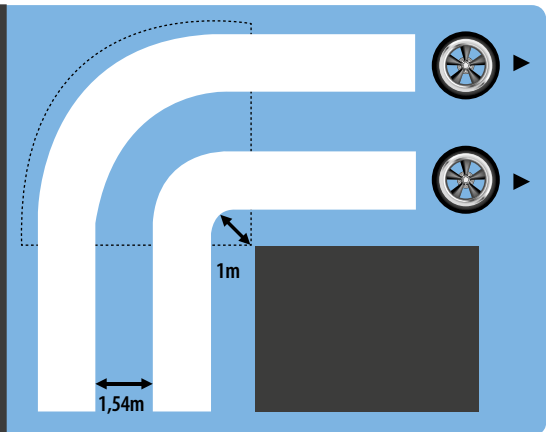
We didn't think so. Here are some other equations about your wheels to think about.

- **Round and round** The average caravan tyre Jurgens Ci uses, is a 195/80 R14 tyre. The tyre has a diameter of 66,7cm and circumference of 2,095m. So if you head to a weekend camping site that's 100 km away, each tyre has completed about 95 000 revolutions by the time you get back home. If someone from Pretoria goes camping at Yzerfontein on the West Coast and takes the shortest route (about 1 500km), the wheels would each have turned about 1,4 million times by the time you see the Union Buildings again!!

- **Choose the inside track.** A 2014 Toyota Fortuner's wheel track is 1,54m and it uses 265/65 R17 tyres. The tyres have a diameter of 77,6cm and a circumference of 2,44m. If you drove around the block along four straight roads and 90o turns

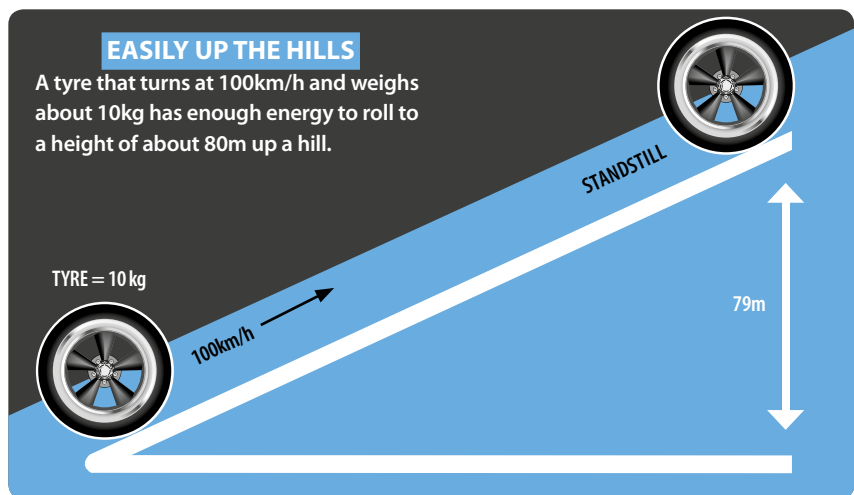
NOT SAME-SAME; DIFFERENT

When you drive clockwise around the block, the left-hand wheels take a longer route than the ones on the right. This means in the case of a 2014 Toyota Fortuner with a wheel alignment of 1,54m the wheels on the left have travelled double the distance around the same block.



EASILY UP THE HILLS

A tyre that turns at 100km/h and weighs about 10kg has enough energy to roll to a height of about 80m up a hill.



much more – and therefore travelled a longer distance – than those on the right-hand side. (We use the front tyres as the example, because the back tyres follow a shortcut behind the front tyres around a turn.) If you theoretically go around the corner with the right-hand tyre a metre from the corner, the right-hand tyre has travelled 1,57m on that corner and the left-hand one 3,99m. So if you therefore go around all four corners the left-hand tyres have travelled 15,96 m on the corners and the others 6,28m. if you consider the distance of all four corners, the Fortuner's outside front tyre has travelled just more than double the distance once you've gone around the block.

- **Keep up, dude.** When you tow a Venter Elite 6 trailer, the wheels complete many more revolutions over a specific distance than those of a towing vehicle such as the 2014 Ford Everest. The Venter has 155/80 R13 tyres (diameter 57,8cm and

circumference 1,816m) and the Everest 245/70 R16 tyres (diameter 74,9cm and circumference 2,353m). If you've travelled 100 km, the Venter's wheels have turned 55 000 times as opposed to the Everest's 42 000 times. For every time the Everest's wheel makes one revolution the Venter's wheel had to turn 1,3 times to cover the same distance. Therefore the Venter's wheels make 30% more revolutions than those of the Everest. So if you travel 100km/h and a distance of 1,67km in a minute, the Everest's wheels turn at 708 r.p.m. and the Venter's at 918 r.p.m. If you want to get even more technical: The total movement energy – due to the movement at 100km/h and the wheel rotation – is about 7 700 Joules. Now imagine the tyre gets detached from the wheel hub and runs along a stretch of road straight up into the sky. It will only come to a standstill at a height of 26 m – that is about 7 storeys!



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- Day 6:** Ngepi Camp: Visit Mahango Game Reserve
- Day 7:** Ngepi Camp: Visit Bwabwata National Park
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6 STAY ON COURSE...

Remember the days you only took to the road with a road map when you went camping? Well, those days are over – if you know how to use your GPS, that is.

Two decades ago mainly armies, pilots and seafarers used a Global Positioning System – or satellite navigation – to find their way. With the dawn of GPS for general use, internet tools such as Google Maps, and smartphones changed this picture.

If you do a few basic things right, you never have to get lost and pitch your tent in the dark again, says Johann Groenewald of Tracks4Africa in Stellenbosch.

YOU CAN WITHOUT GPS

Because most smartphones nowadays have Google Maps, you don't really need a GPS if you're only going to travel in the country, Johann says. "In the city I travel with Google. When I travel outside of the country and don't want to deplete my data package, I use our GPS maps. I actually feel like advising people to stay on Google Maps if they're only travelling between towns in the country. It works – even for some dirt roads. One of the biggest concerns with Google is that the driving times aren't accurate, but if you stay on main and secondary roads, they're not far off. Google Maps and Google Earth and free software like Garmin's BaseCamp that you can

download on your computer, are also handy tools to plan routes."

WHICH ONE?

The choice is between a general street navigator and a more expensive outdoor GPS, which is meant for travellers who want to take the back roads.

Street navigators

"The street navigator is built for urban navigation – it doesn't give you much more than Google does. If you're just looking for a GPS to get you from point A to point B, you can buy one of Garmin's Nüvi GPSes. (Nowadays you can buy one with street maps you can annually update for free. This is a huge bonus.) "These GPSes hide information from you for good reason. When you're driving in the city, there are way too many points to show on the screen.

The map is just simplified; the additional information is there if you want it on the GPS. If you want a bit more, you can upload maps with compatible Garmin-GPSes (like those of Tracks4Africa). "People think these are only for the 4x4 guys, but only about 15% of our data is for 4x4 roads – the rest are roads everyone can take. We specify points for travellers. We don't currently have all the street names for the little towns, but we can tell you where you can get petrol, camp, eat, shop and where to go in an emergency."

Outdoor GPSes

"Outdoor GPSes, like Garmin's Montana, also

hide information, but you can set it to show points. When you're driving in the middle of nowhere and there are only two roads and five points, it isn't necessary to have the simplified map on the screen. Many of those roads don't have names and we populate the name field with information to say it's a dirt, sand or tow-track road, and we give information on things like gates, motor gates and bridges. "Outdoor GPSes give information that street navigators don't. A street navigator won't show you overgrown road in Mozambique and you'll scratch your car. The outdoor GPS tells you this."

GET IT RIGHT

To get to your camp site problem-free with your GPS you need to do two important things: Ensure the GPS's settings are correct and ensure the coordinates for your destination are correct, Johann says. "Set your GPS for the fastest time and not the shortest route, and switch off the avoidances setting. Then you've already sorted out 90% of the problems."

The settings

"Almost all GPS maps are set up for the fastest time – to give you the largest, quickest and safest road. If you set yours for the shortest route, you're making a mistake. For example, if you're travelling from Cape Town to Upington, we all know the way: You take the N7. But if your GPS is set for the shortest route, it'll take you on the Tankwa-Karoo road and over Bainskloof. This may well be the shortest route, but not

the quickest. And you'll get flat tyres if you go that way.

"Another mistake people make, is to use the function to avoid certain places. Your GPS may take you all over the place because you fiddled with the settings to avoid main and dirt roads and then there aren't many options left. Don't think that little gadget is always 100% correct – it's only following orders," Johann says.

Where to now?

"The one problem with a GPS is that the map in your brain is lost, since you're not part of the navigation process. This is dangerous. In the city you can quickly correct this, but if you're in the middle of nowhere, you don't want to travel 50km in the wrong direction with little fuel. "If you've worked out a route on your GPS, make sure the line of your route looks like the right way, for example see if there's a mountain pass that's inaccessible for your caravan."

BE STRAIGHT TO THE POINT

That string of numbers indicating where a place is, remains problematic for many people since there are three formats for the same thing. And different people prefer different formats. For general navigation this isn't really an issue, Johan says. The most important thing is that you're able to distinguish between the different formats. You must know you get:

- Decimal degrees (hddd,dddd – indicated as d.d° on some street navigators)
- Degrees, decimal minutes (hddd mm,mmm or d°m.m')

- Degrees, minutes and decimal seconds (hddd mm s.ss of d°m's").

An example for decimal degrees is **S33.91129 E18.56942**. In degrees and decimal minutes it's written as **S33 54.677**

E18 34.165, and in degrees, minutes and decimal seconds as **S33 54 40.6 E18 34 09.9**.

"Guys use spreadsheets to convert one format to another, and a program like Garmin's BaseCamp has settings for the format of your choice. You can also do the calculation to convert one format to another, although GPSes can handle all the formats. Input the format the camping site gives you, even if it isn't your preference – afterwards you can reset your GPS to the format of your choice, and then the GPS will convert it into the format you like."

It's important to know the coordinates the camping site gave you is the correct one. Sometime people don't specify the format, or don't even know what the format is, and that's when mistakes can creep in.

"If someone gives you the coordinates for Hartenbos and doesn't specify the format, make double sure. Check it on Google Maps or BaseCamp to see if that point is indeed Hartenbos. If it's outside the town, you'll know there is a mistake."

DO THE MATH

If you really want to, you can do the math to convert from one format to another.

- **Decimal degrees to degrees and decimal minutes**

To convert the decimal degrees S33.91129 E18.56942: Keep the S33; multiply the

.91129 with 60 (54.6774); also keep the E18 and multiply the .56942 with 60 (34.1652). The degrees and decimal minutes then read like this: S33 54.677

E18 34.165. If you want to reverse the process and convert from degrees and decimal minutes to decimal degrees, you divide the 54.677 and 34.165 respectively by 60.

- **Decimal degrees to degrees, minutes and decimal seconds**

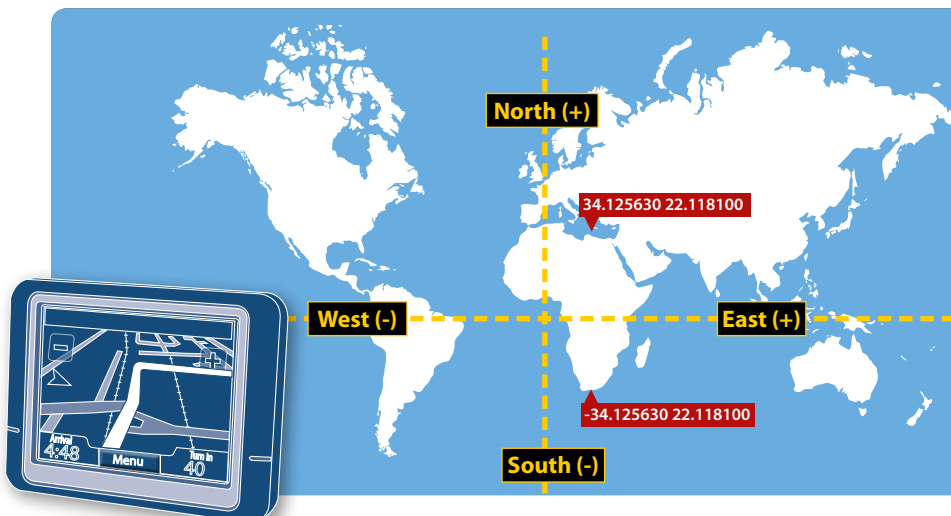
If you want to convert the decimal degrees S33.91129 E18.56942: Keep the S33, multiply the decimal .91129 with 60 (54.6774); keep the whole number 54 (minutes) and multiply the remaining decimal .6774 with 60 for the seconds (40.6); also keep the E18, multiply the .56942 with 60 (34.1652), keep the 34 and multiply the .1652 with 60 for the seconds (9.9). From this you can get the correct degrees, minutes and decimal seconds: S33 54 40.6 E18 34 09.9.

- **Degrees and decimal minutes to degrees, minutes and decimal seconds**

If you want to convert the degrees and decimal minutes

S33 54.677 E18 34.165 to degrees, minutes and decimal seconds: Keep the S33 and the 54 and multiply the .677 with 60 (40.62); keep the E18 and the 34 and multiply the .165 with 60 (9.9). The degrees, minutes and seconds are S33 54 40.6 E18 34 09.9. to convert back to degrees and decimal minutes you divide the 40.6 and 9.9 respectively by 60. Is this all too much for you? Let the GPS do the work for you!

go! Drive & Camp says Once you start enjoying it, navigation becomes a fascinating hobby.



REMEMBER THE MINUS

Some sources give you the coordinates without the S in front of the latitude and the E in front of the longitude, but replace the S with a minus sign (-). A minus is used for locations south of the equator and west of the meridian. If you leave out the minus sign for Hartenbos (-34.125630 22.118100), you'll end up in Mediterranean Sea.



On the open road

What is the difference in towing capacity between a diesel and petrol engine?
What is the best gear to tow in, how do you prevent trailer sway, do you know how to properly set your car's rear-view mirrors, and what is a safe towing speed?

1 LET'S TORQUE IT THROUGH

Everybody knows that when you say "Break a leg," you don't mean it literally. And every caravanner knows that the more torque your vehicle produces, the better its towing capability will be. If you want to know exactly how hot or cold it is outside, you use a thermometer, so if you want to know how much torque your vehicle can generate, you have to know how many Newton meters it delivers.

Newton meter is a standard unit used to measure torque. The formula states that torque is equal to 1 N being exercised at a right angle on an arm of 1m in length.

You cannot simply use an engine's capacity as a yardstick. There are 1.6-litre engines that put certain 2.5 litres to shame, and diesel engines almost always have more torque than petrol engines of the same

capacity or less. Why is this so?

RECIPROCATATION NATION

Let's start at the beginning: Diesel and petrol engines are both internal combustion engines and work on similar principles. An internal combustion engine is based on a four-stroke system that works as follows:

1 Breathe in When a piston moves from its apex position to the bottom, it draws air into its chamber.

2 Press The piston rises to the top of the chamber again and compresses the air.

3 Watch out! The compressed air/fuel mixture ignites and the force presses the piston down again.

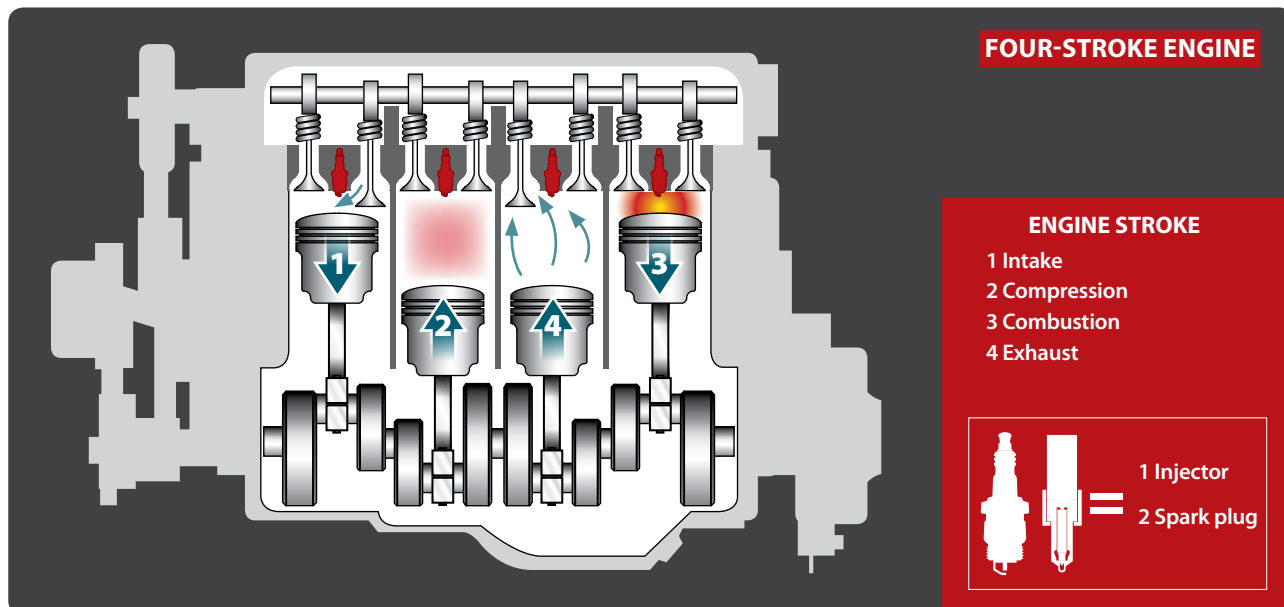
4 Breathe out The piston rises up the chamber again and the spent air is expelled through the exhaust manifold.

The difference between a petrol and a diesel engine lies in the explosion at stages 1 and 2. In a petrol engine, the air that is initially sucked into the cylinder is a mixture

of air and vaporised petrol. After the mix is compressed in the second stroke, it's ignited by a spark plug. In a diesel engine, the air that is sucked in during the first stroke is clean air, which then gets compressed during the second stroke. At this point, an injector shoots diesel into this high pressure environment, and due to the pressure and the chemical characteristics of the diesel, it explodes spontaneously without the need for an electric spark. *(Like your wife when you forget your wedding anniversary – Ed).*

PRIMED FOR LOCOMOTION

Each piston is attached to the crank shaft by a rod and a bearing. When viewed from the side, the crank shaft has a zigzag shape, with a piston attached to each point of this up-and-down shape. When you turn the shaft, the points orbit a central point. It is this rotation of the crank shaft that causes the pistons to move up and down inside the cylinders. The distance from the point



where the piston's rod attaches to the crank shaft and the crank shaft's central pivot determines how much torque the engine can deliver. In other words: The larger the arc in the crankshaft, the more potential torque. This arc works like a lever.

To understand it better, picture lifting your vehicle with a jack. The longer the lever on the jack that you use to pump up and down, the easier it is to lift your vehicle, and therefore the more torque you have.

One of the more distinct characteristics of a diesel engine is that it has a longer suction stroke than a petrol engine. Put differently, the pistons in a diesel engine moves up and down over a longer distance in its chambers than those in a petrol engine.

The distance from the crank shaft's zigzag points (as explained before) is also the reason why diesel engines rotate at fewer revolutions per minute than petrol engines.

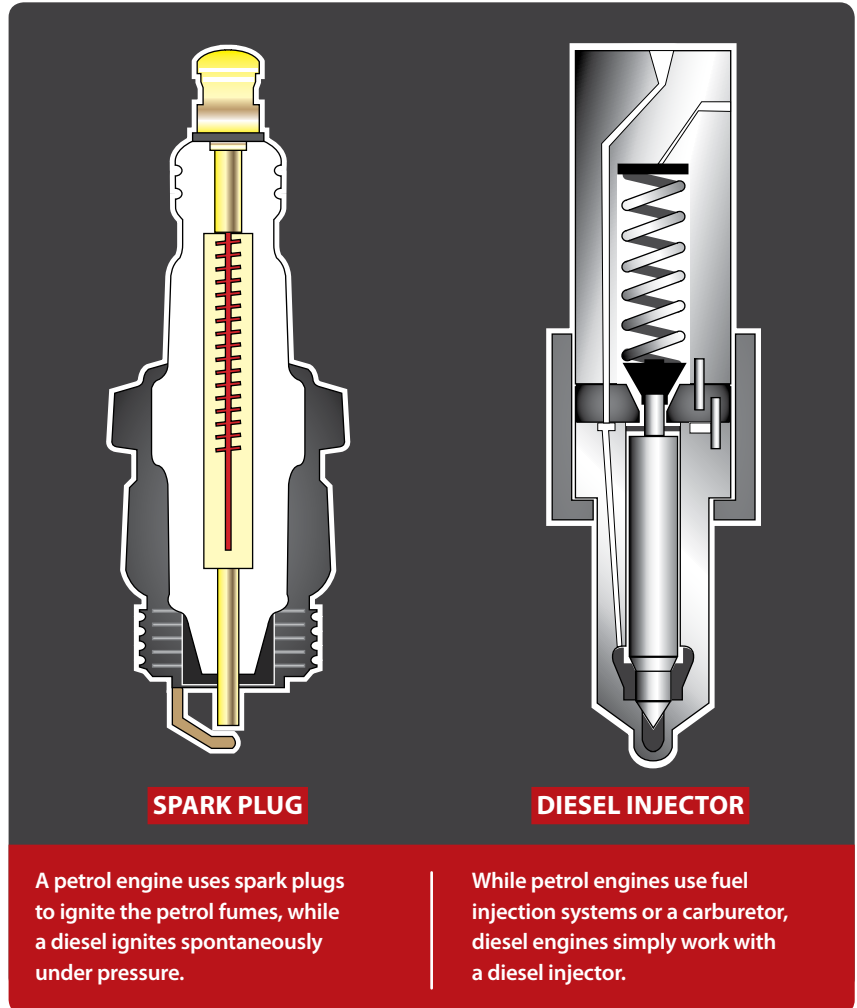
The shorter this distance, the shorter the stroke distance of the piston, which in practical terms mean that the engine can rotate much faster.

This rotation is expressed in revolutions per minute, or rpm. In an engine that rotates faster (like a petrol engine) you therefore sacrifice torque, but because the engine can rotate faster, with more revolutions per minute, it produces more power, measured in kilowatt (kW) which enables you to drive faster.

OTHER FACTORS

Apart from producing more torque, diesel engines also have other incidental advantages that inadvertently contribute to them being more frugal than petrol engines.

- **Same, but different.** The difference between the two types of fuel starts with their unique characteristics. Both are made from crude oil through a refining process, but petrol is refined a lot more than diesel. Because diesel is less refined, it is more viscous compared to the more flammable petrol. Diesel used to be cheaper than petrol in the past because of the fact that its refining process requires less energy. Since 2004, the tables have turned, however, because the worldwide demand for diesel is has increased. It's also true that the quality of crude oil has changed, and today the refining process of diesel requires more energy than in the past.



- **Diesel has more kick.** Diesel has a higher energy density: 1 litre of diesel contains a lot more energy – 40,1 MJ (mega joule) compared to 34,7 MJ in petrol. It's also one of the reasons why fuel consumed by a diesel engine is less than that of an equivalent petrol. You need less diesel as you would petrol to cover the same distance.

- **Under pressure.** The pressure in a chamber at the second stroke differs markedly in the two engine. When the piston in the petrol engine compresses the air-and-fuel mixture, the initial volume in the chamber becomes 8 to 12 times less, while the pressure in the diesel engine is much higher. It can be 14 to 25 times less than the original volume. The diesel engine therefore has a higher combustion point, which leads to a higher torque output.

- **Lost energy.** In diesel engines, about a third of the heat energy of the combustion process is transferred to the crank shaft,

while in petrol engines it's up to 25%. This kinetic energy eventually gets transferred to the driven wheels, but some of the energy gets lost due to friction among the engine parts and the drag coefficient of the vehicle. In theory, only a quarter of the diesel fuel's original energy is used to propel the vehicle. That figure falls to almost a fifth in petrol-driven vehicles.

go! Drive & Camp says Diesel engines release less toxic gasses such as carbon monoxide and carbon dioxide, so they impact the environment less negatively. The downside is that these engines release a large amount of nitrogen-containing pollutants, which contribute to acid rain, among other things.

Internet sources: Wikipedia, Howstuffworks, Rjmason, Bankspower, Open.Edu, Wentec

2 CHANGE OF GEAR

What is best for towing: a manual or automatic gearbox? And is it true that you should never tow in fifth gear? There are a few unwritten rules around a campfire: you never, for example, tell a man what rugby team he should support or what car he ought to buy. And if you like your friends (and your front teeth), you will also never start a debate regarding automatic versus manual transmission – nor one about towing in fifth gear.

THE TORQUE CURVE

Towing is not merely a matter of pushing the accelerator to its limit in order to just get going. Even before you jump into the car, there is some necessary homework to do: consider the torque curve of your towing vehicle. If you fail to find the curve in the owner's manual of the vehicle,

then pay a quick visit to the internet and search for it there. Should you refer to torque, you need to know at what revolutions (r.p.m) the engine of your car functions optimally. For this purpose, you get a generic torque curve that resembles an arch.

Always try to tow in such a way that the performance of the engine falls in the top 20% of this curve. It is also in this percentage section that the engine runs cooler and more economically. In the remaining 80% of this curve, the engine labours in some way or another, whether it is during acceleration or because the revs are too high or too low. (By the way, when not towing, you should look at the upper 30% of the curve).

WHAT ABOUT FIFTH?

When you look at a five-speed gearbox, the fourth gear is often the one with a 1:1 gear ratio (or closest to it). In other words, the gearbox might just as well not have been

there at all, since the rpms of the gearbox and the driver shaft are the same.

For some unknown reason, there is a myth that purports it is not a good idea for the gearbox to tow in fifth. However, there is no logical reason whatsoever for thinking along these lines. The fifth gear cannot simply break. A gear breaks when it has to work without oil and therefore overheats.

The fifth-gear myth probably originated in the seventies and early eighties when regular family cars were fitted with only four gears. At the time, fourth gear was also the 1:1 gear and was the one that you selected for towing. Subsequently, a fifth gear was added – the gear was known as the over-drive. (From first to third, the engine revs were more than that of the drive shaft. In fourth, it was the same, but in fifth, the drive shaft rotated faster than the engine – hence the name. Fifth gear was not intended to be a powerful gear but rather one to let your vehicle drive more economically.

CHANGE GEARS SMOOTHLY

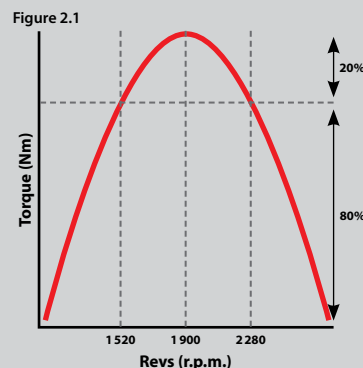
You don't need to be a mechanical engineer to understand that you should shift the gears as smoothly as possible while accelerating to cruising speed. Keep in mind that Lewis Hamilton's fuel is sponsored. Driving like him may perhaps classify you as a good driver, but it will never be economical.

So it's important to know how high your engine can rev before you shift gears in order not to damage the gearbox. This is where doing your homework comes in.

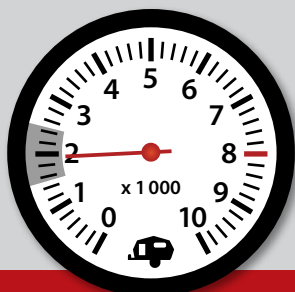
Take a diesel engine of which the

optimal torque, for argument's sake, is reached at 1900. The top 20% of the torque curve will therefore be between 1520 r.p.m and 2280 r.p.m. You therefore have to paddle that gear lever like a row boat to keep the revs within these parameters.

When the revs drop as low as 1520 r.p.m, it's time to shift down and when they reach 2280 r.p.m, you must select a higher gear. Continue like this until you reach the desired speed – regardless of which gear you are in.



Headwind. When towing, aim to keep your vehicle's revs in the upper 20% of its torque curve. In this case, between 1520 r.p.m and 2280 r.p.m.



Just right. If the specifications on your vehicle state that optimal torque is produced at 1900 r.p.m, this is where you get the best power.



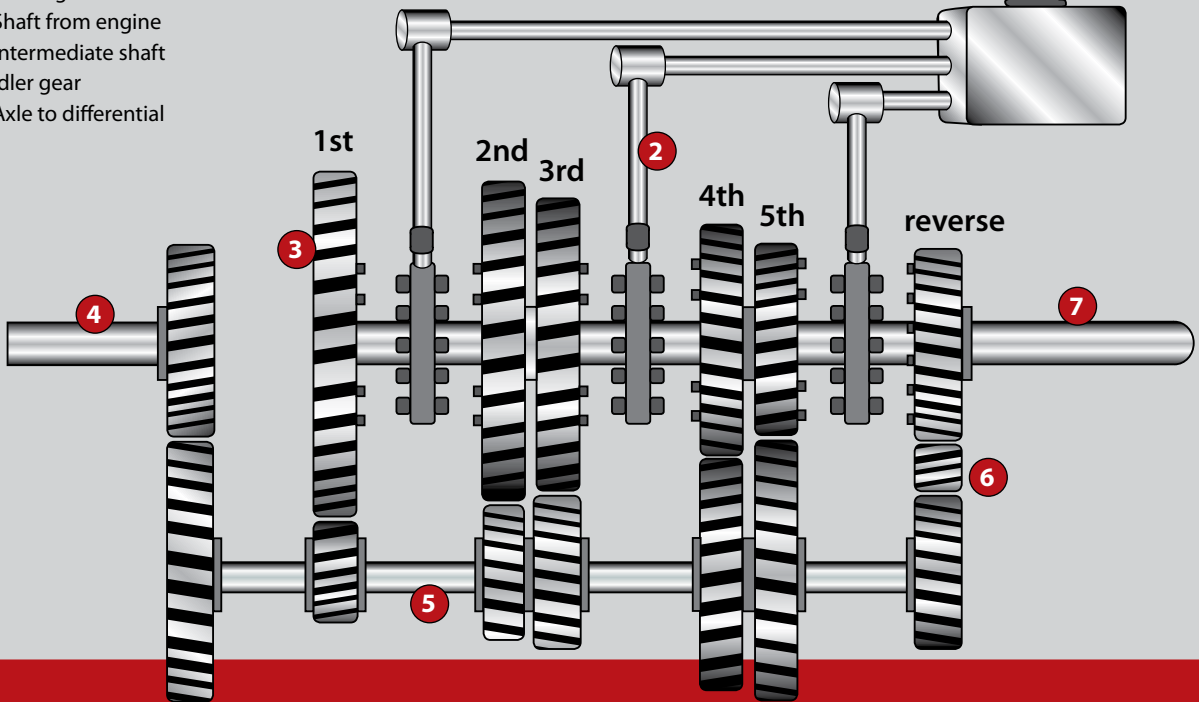
Aim higher. When the rev counter drops to below 20% of the curve, it's time to select a lower gear.



Aim lower. When the revs start to exceed the top end of the curve, the engine is labouring unnecessarily.

THE INSIDE OF A GEARBOX LOOKS LIKE THIS

- 1 – Gear lever
- 2 – Collar
- 3 – Lower gears
- 4 – Shaft from engine
- 5 – Intermediate shaft
- 6 – Idler gear
- 7 – Axle to differential



Modern-day engines however, are so far advanced and so powerful that your vehicle can easily tow in fifth. In some of the six-gear boxes, fifth can be the 1:1 gear, but it is no longer a given that a gearbox has a 1:1 gear. It may be that the ratio of any gear is slightly higher or lower.

AUTO BOXES

In principle, an automatic and a manual gearbox work exactly the same. Except for you having to step on a clutch with a manual transmission (an automatic gearbox has a mechanism inside it that does exactly the same job), the gears are identical. Some manufacturers actually recommend using an automatic gearbox when you want to tow anything heavy. An automatic gearbox also helps inexperienced towers to concentrate on their driving since they don't have to worry about changing gears.

GOING DOWNHILL

Going downhill is fine for coasting, but remain in gear. People err by selecting lower gears when going down a steep hill. Wear and tear on the gearbox is then the same as

when you're accelerating. Rather use the brakes to control your speed. That's what they're there for, after all. Keep the engine revs within the 20% zone when going downhill and, should the going get steeper, reduce speed by applying more brakes and gearing down systematically. Do not take the car out of gear when going downhill. A vehicle weighing 2 tons accelerates faster than a racing car over a distance of 100 m and at a slope of 30°.

If there's an uphill stretch after the downhill, you'll want to select the lower gear at the right time to climb the hill. Shift down at the bottom of the hill so that you reach the maximum revs in the 20% zone of the torque curve (for instance 2280 r.p.m in the previous example). As you lose speed while ascending the hill, keep gearing down according to the 20% principle.

CHOOSE THE SAME TYRES

The size of the tyres on your vehicle has an immediate effect on the gear ratio of the gearbox relative to the speed at which you are driving.

When replacing tyres, it is important to

keep the circumference of the new tyres within 10% of the original measurements. (It is best to stick to the original dimensions as the manufacturer intended.)

If, for example, you change from a 17" rim to an 18" one and the 17" tyre had a 75 mm profile, you will now have to fit a 60 mm profile tyre on the 18" rim. Some manufacturers' warranty becomes void if you fit tyres exceed their specifications and even some insurance companies will refuse to honour your claim if anything goes wrong because of this.

STAY COOL

Remember, not all cars are designed for towing. When you tow, there's an additional burden on the gearbox, which can cause it to operate at higher temperatures. It is good for the oil and the gearbox if the oil remains cool. If you suspect that your gearbox is overheating, you can always consider fitting an oil cooler.

It's also important to remember that oil ages. If you often tow a caravan, you should to replace the gearbox oil every 5000 km.

3 TOWING 101

There are videos on YouTube showing how swaying caravans get so badly out of control that they not only topple over, but cause its towing vehicle to crash too. It's one thing if there are no injuries or loss of life, but the news archives are filled with stories about holidays ending tragically due to incidents like these.

go! Drive & Camp readers who narrowly escaped swaying accidents report that you really don't want to be in a towing vehicle when a caravan starts to sway uncontrollably. Johan Naudé from Newcastle wrote on our Facebook page: "It is terrifying... your towing vehicle is yanked around and the rear wheels lift up."

Jan Kruger from Mossel Bay says he was once en route to the Kruger National Park when he experienced such a harrowing ordeal: "It was a case of the tail wagging the dog... All you can do is to lower your speed, try to keep your combination in the right direction and try to get it stable. I ended up in this situation because my caravan's tyre pressure was too low. Since then, I tow with caravan tyres that are inflated with nitrogen – in summer to 3 bar and in winter 3,5 bar. It works for me."

Johan says that after this incident, he changed towing vehicles. His car was too weak for his caravan. "The power and weight of the towing vehicle has a huge impact on stability."

NEVER BRAKE

What should you do if your caravan starts swaying wildly and yanks your vehicle around?

The caravan and towing experts Hans Koekemoer from Pretoria and Pieter Crous from Cape Town say that Jan did the right thing by lowering his speed and trying everything possible to stabilise his towing combination.

Some people recommend that you should gear down and then accelerate if your caravan starts swaying wildly – but that's the worst advice possible. You should also not brake – it's a death sentence.

Hans says: "Do *not* brake. Take your feet off those pedals, grip the steering wheel and focus on staying on course. Let the vehicle lose speed on its own."

Pieter confirms this: "Let go of the pedals. Do not brake. Do not accelerate. And maintain control. There isn't much more that you can do. I speak from experience – this has happened to me."

"The only time that you should accelerate a little bit, is if this happens on a rather steep uphill stretch. If it's downhill, you can brake a little bit – but only a little bit. You should definitely not hit the brakes hard in a situation like this."

DO IT RIGHT

The two towing experts say that by doing a few things right from the start, you can prevent a swaying dilemma from occurring in the first place.

LOCK AND LOAD

If you pack your caravan correctly and the load is distributed proportionally, chances are slim that it will get out of control, says Pieter. "Incorrect loading is probably the main cause for swaying incidents. The problem is that people who tow, load too much weight at the back of the caravan."

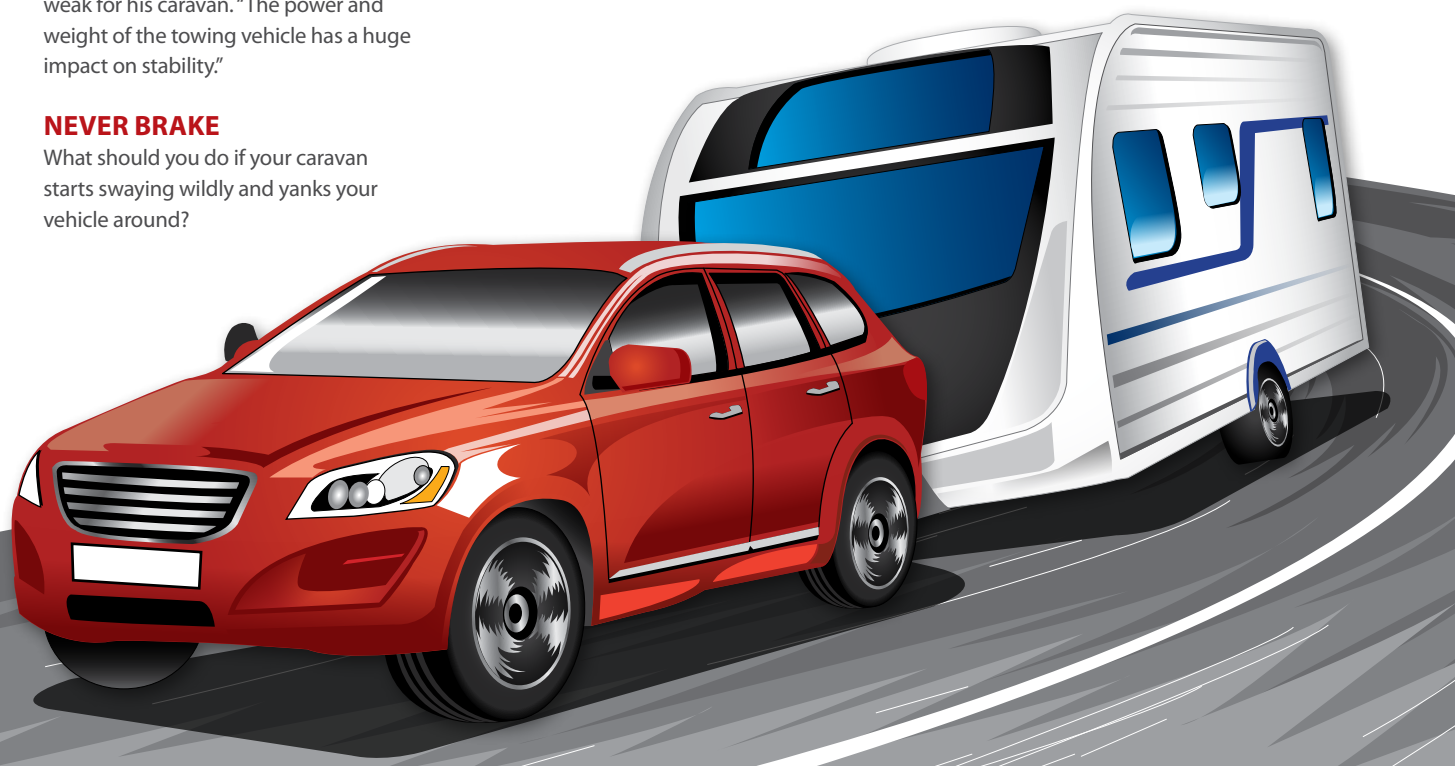
Hans agrees. He says the secret of packing a caravan is to remember that the nose weight is the stability weight and the tail weight is the swerve weight. "If you load too much in the tail side, you'll get a pendulum effect. You start from the axle, loading heavier to the front and your nose weight should preferably be around 70 kg. The closer you can get to 100-110 kg, the better."

"When your caravan is hitched, the nose should point slightly upwards, but once you pull away, it should stand in line with your vehicle. People also make the mistake of packing everything at the back of the caravan when they see the nose is pointing downwards, which leads to van swaying on the road."

THE PRESSURE'S ON

Hans and Pieter say Jan was right to go for 3 bar on his caravan tyres. They do the same and it works.

Tyre pressure that's too low is one of the major causes of caravans that start swaying wildly.



Hans says that modern-day soft-wall tyres absorb some of the shock and transfers weight with sideward sways. But if your tyres aren't properly inflated, these sways are too much and it will cause your caravan to swerve. By opting for 3 bar, you minimise these swaying movements. Also ensure one tyre's pressure isn't higher than the other. Such unevenness can also lead to swaying incidents.

Fitting bakkie tyres with hard sidewalls to your caravan for more stability, but then towing it with a vehicle that has low-profile tyres or ones with softer sidewalls, is a mistake. Too much of the rolling motion of the vehicle will then get transferred to the caravan.

Johannes Knipe, the caravan doctor from Cape Town, says that caravan tyres that aren't inflated enough are more likely to burst. That also applies to tyres that still look new because they're not used often, but are actually already kaput. Losing a caravan is a high price to pay for basic negligence.

PAMPER THE BRAKES

Hans says it's a big mistake not to regularly check the brakes of your caravan and towing vehicle.

"If the brakes haven't been adjusted correctly, the brake pads don't apply equal force on all sides, which will cause your caravan to sway. Roadworthiness is incredibly important."

WHAT ABOUT A STABILISER?

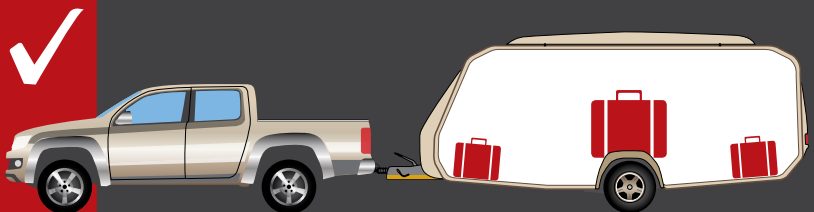
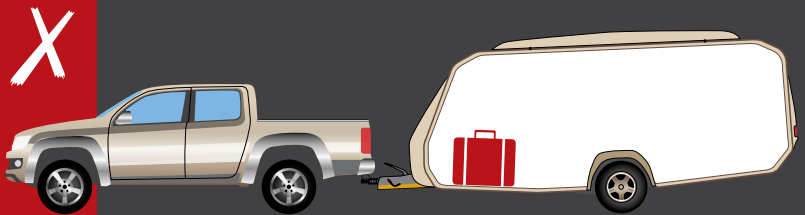
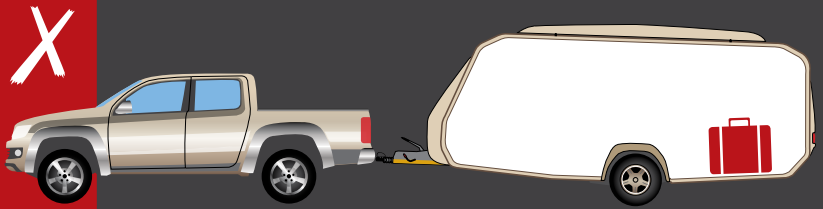
Hans says modern-day caravans are built in such a way that they no longer require stabilisers.

"A stabiliser isn't the alpha and the omega of safe towing, although it does help with the weight distribution and to make your towing combination more stable."

BEWARE THE SUCTION

One thing you should never do is to overtake a truck while going downhill at speed, says Hans. "That suction force that you experience when you overtake a truck is stronger on a downhill. That's when people who tow make mistakes. As soon as they feel they're being pulled closer by the force, they try to rectify it, and the caravan starts to sway on the downhill." It is however safe to overtake while going uphill, he says.

BALANCE IS KEY



DON'T BE A SPEED FREAK

"It's probably the most important thing about towing," says Hans. "Don't race. It's almost always best to not tow faster than 110 km/h, and then only when it's on the open road and conditions allow it."

"I don't need to tell anyone with experience in towing how rough crosswinds can

make a caravan sway. You can't go barrel-liding down the highway at 140 km while towing a caravan. If you encounter a strong crosswind at that speed, it only spells trouble."

go! Drive & Camp says Tow properly, safely and – especially – enjoyably.

4 REAR-VIEW MIRRORS

The use of rear-view mirrors is part and parcel of towing in the same way that sunshine is synonymous with a seaside holiday. When you ride a bicycle, it may be best to keep a beady eye on the road ahead, but when you're towing a ton behind you, you need to see what's happening both in front and behind you. When you do the K53 test, you have to look into the mirrors after virtually every second driving action. With a large caravan or trailer of any kind, your rear-view mirror is virtually useless and your side mirrors are of little value without towing mirrors.

THIS IS A MUST

Currently, new vehicles must meet a specific standard of the SABS as far as rear-view mirrors are concerned. This applies to both interior and exterior mirrors. The standard is not specific in respect of the size of the mirrors. It becomes a technical point since it is rather about what you can see behind you.

Also of importance is the measure of distortion that a rear-view mirror can cause: no rear-view mirror must change the picture drastically or completely. We do know, however, that there is a warning on some mirrors stating that objects in the rear-view mirror may seem to be farther away or appear closer than they actually are from your vehicle.

Modern mirrors – so-called blind-spot mirrors – take things a step further with regard to rearward visibility by showing a section that isn't normally in view.

K53 ANTICS

The K53 test involves dozens of "observations" that require you to keep an eye on the rear-view mirrors all the time. You are required to fully adjust the rear-view mirrors before you drive away. Once you're on your way, you have to look in the mirrors every five to eight seconds.

Furthermore, you have to look in the rear-view mirrors before performing any action, such as gearing down, stopping in traffic, parking or driving through an intersection. The use of mirrors is a critical part

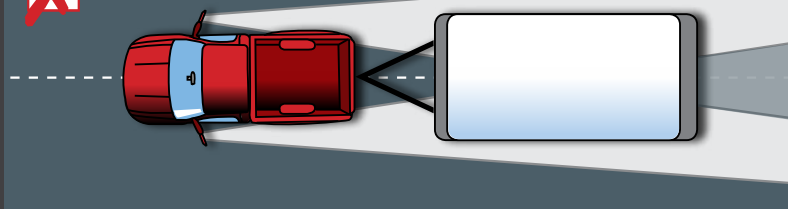
GET YOUR EYE ON THE BALL

Start by adjusting the car's ordinary rear-view mirrors before you hit the road, so that you can clearly see what's happening behind you. (Don't adjust the mirrors while driving.) Adjust all three rear-view mirrors – the ones on the right and left side as well as the one in the middle – so that you have the widest possible view to the back

and still limit the blind spots to a minimum. Adjust the side mirrors so that you can barely see the coachwork. If you can see quite a bit of the caravan (or yourself!) in the side mirrors, they're angled too far inward, creating huge blind spots on both sides of your car. The entire rear window must be visible in the inside rear-view mirror.



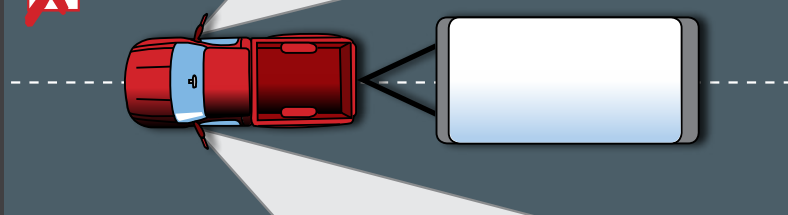
Too narrow



If you can see a large section of your vehicle and caravan's coachwork in your rear-view mirrors, the mirrors have been angled too far inward and you're going to have large blind spots in your rear view.



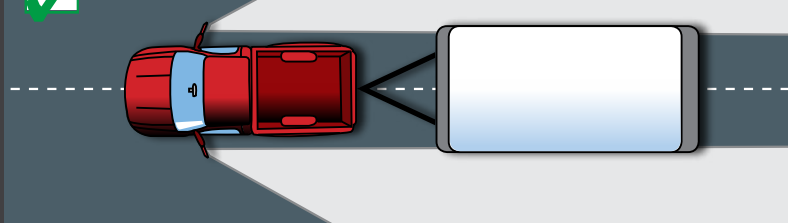
Too wide



If your rear-view mirrors are angled too far outward so that you cannot see any of the vehicle or caravan's coachwork, the mirrors are adjusted too wide.



Correct



Adjust the rear-view mirrors so that you can only just not see the coachwork of your vehicle – only the sides of the caravan. Any blind spots are now minimal.

of driving. Say, for argument's sake, you're towing in the city for an hour, and in that time you have to look in your rear-view mirrors about 554 times – according to the five-to-eight-seconds principle.

Suppose this is a continuous trip without you having time to stop, and that it takes a second to look in the three rear-view mirrors each time. You will have spent almost half an hour – a full 28 minutes – on looking back!

HOW BLIND CAN THAT SPOT BE?

With the mirrors properly adjusted, you shouldn't have much of a blind spot. A simple test is to sit in your parked car and look in the rear view mirrors while someone walks around the car. Take note of when and where you cannot see him or her in the mirrors. The two most probable blind spots are on either side of the back of the car – right at the corners and almost vertical to the sides. An effective way to get rid of these spots is to fit some of those small blind-spot mirrors onto the existing mirrors. You can get them from any Midas store. In new cars, the blind-spot function is often incorporated in the mirrors.

WHERE DO THE TOWING MIRRORS FIT IN?

By law, your car must be fitted with rear-view mirrors that offer an unobstructed view of traffic behind you in "fair weather" conditions. Furthermore, legally, if what you are towing is wider than your towing vehicle, you must fit towing mirrors. People are quite often fined for transgressions in this regard.

If you calculate the average width of three sedans such as a Mercedes-Benz C200, a Subaru Outback and the previous model Volkswagen Jetta, you'll get to 1,79 m. The average width of three caravans – the Jurgens Exclusive, Sprite Splash and Gypsy Romany – is 2,22 m. You could therefore justly say that the average sedan towing vehicle is about 22 cm narrower than the average caravan. You will therefore need to fit towing mirrors.

The average width of bigger bakkies such as the older Toyota Hilux, Nissan Navara and Ford Ranger is 1,95 m. Bush caravans such as the Conqueror Commander, Echo Kavango or Imagine Comfortline are about just as wide. Legal all the way. (However, if these

bakkies tow a road caravan, towing mirrors are still required.)

The general rule of thumb is: The bigger your rear-view mirrors in relation to the area that they cover, the better. A useful calculation states that for every 3 m that your towing combination is long, your mirror should be 2,5 cm in diameter. A 15 m combination would therefore require a mirror diameter of 12,5 cm.

If you use towing mirrors in addition to your ordinary external rear-view mirrors, you will certainly be able to see well enough behind you. And this includes keeping an eye on the wheels of your caravan as well.

REVERSE DILEMMA

When you can reverse your vehicle by relying on the rear-view mirrors only – without Mom having to impersonate a windmill behind your caravan – then you pass towing on higher grade. Here are a few tips for those who don't yet know the ropes:

First, do a recce. Before you start to reverse, first walk to the space into which you wish to reverse so you can take note of any taps, holes or low branches.

Other right. When you reverse, everything works the opposite way. If you turn the steering from top centre to the right, the back of the vehicle will turn to the right, but the caravan will go to the left.

It takes a while to get used to this and you will have to practice it a few times on a

quiet stretch of road before you get the hang of it.

Let the caravan disappear. An easy rule for reversing straight: If you can see your caravan in a side-mirror, turn the steering in the direction of that same mirror and the caravan will return to a straight line.

Hand signs, please. If you reverse with the help of an assistant, he should stand where you can clearly see him in the rear-view mirror on a particular side. It's better for him to point in the direction in which you must reverse than shouting "left" or "right" from way back there. It can be confusing to figure out whether you must turn right or reverse to the right.

DO AS LOT'S WIFE...

Mirrors make things easier, especially when towing, but never solely rely on what you can see in the mirror. Even though you may have made certain that you have a clear view right around your vehicle combo, smaller vehicles such as motorbikes may lie hidden outside the scope of your mirrors.

Glimpse briefly over your shoulder just to make sure one last time. Remember that the vision in a mirror is two-dimensional. Looking back keeps you in check while aiming ahead.

Internet sources: Wikipedia, Smart-motorist, Howstuffworks, Wikihow, Website-repairguy.



5 TOWING SPEED

There are those who brag about the way they let fly while towing a caravan, but if you're towing too fast and things go wrong, there will be hell to pay.

It's inconvenient to lumber along to your holiday destination. You want your camp set up by early afternoon, but when towing a vehicle it is undeniably more dangerous to drive at 120 km/h, especially when the road has bends, when you try to avoid a pothole or when you need to brake sharply. The momentum of a caravan, which in this case pushes your car from behind, or may even pull it to one side, can have disastrous results.

Geoff Elske, former general manager of the AA, reckons that the safest towing speed is 90-100 km/h. This may perhaps

seem tedious, but as Geoff says, it's petrifying to see how some caravanners speed at 120 km/h.

"There are quite a number of questions the driver of a towing vehicle must ask him- or herself before hitting the road – things such as whether the caravan is loaded correctly and whether basic components of both vehicles are functioning as they should.

Also remember that a towing combination never handles as easily as a vehicle on its own. This is why it's advisable to double your following distance when towing. Instead of applying the two-second rule, make it four seconds so that there is sufficient space between you and the vehicle ahead if you suddenly need to brake hard."

HERE'S THE EVIDENCE

It is astounding and insightful to see the big

difference that a little less speed makes with regard to your towing combination and your ability to brake.

Prof. Francois Smit and Dr. Marè Cloete of the University of Stellenbosch's Department of Applied Mathematics made a few sums on their pocket calculators to demonstrate the distances needed to stop a typical towing combination in its tracks at different speeds.

For the purpose of this exercise, we used a double-cab bakkie with a tare of 1 900 kg, luggage weighing 200 kg, two occupants weighing 100 kg each (*either you or your brother in law will have to follow a strict diet. – Ed.*), and a half-filled fuel tank of 40 kg (thus altogether 2 340 kg) towing a caravan with a tare of 1 120 kg and 100 kg of luggage inside (altogether making up 1 220 kg). Your reaction time is between 0,6 s and 1 s; so we'll work with an average of 0,8 s.

TOWING SPEED AND DISTANCE

SCENARIO 1 – EMERGENCY STOP ON A LEVEL STRETCH OF TARRED ROAD

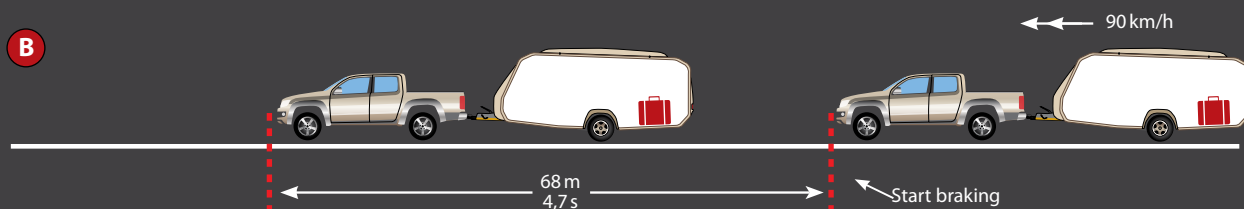
Gently applying brakes intermittently and gearing down carefully must surely be the safest way to bring a towing

combination to a halt. It prevents the caravan from jack-knifing. However, when a kudu suddenly appears out of

the blue or if that lorry that has just overtaken you loses its load, there's nothing you can do but hit the brakes.



If the towing combination is moving along on a straight and level road at 120 km/h and you have to stop unexpectedly, it will take 6 seconds (including the 0,8 second reaction time) to come to a complete halt over a distance of 113 m. This implies that the wheels of the bakkie keep rolling and do not start to skid. If the wheels do lose their grip and skid – which can happen if the bakkie doesn't have an ABS (anti-lock braking system) – it will take 8 seconds and almost 150 m to stop.



If the bakkie towed at 30 km/h less (at 90 km/h), it would still take the driver 4,7 seconds to stop the combination, but over a considerably shorter distance of about 68 m. And if the wheels lose their grip, the driver could stop after 6,2 seconds within 90 m.

SCENARIO 2 – EMERGENCY STOP WHILE GOING DOWNHILL

Once you get to the top of a mountain pass, it's advisable to select a lower gear for the downhill section. This not only automatically prevents you from speeding, but you also don't have to brake as hard and as often to slow the vehicle down or control the towing combination.

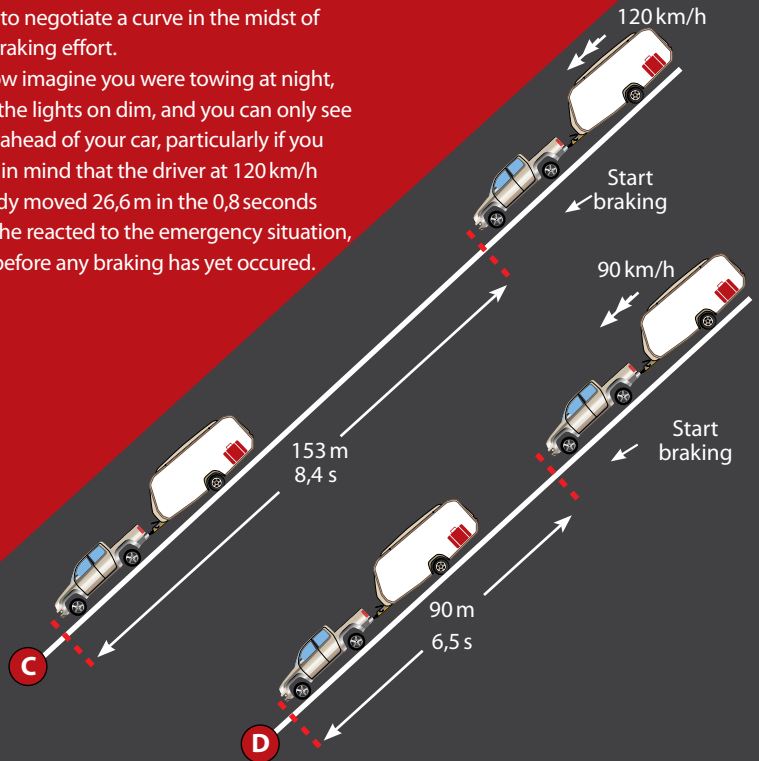
These calculations were made assuming the caravan remains neatly in line with the bakkie without any swaying. However, the caravan can easily roll at such high speeds,

especially if the wheels of the bakkie should hit the edge of the road surface, or if you have to negotiate a curve in the midst of the braking effort.

Now imagine you were towing at night, with the lights on dim, and you can only see 45 m ahead of your car, particularly if you keep in mind that the driver at 120 km/h already moved 26,6 m in the 0,8 seconds after he reacted to the emergency situation, and before any braking has yet occurred.

C If a bakkie and caravan come speeding down a mountain pass with a gradient of 20% (11,3°) at 120 km/h, it will require 8,4 seconds in 153 m for the combination to come to a standstill. Should the tyres lose grip, the time and distance doubles to 13,5 seconds and 238 m.

D At 90 km/h, it still takes 6,5 seconds to stop a bakkie and its caravan, but the distance shrinks to 90 m. With skidding wheels, it will require 140 m and 10,3 seconds to reach a complete stop.



6 CAN YOU TOW AND DODGE?

What's to be done if that kudu remains defiant, regardless of how hard you are braking and hooting? Either you are going to hit it or you will have to swerve.

Surely all of us know that the slower you drive, the more control you have over your towing combination... but Francois and Marèt demonstrates empirically with a simple calculation how a slower towing speed can make an observable difference when a driver suddenly has to reduce the speed of his towing combination in order to swerve.

For the purpose of this exercise, let's assume that you're driving a double-cab bakkie with a tare weight of 1 900 kg, luggage that weighs 300 kg, two occupants weighing 100 kg each, and a half-filled fuel tank of 40 kg (this comes to a total of 2 340 kg): In the first test, we hitch a trailer without run-in brakes. The trailer has a tare of 360 kg and it's carrying a load of 390 kg (giving a total of 750 kg).

If this towing combination is driving along a level road at 120 km/h and it has to brake suddenly, it will take 5,3 seconds (including your reaction time) to come to a complete stop over a distance of 101 m. If towed at 90 km/h, it would've taken 4,2 seconds to come to a stop over a considerably shorter distance.

Now let's suppose we hitch a caravan to the same double-cab bakkie with a tare of 1 120 kg and 100 kg of luggage inside (so a total of 1 220 kg). In this case, you do need overrun brakes for the caravan.

Even though this combination is considerably heavier, the overrun brakes should do their job. If towed at 120 km/h, the bakkie and the caravan can be brought to a halt within 4,2 seconds over 83 m. At 90 km/h, the combination can be brought to a halt after 3,3 seconds and 52 m.

A QUICK DUMMY?

You may believe that you'll be able to brake in an emergency. But what happens if you also have to swerve to avoid hitting something in the road ahead of you? How easy

is it for your towing combination to start skidding over the road surface – or even worse – to start toppling over?

"The stability of a vehicle depends on a number of factors. The most important of these is the ratio between the wheel alignment of the towing vehicle and its centre of gravity above the road surface," says Francois. "The centre of gravity is that point where you can assume all of the weight of the vehicle to be centred. The position of this point of course depends on the design of the vehicle and the way in which you load the luggage into it. For example; the centre of gravity of a car with a roof carrier loaded with heavy luggage moves upwards.

"The Static Stability Factor (SSF) of the vehicle is an indication of its resistance to roll. The static stability is calculated by dividing the width of the wheel alignment by double the height of the centre of gravity. The bigger this value, the more stable the vehicle will be while moving.

"A typical sedan has a SSF of about 1,4, while that of an SUV is about 1,17 and >

that of a bakkie is 1,18," explains Francois.

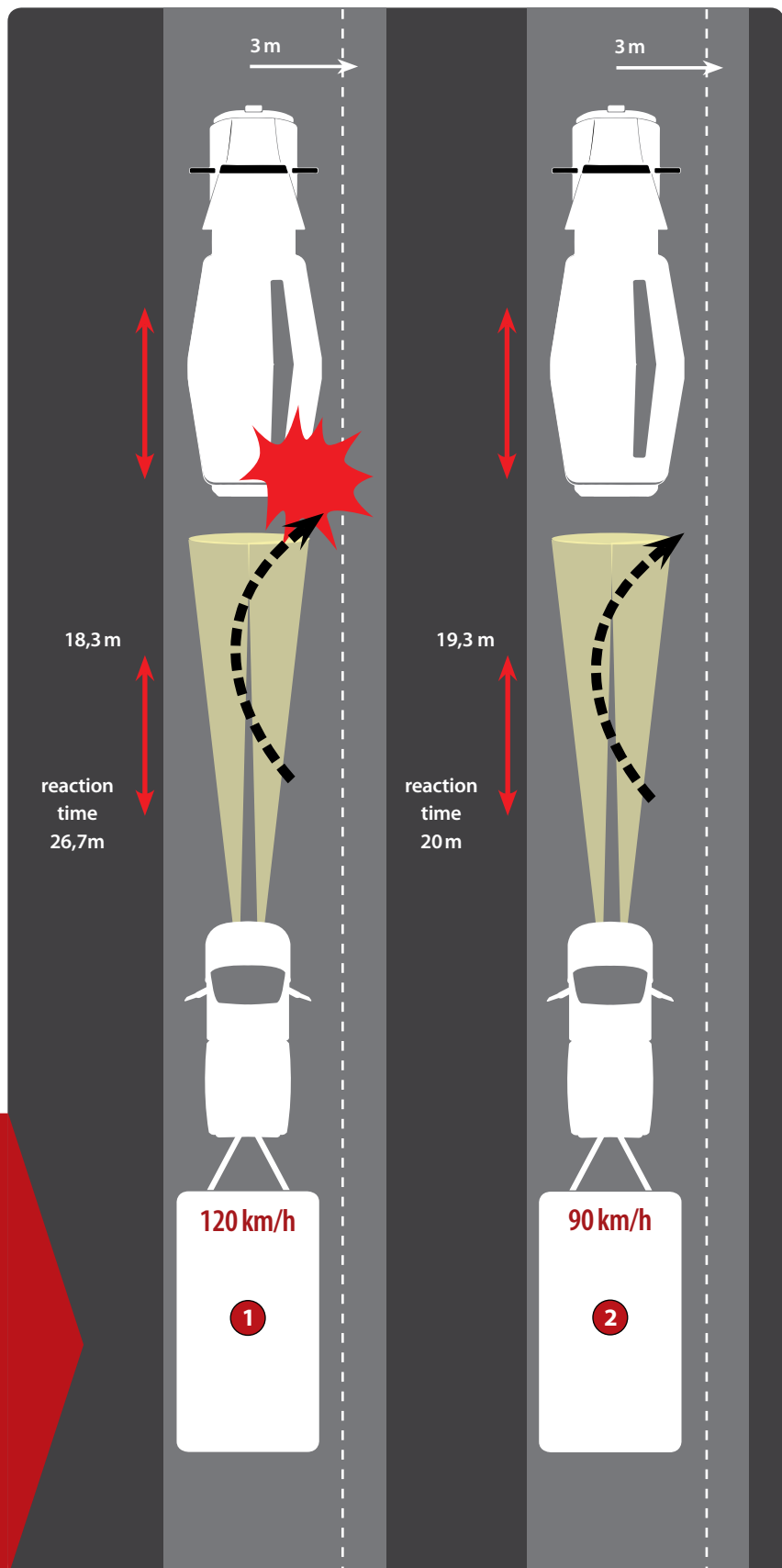
"The SSF serves as an indication of the tendency of a vehicle to fall over when involved in an accident. A vehicle with an SSF of 1,03 or less stands a 40% chance of falling over, while the chance of crashing with an SSF with 1,45 or more is only 10%. The SSF of most towing vehicles ranges from 1,13 to 1,24, so they consequently stand a 20-29% chance of rolling over."

THIS IS HOW THINGS PLAY OUT

Francois made a few more calculations to illustrate how towing speed, in combination with the stability of your towing vehicle and caravan, affect your ability to avoid a collision.

Suppose the headlights of a towing combination with a high average SSF of 1,25 suddenly reveal a stationary truck 45 m ahead in the road. Will there be enough time for the driver towing at 120 km/h to switch lanes successfully (that is, to swerve within 3 m), provided he is able to suddenly turn at a sharp enough angle to allow the towing combination to only just avoid skidding or rolling over? But at 90 km/h, things look better (see illustration).

As you continue to load luggage and other items higher and higher, both in your bakkie and the caravan, the height of the centre of gravity increases and the SSF value decreases. The moment that the SSF value has dropped to below 0,6, it will be impossible to avoid hitting anything that you notice ahead of you in the road – not even at a speed of 90 km/h.



- 1 When a towing combination is moving ahead at 120 km/h, the combination will already have moved ahead 26,7 m within the driver's 0,8 second reaction time. This means you are already 18,3 m from the truck, while you need 25,9 m to swerve out in time. So it takes you 52,6 m in total to react.
- 2 Suppose the towing combination is moving ahead at 90 km/h, then it will have moved 20 m in the reaction time of 8 seconds and the driver will be able to perform the manoeuvre in 19,3 m – with a leeway of 5,7 m before it will hit the stationary truck.

7 CAREFREE TOWING

Poor road surfaces or crosswinds are often blamed when a caravan starts to swerve uncontrollably, but they're not the only culprits. Other factors within your control also play a role. Even if you've checked everything a hundred times before and even if you've been towing since the days when petrol still cost R2 per litre, there is no harm in following these steps again.

HITCH A MATCH

The most important factor is probably your towing combination: What are you towing and what are you towing it with? The GVM (total mass of the loaded caravan) must be less than the tare of the towing vehicle (it's mass without being loaded). The wheelbase of the towing vehicle is likewise a consideration. Vehicles with longer wheelbases are invariably more stable when they're towing.



DRIVE MORE SLOWLY

In Europe, the top speed for vehicles towing caravans is 80 km/h – and for good reason. When a vehicle is towing something, many more things can go wrong. OK, you don't want to spend all day on the road, but rather reach your destination an hour later instead of never. Endeavour never to tow faster than 100 km/h. After all, the journey is meant to be part of the holiday.



TYRE PRESSURE

Tyre pressure plays a major role in the stability of your towing combination. As a rule, it's important to tow with correct tyre pressures: The higher the pressure, the less sideways movement on the sidewalls of the tyres there will be and the smaller the chances of having a towing vehicle or caravan swerving on the road. The pressure of the rear wheels of the towing vehicle is particularly important. Check what tyre pressures are recommended for your vehicle with heavy loads by its manufacturer and inflate accordingly, perhaps even a little more. If you drive along sand roads, deflate slightly and drive more slowly. The maximum pressure for



every tyre is indicated on its side wall. Keep this in mind when you buy new tyres for your vehicle and/or caravan.

LOADING AND WEIGHT

See to it that the weight is spread proportionally in the caravan: not too much weight on just one wheel and not too much behind the axle. If you load incorrectly, the caravan is made less stable. If there is going to be fresh water at your destination, then leave the water tank empty. A full water tank simply adds unnecessary weight. If you have to take water along, drive slowly. Fill the water tanks completely – water in a half-filled tank causes a lot of sloshing. (Most modern water tanks are fitted with mechanisms that limit the movement of the water inside, though.)



THE TOW BAR/HITCH

Check to see whether your tow bar is positioned correctly – it must not be fitted too high or too low. Once the caravan has been hitched, it must be level with the nose or no lower than 2,5 cm from level. The SABS recommends that the ball of the tow bar must be between 350 mm and 465 mm above the ground. If the tow bar is fitted higher than this, remove it and fit a drop plate to the vehicle. There are drop plates with four holes and others with six holes – ask a dealer to check which one will work best on your vehicle.



SIDE MIRRORS

Towing mirrors are not necessarily compulsory. Legal requirements merely state that you must be able to see well enough past the caravan. However, it is worth your while to buy a set of these mirrors. Adjust them in such a way that you can see the rear corner of the caravan on both sides.



STABILISER

There is a huge variety of stabilisers available. Get yourself one. You'll have more peace of mind and it will prevent the caravan from wagging its tail like an excited puppy when it's towed.



STOP LIKE THIS

Don't simply come to a screeching halt when the caravan starts to wag its tail. It's much safer to take your foot off the accelerator and try to steer the vehicle straight ahead. This ought to enable you to regain control of the caravan. If your vehicle has ABS, you can step on the brakes lightly and let go of them again. Don't try to stop over a short distance using the brakes.



WHEEL ALIGNMENT

Have your caravan serviced regularly and ensure that the brake system works properly. See whether the axle (or axles) is (are) still true and not damaged. After a trip on a bad road with potholes, the axles may need realignment. You won't easily feel the effect of the alignment that is out on a caravan with double axles, but it will nevertheless interfere with the stability of your combination.



ALL GOOD AT THE BACK?

Make sure that the rear lights of the caravan work along with those of the towing vehicle. It's illegal to drive with lights that aren't working properly.



TOW BAR TIPS

Beware of removable draw bars. They often have play that cause the tow ball to move around instead of being securely fixed in position. Although this may seem insignificant, it has a much bigger effect towards the rear of a combination and may cause a caravan to swerve. Sometimes, the ball of the tow bar is located on an extension some distance away from a vehicle, for example when making space for a spare wheel at the back. This can negatively effect the stability of a caravan.



KEEP UP WITH SERVICES

The tyres and rims of a towing vehicle must be checked and balanced regularly. Check the alignment before every trip and ensure that the shock absorbers are in good nick. Consider additional shocks if your towing combination feels unstable. Coil springs can be reinforced with air bags. They're the size of a cold-drink and fits within the coil.





Do it yourself

If you own a caravan, it's not merely a case of hitch, tow and light a fire. Just like your car, it also needs a bit of tender loving care from time to time. So when it gets a breather in the winter, you should make sure that it sleeps safely and soundly.

1 SERVICE IT YOURSELF

If your caravan, bush trailer or trailer has spent a few months with a roof over its head, some things might suddenly not work so well anymore. Now you have two options: you either cough up a lot of money for a service, or you can do it yourself. A caravan or trailer that isn't properly maintained can end up costing you a lot of money.

Thankfully it is easy – and relatively cheap – to service and maintain it yourself. The secret lies in a good checklist. If you work your way through such a list, chances are slim that you'll forget something.

And even if you don't service your caravan yourself, you can still use the list to check if the guys at Speedy's Servicing do a good job. Here's what you need to check.

1 CHASSIS AND SHOCKS

The chassis supports the bodywork – in fact, it supports everything on top of it and therefore it should be thoroughly checked. Don't just bend over and glance at it. Get on your back and give the chassis the Mark 1 eyeball test, because if the chassis breaks, you could get stranded in places where you'd rather not be.

Clean it

Check if there's rust on the chassis. Clean and treat it, where necessary, with a lick of chassis paint. Then grease the moving parts and replace well-worn washers.

Any cracks?

Especially check around welding points for cracks. Sealing holes with bubblegum isn't

an option; ask an expert to fix the damage.

Are the leaves peachy?

While you're under the caravan, take a look at the suspension. The one side of a leaf suspension system should be able to move through its rigid link. If it can't, your suspension is worthless.

Are the shocks shell-shocked?

About half of the shaft should be visible. If there's a leak somewhere, you should replace the shock absorber. It's best not take chances with shock absorbers.

Pipes and wires

A large portion of your caravan's wiring and plumbing run underneath it. Check for damage.

Is the axle going anywhere?

Ensure that the U-bolts around the axle are secure.

2 BRAKES AND COUPLINGS

Remember, according to the law, if your trailer weighs more than 750 kg (load included), it must have brakes.

OIL AND GREASE

Handle the handbrake

- Make sure the spiral-shaped spring in the handbrake is well lubricated, as well as the locking mechanism.
- Hose down the wheels and grease them well.
- Remove the drums and hose everything down. A bit of paraffin does a good cleaning job. Then remove the brake pads and replace them, if necessary.

Adjust the brakes

- Now you can adjust the handbrake as well as the trailer's brake system.
- At the bottom of the handbrake system,



THE COUPLING HEAD

If the tongue on the coupling head is loose, you may lose your trailer on the first bump in the road. Ensure that it's in a good condition.

- Check if the sock still connects.
- Check the coupling head that secures the caravan to the tow bar.
- Firstly, is the tongue inside of the dome still in one piece? If not, you'll have to replace the entire head. The tongue is important, since it secures the dome to the ball of the tow bar. (*It would be embarrassing to arrive in Margate only to realise your caravan's still in Benoni. – Ed.*)
- The coupling has a draw bar and a shock absorber (also called a damper). If you depress the draw bar completely, the damper should push it back to its original position. If not, you should replace the shock.
- Lubricate the draw bar (there's usually two lubricating points).

there's a long axle that can be adjusted with a nut. There are also two nuts here to adjust the brakes (one for each wheel). Ensure that these bolts run perpendicular to the centre axle so that the wheels brake simultaneously. Sometimes, you'll need to make a few adjustments before the wheels brake together.

3 THE BODY

Inside

- A caravan's doors, hinges, locks and handles receive plenty of abuse. Make sure everything is still in one piece, clean and well lubricated.
- Also make sure any fixing points on the tables are solid.
- Do all the zip fasteners still work? And do the mosquito nets close properly?

Outside

- Have a good look at the body as well as the awnings, tents and any other gear that's attached to the outside of the caravan.
- Inspect all the locks, hinges and handles. Clean and lubricate where necessary.
- Make sure that all the bolts, nuts and fixing points are solid.
- You obviously want your caravan to keep looking great for a long time to come, so especially inspect all the rubber and other finishing materials. It's also very important that the rubber seals on the door and windows should be intact. Remember, even the tiniest hole will allow dust in.
- Many trailers or caravans have a pop-up roof. Make sure that the hinges and any gas struts work. You don't want to spend your entire holiday crouching.
- Inspect the solar panel system, especially the connections and wiring.
- Check if the water tanks and jerry cans are fixed in place.
- Test if the corner steadies drop and lift smoothly. You'll probably have to lubricate them thoroughly.

HAVE A GOOD LOOK AROUND THE CARAVAN...

1 Charge it. Batteries aren't cheap and need to be looked after. Charge them regularly and keep it charged, even in winter or at other times when you're not using your caravan. They should preferably be charged once a month, for 24-48 hours.



2 Testing, testing. Now test the fridge, lights and other electrical appliances in the caravan. If the battery doesn't immediately have enough have enough life in it, wait until it's fully charged, then test these again.



4 And another test. Test the fridge-freezer with both 220V and 12V as well as with gas, especially if it's been switched off for a while. If it leaked, the cylinder will need to be refilled.



3 Power trip. Check the electrical control systems, ensure they're in working order, and ensure they're able to recharge the batteries. Test all the switches. If the lights don't work, there could be a problem with the bulb, the wiring or the connections. Check that the inside and outside lights work.



5 Gas 101. Ensure there isn't any wear and tear on gas pipes and connections that could leak.



7 Take a shower. Check the shower system and all the taps and make sure that it works properly. Also test that the geyser works.



6 Down to earth. The electrical systems in many caravans are not earthed, especially not for 220V. We recommend that you install an earth leakage system, because it'll be no fun if a surge at the campsite fries your fridge – and all because you don't have a system like this in place. Spikes in the current are common where the supply is patchy, and when you're tapped into a generator. (Or to certain nuclear power plants, like Koeberg. – Ed.) Prevention is better than cure, so make sure your caravan is properly earthed.



8 Long-distance power. Inspect plugs and extension cords for any possible damage.



9 Water works. Check if the water pump works. Open the taps to see if the water flows. Check if there are any leaks at the pump, taps or pipes.



10 On, off, on... Check for cracks in the plastic over indicator and brake lights.



2 SCREW IT ON RIGHT

If the screw clamp on your caravan's jockey wheel doesn't want to turn forwards or backwards, or the wheel doesn't want to stay in place when your caravan is hitched, then the screw thread is kaput. This is how you replace it.

GET THIS

- 1 steel bolt (14 x 250 mm)
- tap
- an angle grinder
- a sturdy vice grip on your work bench
- a piece of iron pipe
- an electrical drill (optional)
- licence plate screws (optional)

DO THIS

1 Engage your caravan or trailer's hand-brake and rest the A-frame on a hydraulic jack. (You can also fasten the caravan to your tow bar.) The important thing is simply that it doesn't rest on the jockey wheel.

2 Turn the handle on the jockey wheel until the parting holding the wheel separates from the handle. Now unscrew the clamp. Once it's loose, you can remove the pieces of the wheel from the A-frame. **A**

There's a plate that fits between the jockey's vertical axle and the A-frame and secures the clamp to the axle's tube. Don't lose it!

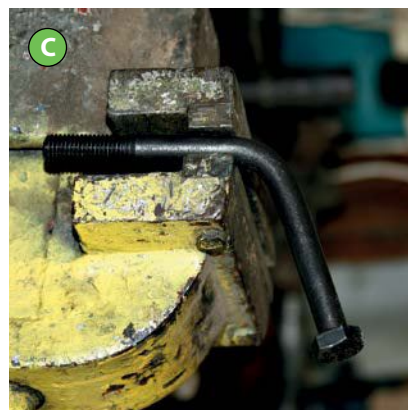
3 Remove the fibreglass cover over the A-frame (if your caravan has one). It's usually riveted down and you'll have to drill these rivets out.

4 Make a new 14 mm thread with a thread cutter in the hole where the old arm used to screw in. **B**

If you lubricate the cutter with a bit of grease or Vaseline before you start working with it, it'll go easier. Remove the iron filings from the hole with a cloth or paintbrush when you're done.

PS: Don't try to skip this step by simply welding the steel bolt's nut to the A-frame. The part of the A-frame in which the jockey wheel fits is made of cast iron. Unless you have very specialised tools, you won't be able to weld anything to it.

5 Secure the bolt in the vice grip. The unthreaded part sticking out will become your screw clamp's handle, so measure



how long you would like the handle to be. **C**

Take care not to damage the bolt's thread and slip the pipe over it, all the way to where it's gripped in the vice. Now bend the bolt. The longer the pipe, the easier it'll be to bend the bolt. Bend the bolt less than 90° so that you'll have a good grip on the jockey wheel. Remember: If the pipe is too soft, the bolt will stay as straight as an arrow and you'll end up with a pea-shooter that can shoot around corners...

6 Grind the bolt head nice and smooth – you can use the angle grinder for this. This way, you prevent sharp edges on the bolt

head that can hurt your hand when you turn the jockey wheel. **D**

7 Put the fibreglass cover back over the A-frame. Use plastic licence plate screws in the holes where there used to be rivets. The screws don't damage the fibreglass and you can buy them in yellow or white. What's more, it will then be easier to remove the cover the next time you want to repair something underneath it.

Remember to put the little plate back before you put the jockey wheel back. A little bit of grease won't hurt it either.

8 Screw the new arm in place and voilà! Your jockey wheel is back in business. **E**

3 KEEP ON TRUCKIN'

Just like your car, your caravan needs maintenance, even if you don't spend hours in peak traffic with it every day. And you can actually do a lot of the work yourself.

Every car owner knows the drill, because it happens every 10 000 km or 20 000 km – or 30 000 km, for some lucky ones! First, you have to call your boss and explain why you're going to be late for work today...

Then you have to ask a buddy or a family member to give you a lift from the mechanic's workshop to your office. Then the same buddy or family member has to pick you up from work again, so that you can go and fetch your car. And after all of that, you have to cough up a lot of money to pay for something you could've done yourself, if only you had the time and patience. Yep, we're talking about a service.

KNOW THY ENEMY

Things always work better if you've read the instructions. So before you start removing one screw after another, only to see what it looks like when your own caravan overtakes your car halfway through the Du Toitskloof Pass on your next holiday, first make sure you understand exactly how things work. And while you're at it, start at the front of your caravan.

DO THIS

(see sketch on page 50)

Unscrew the bolt ② and remove it.

Lift the handle ③ and take it off.

Pull the shaft ⑮ out from underneath the handle.

Put a bit of grease on it.

Put the shaft back in its place.

Screw the handle back on.

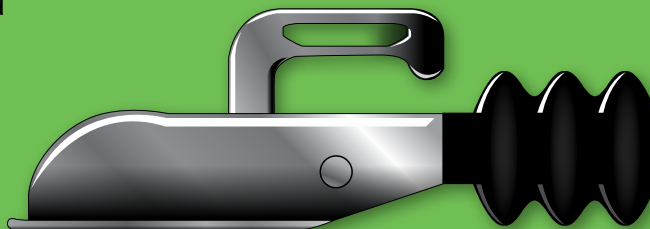
The tow bar tango

The rubber boot, also called a gaiter, ⑤ protects the shaft ④ against dust. As your vehicle moves forward and stops, the shaft moves forwards and backwards and the gaiter expands and contracts like a concertina. The first signs of wear and tear are small cracks in the ridges of the gaiter.

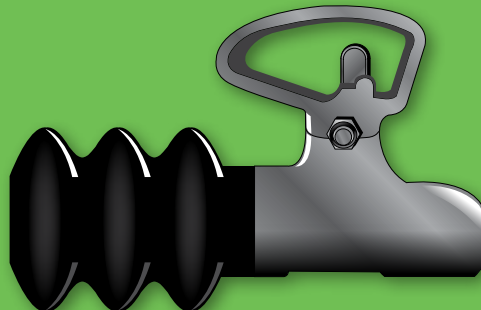
FROM THE BEGINNING

Most caravans built before or during 2009 have a cast-iron coupling head, but some of the newer ones are fitted with a steel head that simply slips over the tow bar. Steel couplings need little maintenance, but a bit of Q20 lubricant on the spring underneath is generally a good idea. Cast-iron coupling heads require more attention, because they have a shaft that slides underneath the head to secure it to the ball of your vehicle's tow bar.

Steel head



Cast-iron head



DO THIS

WITH THE STEEL COUPLING HEAD

Unscrew the two nuts next to the gaiter.

Pull the head forward and remove it completely.

Remove the broken gaiter.

Stick the new one over.

Screw the head back in place.

WITH THE CAST-IRON COUPLING HEAD

Unscrew the entire body casting ⑥ from the shaft.

Unscrew damper's ⑩ locking bolt ⑫. You have to do this from the bottom of the bracket ⑪ that keeps the damper in place.

Loosen the bolt ⑦ that sits parallel to the shaft (between the damper and the shaft) to reach the set of half-moon washers ⑨ at the back.

Remove the half-moon washers at the back.

Tap the entire coupling block ⑥ with a hammer so that it shifts approximately 2,5 cm in the direction of the caravan.

Remove the front half-moon washers ⑬.

Remove the shaft completely.

Take the damaged gaiter off and replace it with the new one.

Squeeze the shaft back through the hole in the casting ⑥, through the rubber washer ⑧ and lastly the damper bracket ⑪.

Put the front half-moon washers ⑬ back in place.

Shift the casting ⑥ back to the front.

Put the rear half-moon washers ⑨ back in place.

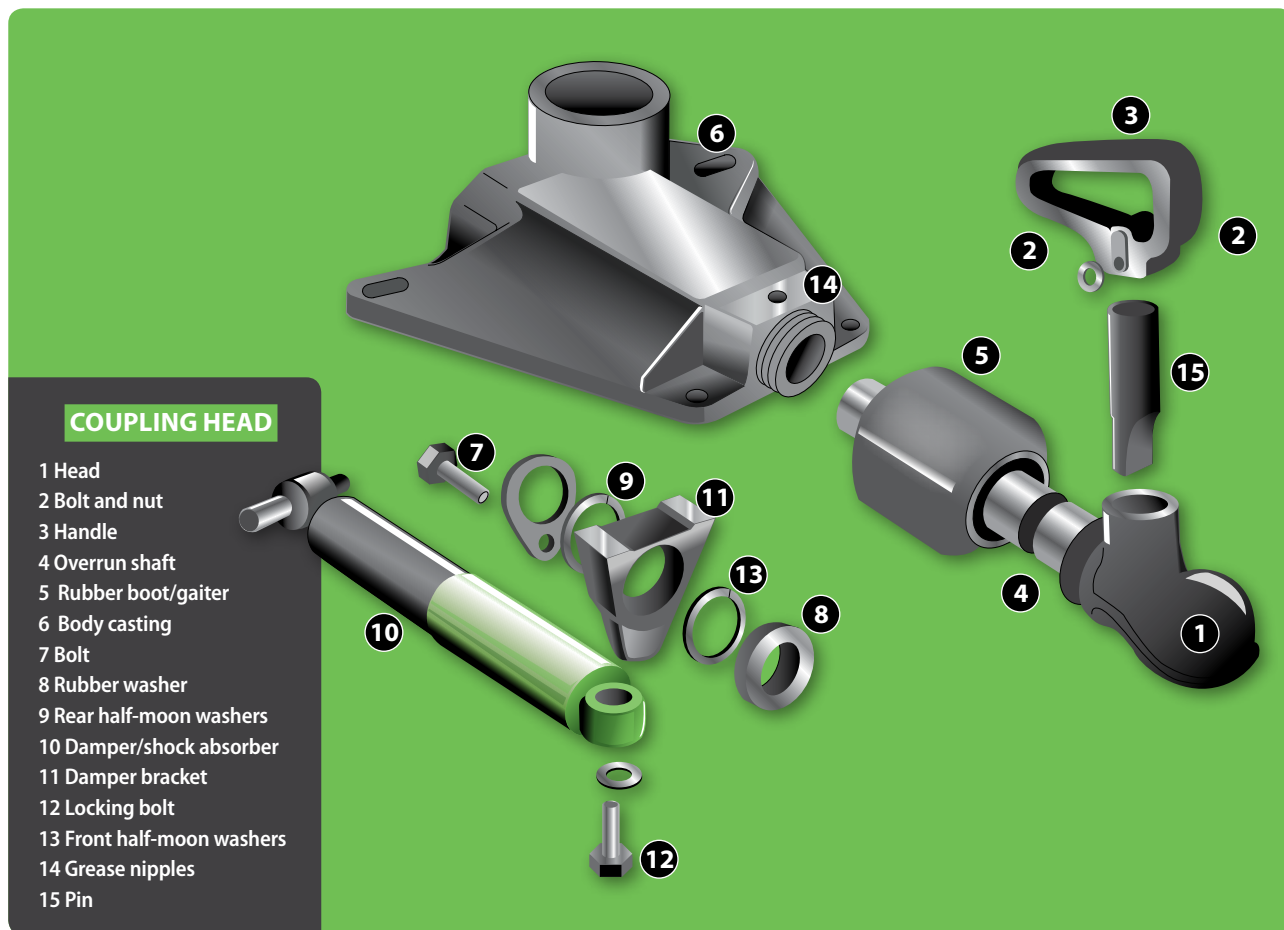
Fasten the remaining nuts so the damper ⑩ and casting ⑥ are back in place.

GREASE FOR PEACE

The shaft fits through two round openings in the body casting, which should be well lubricated. If they get rusty or clogged, it might mess with your caravan's ability to brake.

DO THIS

Make sure the handbrake is properly



engaged before you start.

Press the shaft to the back.

Check if there's grease on the back of the shaft. If the lubricant looks relatively clean, everything's fine. If the shaft is dry or clogged, it's time for some new grease.

Squirt the new grease into the grease nipples **14** on top of the A-frame. The one hole is right behind the rubber gaiter and the other right at the back on the A-frame.

WHAT'S THAT SOUND?

If the coupling makes a knocking sound (like metal on metal) when you pull away or stop, it's either the rubber washer **8** around the shaft that's kaput, or the damper has given up the ghost. (Provided that the brakes are adjusted correctly and in good working order.)

To get to the washer, you have to remove the whole coupling shaft (in the same way as when you replace the rubber gaiter on the cast-iron coupling head).

To replace the damper, you need to

loosen the nuts at the front and back.

FRACTIONS COUNT

If there is too much slack between the shaft and the body casting, the casting might be worn. The margin between the shaft and the body should only be 0,2 mm, so if you feel movement when you shake the coupling head to the sides, you'll need to take your caravan to the workshop.

SHOULD I GREASE THE TOW BALL?

No. The tow ball on your car's tow bar is not supposed to be greased. In the long run, grease has the opposite effect to what you intended. When you drive on gravel road, dust and sand collect on the lubricant. This forms a sandy and grinding paste between the tow bar and coupling head.

If that high-pitched "chir-chir" from the tow bar bothers you while you're on the road, rather cover the ball with a plastic bag, hitch your caravan and tear away the excess

plastic left around the connection. The bag works as a "temporary lubricant" that will gradually disintegrate by the time you reach your destination.

WHERE DOES THIS GO?

Your towing bracket needs a service at least once a year. It's even better if you at least check it before and after every long trip.

If you service it yourself, make sure you screw everything back together tightly and that every little part that came off goes back in. It would be tough to explain to the insurance company why your caravan followed a different route to the coast than you and your family did...

SHOPPING LIST

- ☐ A can of grease
- ☐ Rubber gaiter
- ☐ Rubber washer
- ☐ Damper

4 SERVICING YOUR BRAKE PADS

The brake pads on your caravan are just as important as those on your car. Therefore, it's important to check them regularly, and no, it won't take weeks.

Caravan brake pads usually last a very long time, but that doesn't mean you can just use them indefinitely and simply believe that they'll be fine. Your caravan's brakes might not work as often as your car's, but when you need them, they need to work well.

Consider a caravan with a GVM of 1 200 kg being towed at 100 km/h. If the towing vehicle would come to an immediate stop, the weight with which the caravan presses against your car will be 300 tons, says Prof. Francois Smit from the Department of Applied Mathematics at Stellenbosch University. The applied math isn't the only consideration; the weight you tow has a huge influence on how well your vehicle can brake.

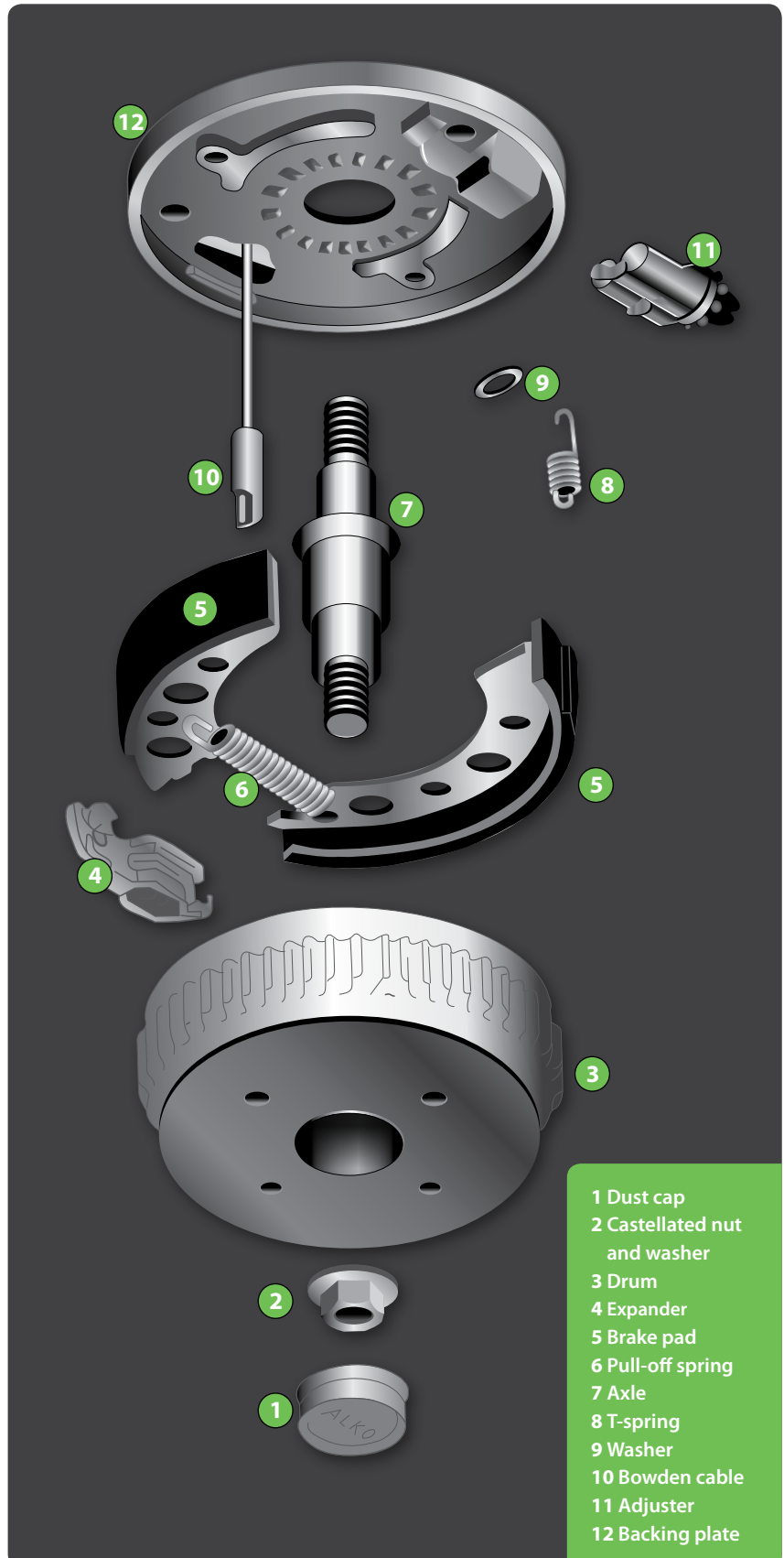
Let's say you try to brake evenly with your load and stop in five seconds. The effective weight pressing against your car will be about 700 kg more than the weight of your caravan. If you have to stop suddenly at speed, and your caravan's brakes are worn or not properly adjusted, there's a lot more pressure on your car's brakes.

And that's where things can go wrong. Instead of taking this risk, rather take a few minutes and check your caravan's brakes.

PAY ATTENTION IN CLASS

Service your brakes at least once a year. If you don't go camping often, you can do it every 18 months. It isn't difficult to service the brakes yourself. Worn brakes don't make that grinding sound the ones on your car make when they're old, so they don't give you any warning. And even if you've serviced your caravan recently, it still gives you peace of mind to know that you checked your brakes before a trip.

If you check them and realise they need to be replaced, even someone with 10 thumbs could do it.



- 1 Dust cap
- 2 Castellated nut and washer
- 3 Drum
- 4 Expander
- 5 Brake pad
- 6 Pull-off spring
- 7 Axle
- 8 T-spring
- 9 Washer
- 10 Bowden cable
- 11 Adjuster
- 12 Backing plate

OPERATION BRAKE PAD

Wheel and deal

Service one wheel at a time. Make sure your caravan is on a level surface. Put a rock or brick in front of and behind the other wheels for safety.

Remember to release the handbrake, otherwise you won't be able to remove the drum.

Take cover!

(see the illustration on page 51)

Position a flat-head screwdriver behind the ridge where the dust cap **1** and drum **3** meet.

Tap the back of the screwdriver lightly with a hammer above the dust cap. Rotate the drum as you tap the screwdriver into the gap to make sure the cover comes off evenly.

Off with its head

Straighten the two ends of the split pin with a pair of pliers and take it out. You should be able to remove the castellated nut **2** now. Use a monkey wrench to loosen the nut if it's too tight. Behind it, you'll find a loose washer that comes off with the drum.

Knock-knock

Tap the drum with a hammer while rotating it to loosen it up. Pull it towards you. Remember, one of the wheel bearings sits on the outside of the drum, right next to the washer. Try to keep it in place.

Off the hook

The two brake pads **5** are secured with a spring **8** to the drum **12**. Place your finger on the back of the plate, where the spring hooks onto the washer, **9** and press the spring so that it unhooks. Unhook the expander **4** from the Bowden cable **10**.

The brake pads and expander should be loose now – remove them. Spray a bit of Q20 into the brake cable tube from the drum's side. Just like a bicycle's brake cable sometime's doesn't release when you stop braking, an overrun brake system on your caravan can get stuck if the cable isn't well lubricated.

Look closely

If the brake pads have less than 3 mm of padding left, it's time for new ones. You can buy a new set for around R350, or have the old ones retreated for about R120 per set. If the pads are worn down completely and you've literally been braking with steel on steel, the drum is probably damaged.



You'll have to have the drum skimmed to get it smooth again. Most brake service centres can do this.

Remember, caravan brake drums are thinner than those of a car and if the drum is heavily damaged, skimming might not be an option. Skimming costs about R230 per drum, and a new drum costs R600 up to R700.

Get a grip

Sand down the new pads and the inside of the drum with coarse sandpaper (P60 grit) to ensure the new brakes grip well from the start. The new brake pads might also be too thick for the drum, in which case you'll have to sand them down until they fit inside.

Go nuts

Slacken the adjuster **11** completely. The correct direction differs on each side. Look behind the back plate, next to the hole through which you make adjustments with a screwdriver. You'll see an arrow. Turn the nut in the opposite direction until it's screwed in completely. This disengages the brakes and makes it easier to put back the drum later on.

Put it back where you found it

The brake pads are the same on either side on caravans built after 1984. Caravans built

in that year or earlier have a top and bottom pad. They will only fit the way you removed them. Hook the spring **6** back between the two pads and put them back as a unit into the drum. Now put back the top spring that presses against the brake pad, then the bottom one.

Almost done!

Hook the adjuster back into the brake cable and put it back between the brake pads. Put the drum back over the axle as far as you can push it by hand.

Make sure the bearing is still in place. Put back the washer and nut, but don't fasten them completely yet. Tap the drum back into place from the front, making sure it's secured around the axle.

Fasten the castellated nut more, until just before it 'takes'. If you can now get the split pin through the hole on the side of the nut, so that it fits back into the axle, you put the pin back. If not, loosen the nut slightly until it sits well over the hole. Don't fasten the nut completely yet. You'll damage the bearing.

Put back the wheel and turn the adjuster through the hole at the back of the plate until the wheel won't turn anymore. Now turn the adjuster nut loose, one click at a time, until the wheel can turn again. This

way, your brake pads are only just not making contact with the drum.

• **Dead end**

When you pull your caravan forward by hand, and you pull the handbrake up by three clicks, it should stop immediately.

You should still be able to move the caravan backwards, though. If you engage the brake with six clicks, it shouldn't be able to move backwards either.

If this is not happening, take your caravan to a dealer so that they can adjust

the brakes further.

go! Drive & Camp says If you're replacing your brakes by yourself for the first time, record everything you remove so that you can make sure you put everything back where it belongs later.

IF THINGS GO HAYWIRE...

Apart from spare bulbs, split pins, wheel bearings and fuses, it's wise to take an extra electrical plug with you on holiday, since these plugs do break.

If you're lucky, it's only the cover, but sometimes, you need to replace the whole thing.

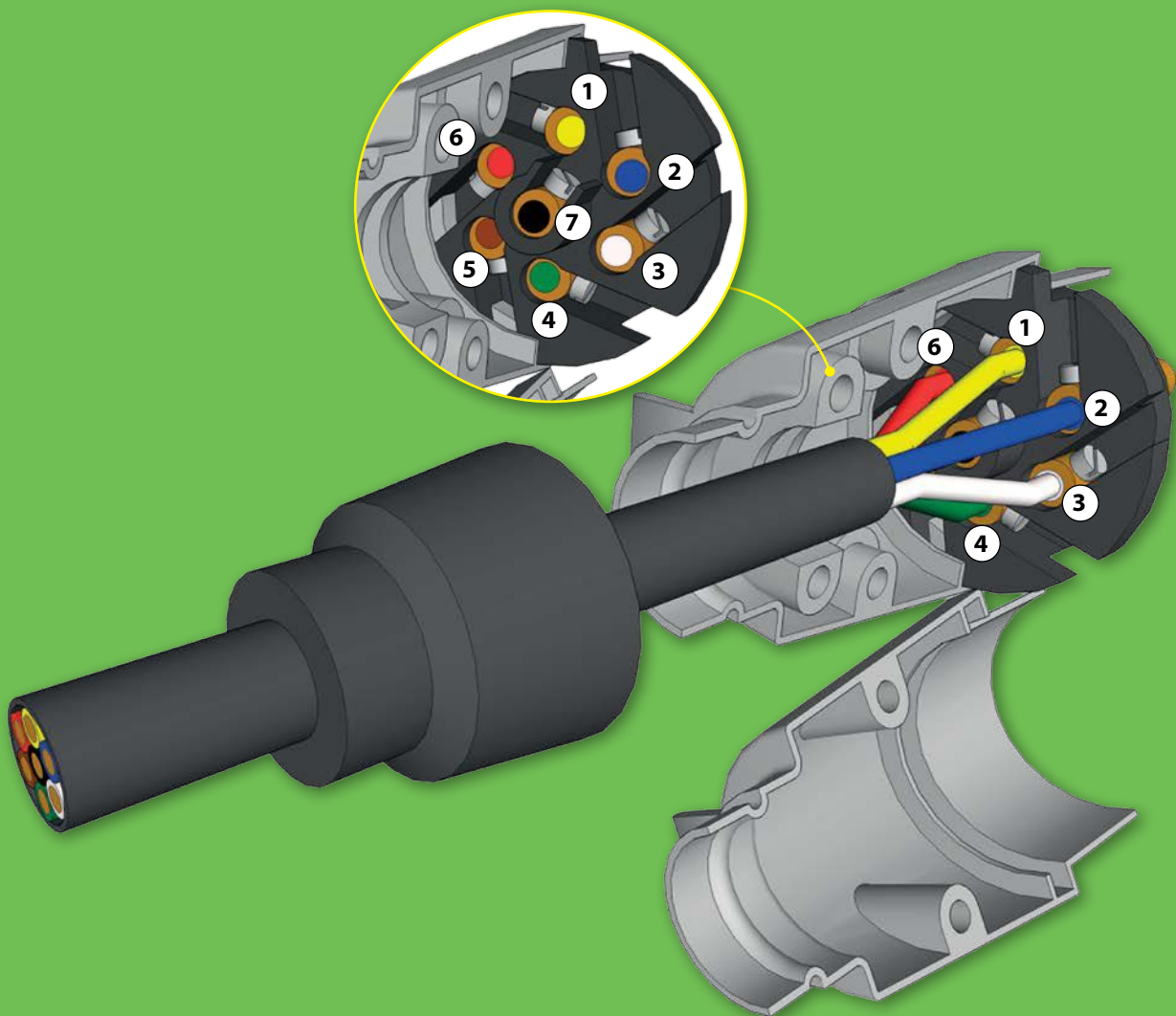
The slit is at 4, while 1 is always at

the top. The contact points at the back of the plug are also numbered this way. Unfortunately, not all 7-wire cables are the same. The colours might differ. Here is a general guideline.

- 1 yellow for left indicator
- 2 blue for power to fridge or to charge battery from vehicle
- 3 white (sometimes pink) for earth

- 4 green (sometimes purple) for right taillight
- 5 brown for taillights (in older caravans, the taillight on the right*)
- 6 red (or orange) for brakes
- 7 black for taillights

* In older caravans 4 and 7 are usually bridged and 7 is then used for the other taillight.





5 YOUR CARAVAN NEEDS SOME TLC, TOO

One of the burning questions among new, and even some old, caravanners is about how you're supposed to store your caravan when the holiday's over.

Around the campfire and on internet forums, caravanners have all sorts of opinions on the right way to do it. Many say the only place you should consider is under a roof, between four walls and behind a closed door. Some even go so far as building a tiled caravan garage outside their homes. Others say under a shaded carport is just fine.

Then there are various opinions on the pop-up roof – one group of campers say it has to be open while you're not using the caravan, while others are adamant that it should be closed.

Another point of debate is whether the caravan can be stored on its own wheels or if they should be removed. Louis Oosthuizen would like to know the

"ultimate answer" on *go Drive & Camp's* Facebook page. But Johannes Knipe from J.K. Caravans in Cape Town says there isn't really a single answer or method. He says it depends on how often you use your caravan and for how long it's stored at a time.

And you shouldn't only consider how you store your caravan – how you maintain and look after it is equally important. Think of it as the three pillars of caravan care: Store, Seal and Service.

STORING IT

While it's an advantage to have a garage for your caravan, it's definitely not essential. An extra garage can be an expensive exercise and if you don't have that kind of money to throw around, there are other options.

A carport made of shade cloth that can block out 90% sunlight is sufficient, says Johannes, who's been working in the caravan repair industry for over 30 years. "My own Exclusive stands under a shade-cloth carport. I like it, because it gets some air while it's being stored instead of standing there sweating, like they do under some caravan blankets. With all that sweating, a

caravan can easily fall prey to wood rot. Don't worry about the dust, it'll look good as new after a wash."

If you're only storing your caravan for a month or two before your next trip, it's not necessary to remove the wheels or let it stand in the air with the wheels off the ground. "Everything depends on how long you plan to store it," says Johannes. "There's a difference between parking and storing. If the caravan will stand in one place for six months or longer, store it with blocks under the axle with the wheels removed, or in the air. And it's best to lower the jockey wheel if you're storing your caravan for an extended period, since it takes some weight off the front corner steadies."

TYRES

Pump it up

"My caravan never gets stored for more than a month and a half at a time, and I've never kept it with the axle and wheels off the ground," says Johannes. "But you have to make sure the tyre pressure is correct. Store it at the same tyre pressure you use on the road. I pump my caravan's 14-inch tyres to 3.2 bar, but you can keep 13-inch tyres



at 2.8 bar.

"Tyres often burst because they weren't inflated enough. People will tell you that a tyre that's been inflated too much, wears quicker in the middle. But a tyre that wasn't inflated enough and wears more quickly at the sides has a bigger chance of bursting because of friction. I'd rather wear them down in the middle than burst one.

"People often engage the handbrake when they store their caravan. That's a mistake. Once the corner steadies are down, that caravan isn't going anywhere. You can also add some blocks in front of and behind the wheels.

Engaging the handbrake just puts unnecessary strain on the cables, and any moisture between the brake pads and the drum is in effect trapped in there, which could cause rust. The brake pad can even rust onto the drum."



LET IT STAND... But don't let it stand there with deflated tyres. And be sure to lower the corner steadies and disengage the handbrake.



USE IT ONCE! Lower the jockey wheel if your caravan is not stored on its wheels. It takes some pressure of the front corner steadies.



STEADY NOW. If you plan to store your caravan for months at a time with the wheels removed or in the air, you can't simply let it rest on the corner steadies. Add some extra support under the axles to prevent cracks from forming above the door.

CORNER STEADIES

If you're storing your caravan for six months or longer, remove the wheels or lift them up off the ground. Tyres don't like standing for months at a time. You can't let your caravan rest on the corner steadies for such a long time, however, so you have to support the axle with blocks. Your caravan's weakest area is around the door. If you don't support it under the axle and allow it to 'hang' on the corner steadies, the outside panel above the door will crack. Potholes often get the blame for these cracks, but that's not the case.

OPEN AND CLOSE

To store your caravan with the pop-up roof open has its advantages, says Johannes. "For me, it feels like it allowed your caravan to air out, and you can easily wipe up the dust that gets in through there.

"People often keep it closed, but without realising that they didn't push the canvas walls in all the way as they were closing the roof. Then the roof's rubber seals can't do their job against water ingress, and when you pop the roof again, there's water stains and damage on the canvas.

"Water that gets trapped in the grooves can also cause the gas struts to rust. Keep the windows closed and the fridge switched on – it prevents the pipes from rusting. If you do choose to switch the fridge off, clean and dry it thoroughly and leave the door open."



POP THE TOP. It's better to store your caravan with the pop-up roof open, but with the windows closed, says Cape Town's caravan doctor Johannes Knipe.



SEAL IT

The waterproofing and servicing of your caravan is vital to keeping it in good condition. Resealing a caravan is a job for the pro's, however, says Johannes.

"Some guys will tell you they can waterproof it, but the job is done in a day. All they're really doing is some decoration. It takes an experienced tradesman a week to waterproof a caravan – if there are no serious problems or things like wood rot.

"It's really hard work! You have to remove and clean all the aluminium strips, rubber seals, windows and everything that can

come loose. Then you have to replace the old stainless or mild steel screws with new ones. Screws can rust, causing the holes around them to rot, leading to wood rot."

You can't always see the small aluminium rust holes right through the outer panels of a caravan with the naked eye, but they can also cause wood rot. You can fix the rusty parts by fitting a plate at the back over of the holes. "We use Butylene-X for sealing and Tectane for touching up around the aluminium strips, windows and sides." (Both these products are made by the Dutch sealant manufacturer Den Braven.)



KEEP YOUR CARAVAN WATERPROOF. Rather pay the pros to make your caravan waterproof than paying thousands later on to get rid of a bunch of wood rot.

Depending on the size of your caravan and the amount of windows, it costs between R2 500 and R4 500 to waterproof it properly.



BATTERY

It makes no sense keeping the battery on a charger while a caravan is parked or in storage. If you have a second car that stays at home while you go camping, it's a good idea to use its battery in your caravan. Swop the batteries before you go camping and just swop them again when you return.

DISCONNECT IT. If your caravan is going to be parked for a while, it's best to give the battery a rest, too.

SERVICE IT

Your caravan needs regular checkups and services – top to bottom and front to back, says Johannes. “How often you use it will determine when you’ll need to have it serviced. If you’ve already been to the Kgalagadi twice, as well as once through the Kruger National Park, its high time for a service. Some guys even service their caravans after every trip to the Kruger.”

According to Johannes, caravanners see the biggest issues around brake systems and wheel bearings that haven't been taken care of or serviced properly. Another big issue is tyres that are too old, even though they still look new.

“If the drum brakes don't look good anymore, the brake pad has to be replaced and the drum sanded clean. I'd estimate about half of the caravans on our roads don't have properly working brakes, simply because they haven't been tuned right or because the cable isn't tight enough. It's best to have your brakes serviced and tuned by someone who knows what they're doing. I take my Land Rover to a Land Rover mechanic, because that's how it should be done.

“Applying some grease to the wheel bearings isn't enough; you have to remove them, clean them thoroughly and see if they're still in good condition. If any of the rollers are damaged, you have to replace the bearing. And you can't replace just one at a time – do them all. It's when wheel bearings break that wheels come off. Also, when you apply grease, make sure it's the heat-resistant type for wheel bearings.”



BEAR IN MIND. Wheel bearings can't simply be greased. Remove them and inspect them properly.

If your caravan has been standing for a spell, check the wheel bearings, says Johannes. “The wheels carry an enormous amount of weight and withstand a huge amount of resistance. You don't want to try getting from Cape Town to Gauteng on damaged bearings.

“One of the biggest mistakes caravan owners make is to think their tyres are still in good condition just because they



haven't see a lot of mileage. The tread might still look good on a tyre that's five or six years old, but those tyres get porous and weak.

“Cracks on the tread area can cost you your caravan. I replace my tyres every three years.” The good news is that a caravan that's been looked after can still look brand new after 15 years. Your kids could still use it to go camping one day!”



STOP, LOOK Keep your caravan's brakes in good condition and replace the brake pads as soon as they start to look worn.





6 REPLACING YOUR OWN WINDOWS

Just like you (or your eldest) have to mow the lawn or fix a leaking tap from time to time, it's sometimes necessary to do a bit of maintenance on your caravan. Some campers have no qualms about servicing their own wheel bearings or even the coupling, but certain tasks are even easier than that – like replacing a cracked or broken window.

A caravan's Perspex windows can start to crack due to age or wear and tear, especially around the latches screwed to them.

Here's a step-by-step method to replace them. It's so easy, anyone that can handle a power drill and a screwdriver can do it.

STEP 1

Take it off

The windows of your caravan that can open and close have hinges attached to two aluminium strips that run at the top of the window. One strip is attached to the caravan, the other to the window.

The window slides into the strip attached to the caravan, almost like your side tent slides into those grooves on the edges of the caravan's hull, but with enough play that it will move when you open the window.

To make sure the window don't move



around on it's own accord, there's a rivet on both sides of the strip.

1 Remove the rivet on the side you want to remove the window.

2 Unscrew the gas struts (the ones supporting the window when you open it) and lift the window as far as you can.

3 Slide the window out while you hold it up, in the direction where you just removed the rivet.

STEP 2

A final push

1 Put the window on a flat surface, preferably covered in something soft so that

you don't scratch it while working on it.

2 Remove the screws of the old window latches. You'll see a spot on each side of the window where the screw goes through the latch and the window, as well as a rubber seal on both sides. If they're damaged, get replacements at any decent camping store.

STEP 3

Decide how

The new window won't have holes for the latches, so you'll have to mark the windows where you want to drill the holes for them. There are two ways: You can put the old window on the new one and mark the spots

where the holes were on the old one, or you can hang the new window in place on the aluminium strip first. Then you can mark the places to drill according to where the latches are (the latter method is more accurate.)

1 Slide the new window into the groove. If it's a bit tight, use a lubricant like Q20.

2 Lower the window and make sure the outside edge fits snugly over the window's rubber seal in the caravan's hull behind it. Now ask someone to get inside and hold the inside of the latches in place, as if they're closed.

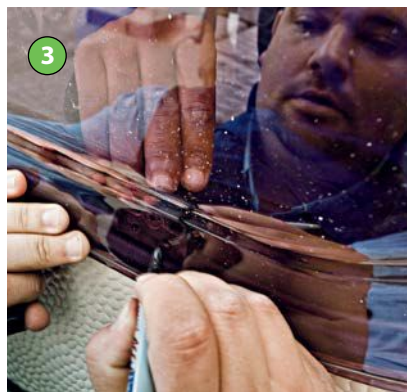
3 Mark the spots with a felt pen on the window from the outside.

STEP 4

Careful now

1 Put the marked window back on your work surface to drill the holes. Use a 6.5mm drill bit, but set the drill to rotate anti-clockwise. Your aim is more to melt than drill your way through the glass (if you set the drill to turn clockwise, there's a good chance that it will bite into the Perspex and damage or even crack it, especially if the drill bit is very sharp.)

2 Put the bit on the mark and start drilling. Don't press down; the weight of the drill is sufficient. Be patient, don't stop before the hole is drilled all the way through. If you



stop halfway, the hole will be uneven inside, making it difficult to drill when you start again.

as well.

STEP 5

Put everything back

1 Put the screws back into the latches. Remember to return the rubber seals

STEP 6

Finish up

1 Slide the window back into place in the aluminium strip.

2 Screw the gas struts back into place.

3 Put a new rivet in.





7 STRUT YOUR STUFF!

In most caravans and trailers, a gas strut is a common piece of equipment. Some keep the nose cone open, others lift the bed base so you can access the packing space underneath, while others help you to open the roof-top tent. And then there are gas struts that help you open the pop-up roof on your caravan and keep it in place.

As with most other consumable parts on your caravan, the gas struts are going to need some attention at one point or another. Gas struts are actually cylindrical capsules with about 100 bar of pressure inside. That's about 50 times more than your car tyres.

But the struts can lose their oomph after a while. So when the pop-up roof suddenly doesn't pop anymore, it's most probably because the struts are past their prime. Luckily, you can replace them yourself.

SO, WHERE TO START?

A caravan's pop-up roof rests on four gas struts – two on each side. To replace it, you have to service the front and rear of the roof separately. (Besides, it doesn't make sense to replace only one or two of the struts, and while you're spending the time and making the effort, you might as well do them all.)

Keep the following close

- at least one other person to help
- new struts
- two 5-litre paint cans, or other containers of roughly the same height
- about 6m of medium strength rope (depending on the length of the caravan's body)
- screwdriver

This is what needs to happen

- lift the roof and let it rest on the paint cans
- the canvas sides need to be removed
- the inside latches need to be loosened
- the old struts need to be replaced
- the canvas needs to go back in

OPERATION GAS STRUT

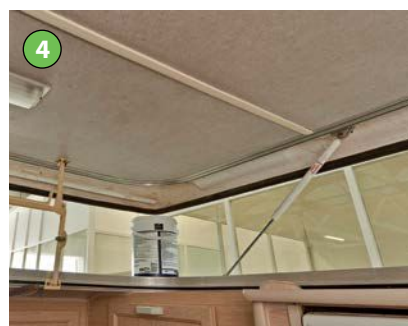
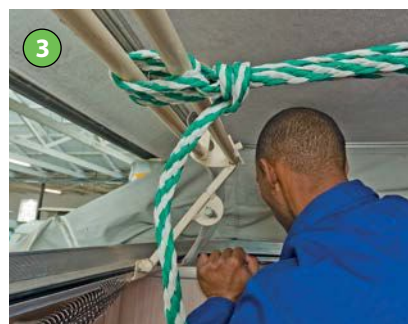
1 Lift the pop-up roof and put the paint cans on diagonally opposite corners. Place them halfway under the edge of the roof. (If you're a belt-and-suspenders kind of guy, you can put a can under every corner, but two's fine.)

2 Pull the handles of the roof's latches towards each other with a rope that you've tied between them until the gas struts start to give and the roof rests on the cans. The idea is to relax the tension on the roof canvas between the pop-up roof and the caravan so that you can remove it. **1**

3 Find the place where the canvas is attached, then pull the Velcro and zips open. **2**

4 Look and feel around for the opening in the aluminium groove where the canvas slides out – the groove is similar to the one where your side tent slides into on the edges of the caravan's hull. The groove's opening is somewhere on the side on most caravans and seldom in the middle (in the length) of the roof. The roof canvas on caravans built before 1990 was fastened with some screws and a flat aluminium strip. On these, you simply unscrew the strip.

5 Pull the canvas in the direction of the opening and thread it out. **3** It's a lot easier if someone helps you here. While one person is pulling the canvas out at the opening, the other one can help by pulling on the canvas, in the same direction of course. There's a good chance you won't be able to get it out on your own. And make a



mental note of how you threaded it out – it has to go in the same way. With older caravans, there's a good chance that you'll find some oil stains on the canvas where it lies close to the struts. So while the canvas is removed, you have a good opportunity to clean it. Just remember to seal it again before you put it back in this case. If the canvas is very worn, or some of the mesh in the roof windows in it are torn, consider replacing it. A new canvas will cost between R2 800 and R4 500.

7 Place the paint cans on the corner on the same side (at the front and rear) where you plan to remove the first two gas struts. **4**

8 Unscrew the strut from its housing in the fitting attached to the roof. It's not necessary to unscrew the entire fitting. Just remember, the bottom and top of the strut unscrew in opposite directions. Start with the top part – when the strut is almost loose, you have to depress it slightly and give it a turn to get it out. **5**

9 Unscrew the other strut as well.

10 Pull down on the roof's latches so

that the sides of the roof can rest on the cans. Ask someone to hold the roof for you so that it doesn't fall on the cans when you do this.

11 Unscrew the bottom screws of the roof latch. There should be three on each sides. **6**

12 Unscrew the feet of the new gas strut, because the feet of the old strut are still in place where the old strut was screwed in at the top and the bottom. **7**

13 Screw the narrow part of the new strut into the foot on the caravan. **8** The thicker part of the strut should show upwards once it's in place.

14 Lift the roof on this side with your helper(s) so that you can screw the top of the strut in place on the pop-up roof.

Remember to hold on to the thin side while your screwing in the top part, otherwise the bottom will unscrew as your trying to fasten the top part. **9**

15 Press the roof down slightly from the outside (your helper can lend a hand again over here) so that you can screw in

the latch again. **10**

16 Move the paint cans to the other side and repeat the process.

17 Fasten the rope through the arms of the latches again and place the cans at diagonally opposite corners again before you pull the rope tight until the roof lowers slightly again. **11**

18 Thread the canvas back in. **12** The person threading in the first part of the canvas should be inside the caravan while the other one feeds the canvas through from outside. Make sure you keep the canvas upright. The mesh side should face towards the outside and the zip bow of the flaps in the window should go upwards. Don't pull on the mesh as you're putting the canvas back as it can rip. The canvas over the corners is strengthened **13**, making it a good place to grip it as you're pulling and threading it in until it's neatly in place.

19 Loosen the rope and let the struts do their job. Now the pop-up roof is ready for many summers by the sea at Scottburgh.





CANVAS CARE

A tent is like married life: If you give it love and attention, everything's plain sailing, but if you neglect it, you'll sleep outside.

Caravan tents are still made of canvas – just like they were twenty years ago. However, today's material is vastly different from what was used yesteryear.

Current tent canvas can last a lifetime, but the lifetime of your tent depends on the manner in which you maintain it.

BEWARE OF SOAP

The canvas material is sealed in the factory as soon as it's woven. The material is plunged into a container with a waxy sealant and a special agent to protect it against mildew. The sealant is therefore not merely on the material, but absorbed into the fabric.

Domestic soap and cleaning agents are chiefly made to remove grease, so if you use them to wash your tent, you run the risk of destroying the waxlike sealant, leaving you with a leaking tent. It is not the material as such that is damaged owing to a thorough scrub down with soap, but it's the

waterproofing that is destroyed.

Rather try to get rid of spots or stains with lukewarm water and a sponge.

If a troublesome seagull has left its mark on your tent, water isn't going to have any effect.

In this case, do the following:

- **Use** a bar of green Sunlight soap. Don't use washing-up liquid or washing powder. They're too concentrated and will damage canvas.
- **Dillute** the soap by rubbing it down in lukewarm water until the water begins to turn milky.
- **Scrub** evenly over a large section and not on a small area.
- **Brush** lightly over obstinate spots.
- **Remember**, you won't be able to see if you're damaging the material. On the surface, everything will seem alright. You'll only find out if your tent is still waterproof next time you're camping and a midnight thunderstorm breaks.
- **Make** peace with any spots that remain after the wash. Now your tent has a new "attitude" and extra character, proving your camping experience. Besides, it's either the spots or a leaking tent.

A "CRACK" ALONG THE SEAM

When your tent starts to leak, it will probably start along the seams. When it gets wet for the very first time, the stitching expands, sealing the holes through which the stitching passes. Because air is always slightly moist, the stitching does not shrink again once the tent dries – unless you store it for years in a bone-dry place. If a seam does continue to leak, you can apply tent sealant to make it waterproof once again.

PATCH

If your tent gets a small tear by accident, it's not the end of the world. You can patch the damaged section in almost the same way you patch a bicycle tube. Nowadays, most tent canvas is woven as ripstop or tear-resistant fabric, and for this reason the chances are slim that a small tear or hole will go any further into the fabric by itself.

Buy a repair kit at a camp equipment store so that you can easily repair your tent yourself. Always cut a round patch out of the fabric. Then apply the patch to the hole or tear on the outside and on the inside of the canvas.

If you don't have a tent repair kit handy, use any other waterproof material with glue (such as Genkem). And if you're somewhere in the bundus with nothing else at your disposal, even duct tape will do.

It's best to sew a piece of canvas on the damaged area. However, the material is too thick for the mechanism of an ordinary machine and will cause severe damage to it. Take it to a tentmaker to have the patch sewn on correctly.

HOW TO EXTEND THE LIFE OF YOUR TENT

Double flooring. Pitch your tent on a groundsheet, even if the tent is fitted with a PVC floor. In this way, you won't get any mud or dirt on the tent floor that can soil your tent when you pack it up again after your stay.

Plan B. If you don't have an extra piece of canvas or a groundsheet, pitch the tent on a clean surface, like paving or grass. Also avoid stepping on the canvas section when folding it away.

Forget about high-pressure cleaning equipment. Never use high-pressure equipment to clean your tent. It spells disaster for the tent's material.

A bird in hand. Birds perch and make nests in trees, so tents pitched in the shade are often bespattered with you-know-what. Trees such as thorn trees can also soil tents with their gum.

It also has a soul. Keep open flames, concentrated cleaning agents and

soaps as well as insecticides and deodorants away from tent canvas.

Cook on the other side. Never prepare food near or immediately next to the tent. Oil splattering from the food will leave spots on the canvas

Rather let it dry first. Don't fold up and store away a wet or moist tent. The canvas must be perfectly dry before you do this. If it's raining when you strike the tent for the journey home, pitch it again once you arrive so that it can dry completely.

Beware of rust. Keep your tent pegs separate from the tent itself. They can cause damage to the canvas and even leave rust stains.

Stay off the cement. Don't store your tent on a concrete or cement surface – it allows the canvas to draw moisture. Store it on a shelf some distance from the floor.

BEWARE OF THE SEA AIR

Ocean air is not just bad for your car, it's equally bad for your tent. You can even get small black spots of soot deposited onto the material if you camp at the seaside for a long time. The outer layer of a tent pole is also susceptible to white rust, which in turn corrodes the pole. Even the metal component of a zip isn't immune to rust. Use thin oil (such as Q20) and a piece of cloth to apply a thin layer of oil to prevent corrosion. Don't try to spray the poles with oil while the tent is pitched; rather follow the steps above. You can, however, spray some oil inside the poles to protect them on the inside as well.

9 HOW TO STOP WOOD ROT

It's not the end of the road if your caravan picks up wood rot – it can be repaired. You can fix small small patches of rot yourself, but if it's spread over a large area of wood, you'll need to call in the pros.

The problem usually starts at joints, mostly when water leaks past rubber seals and aluminium strips in your caravan's roof and windows.

Sun, wind and rain causes the rubber to harden, which means that eventually, it won't seal properly anymore and water and moisture can seep through. Rusty screws under seals create tiny gaps for moisture to creep into panels and frames. Handles are also a problem area, especially when the plastic starts to wear away.

Remember, the outer hull of your caravan is made of aluminium, and the inner shell of plywood with a plastic coating. Therefore, the hull is waterproof, so once the moisture gets trapped inside, it stays in the wood. The more the wood rots, the easier water will seep in and the rot will spread.

IS IT HEREDITARY?

Most local caravans are susceptible to wood rot. Some offroad caravan manufacturers use almost no wood in their products, but the majority of caravans on our roads are at least partially made of wood.

Even some of the off-road caravans are sometimes made of wood; and although you might see aluminium finishing on the outside, the side panels, roof and floor inside could still be made of wood.

WHAT DID THE DOCTOR SAY?

A variety of fungi that break down organic material can cause rot. Just like the virus that your youngest picked up on the playground is breaking down his immune system, the mould is breaking down the organic material (wood) in your caravan.

The mould needs food, water and oxygen to flourish. The cellulose and lignin in the wood serves as food, but if the water evaporates and the wood gets dry,

the fungus will die. Unfortunately, chances are a few spores will already have settled in other places in your caravan by then. These spores will lie dormant until the conditions are favourable, and you'll have the same problem all over again – even if it seemed as if your troubles were over.

HOW DO I KEEP MY CARAVAN HEALTHY?

Regularly remove the aluminium strips.

Apply an oil-based sealant – such as Powermastick – underneath. Remove the old sealant with a scraper. If this doesn't work, try a bit of petrol on a cloth.

Lubricate the holes. When you apply the sealant, make sure you spread it over the screw holes. When you screw the strips back in place, the pressure will ensure that the sealant spreads evenly under the strip.

Replace the screws. The screws under the rubber seals should be replaced every two years. You'll be surprised how much damage moisture can cause to screws. Copper or stainless steel ones last longer.

New rubber. The rubber trips can be replaced every two years.

Make drainage holes. Drill a few holes in the aluminium strip under the door so that any water that gets in can seep out there.

HOW DO I KNOW IT'S SICK?

Keep your service book updated. Have your caravan serviced once a year, and ask the workshop to check for moisture in the panels.

Look at this. Check the joints at the aluminium strips on the roof, and the parts around the windows (especially around the top ends), first.

Be careful of wrinkles. If the interior panels seem uneven, as if the wood is starting to 'wrinkle', there's trouble brewing in there.

... and cellulite. You may not be able to detect wood rot with the naked eye, so you'll have to feel around for it. Start on the inside of your caravan and press the panels with your thumb. If some areas feel softer than others, it may be rotting inside.

Take it to the doctor. To have your caravan checked with a moisture meter, pop in at your nearest Jurgens Ci dealership. A test takes about 30 minutes. They take measurements on the panels inside the caravan. If the meter gives a green

light, everything's hunky dory. An orange light means some moisture might be forming, but if the meter goes red, your caravan probably has wood rot.

HOME REMEDIES

Cut it off. Use a carpet knife to cut the rotting wood away. You'll probably have to scrape the polystyrene clean where the panel was glued to it.

Get a new panel Buy a new panel similar to the inside panel of your caravan at a dealership (panels for caravans built before 1988 are hard to come by). Cut it to size.

Glue it. Use wood glue and panel nails where necessary.

Fill the joint with silicone. Make this neat and tidy or use an aluminium strip. If you need to replace a part of your caravan's frame, cut the rotten part out entirely. Replace it with a new piece of wood and set it with a splint.

WILL IT NEED SURGERY?

If you prefer to take your caravan to a workshop to get rid of dry rot, it doesn't need to cost you an arm and a leg.

On average, mild damage will cost between R6 000 and R8 000 to repair. But if you allow dry rot to get a real grip on your Exclusive, you could be looking at repair costs of up to R40 000.

Depending on the scale, repairs can take anything from three to 12 weeks. It also depends on the availability of spares.

go! Drive & Camp says Chances are you won't be able to see or smell wood rot before it's too late. But with a moisture meter like this, a dealer will be able to quickly determine what the problem is.





Good to know

Camping can be fun – as long as you know your way around things like electricity and how to get your DStv dish up and running. And of course it also helps if you've packed everything you need for your holiday, like a fully kitted out tool box.

1 ACCORDING TO THE RULES

The national guidelines for standards in campsites, SANS 10092:2004, has stirred up a lot of debate and campsites will be hard pressed to comply with some of its prescriptions. However, one issue most people agree on is electrical outlets.

Melanie van der Westhuizen, a reader from Kempton Park, encountered a power outlet at a popular resort in the north of the country where the Volt-reading at their stand was 420V (instead of 220V). They used it... and their caravan's wires melted. Melanie and her group could come to an agreement with the resort's owners in terms of the damage, but a power outlet like that could actually cause a lot more damage than it did.

ON POINT

We spoke to the Western Cape Approved Electrical Inspection Authority (WCAEIA) to find out what the authorities prescribe for electricity in camping sites. The WCAEIA is accredited to do inspections of electrical

installations on behalf of the Department of Labour. Resorts must comply with a set national standards (SANS 10142/1:2003) that clearly spell out what the criteria and requirements of power outlets – among other things – are.

Over, under and around

According to the prescriptions of the SANS 10142 of 2012, electricity can be wired at your stand in two ways: The resort can lay an underground cable (as long as it is buried at least 50 cm underneath the ground), or it can be a overhead power cables – almost like the telephone poles in the vast plains of the Karoo. The condition for this is that the cable must be at least 4 m above ground.

If the cable runs underground, it must be routed in such a way that it runs around the stands and not directly beneath the areas where tents are pitched or caravans are parked. This is ostensibly to prevent a long tent peg from being hammered into a live power cable - imagine that.

Take note, please

There should be a notice at the power point

itself, highlighting the following:

- the supply (in Volt);
- if it's an alternating or direct current;
- the maximum allowed load (in ampère).

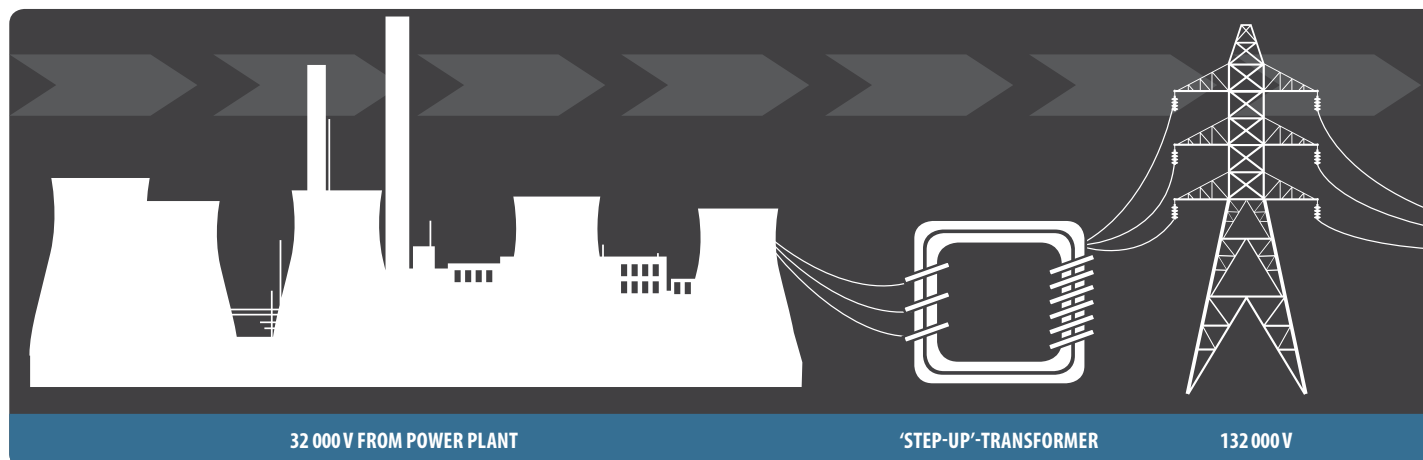
That's enough!

Furthermore, the national standard determines that every power point should be furnished with its own circuit breaker. Although some people still refer to, for example, 15 A circuit breakers, they're not available anymore.

These days, the standard is 16 A (currently, circuit breakers are available in 6 A, 10 A, 16 A, 20 A, 25 A, and so forth). The 16 A is incidentally also the same grading as a standard three-pin plug. But it's not necessarily the case that you can utilise 16 A at your stand. It's up to the resort owner how much electricity he wants to supply to campers. In practice, it means that your ice maker, aircon and microwave will maybe work at Camp A, but at Camp B, your kettle might just trip the power.

The blue code

In general, you see a lot more of the





CURRENT AFFAIRS. The 420 V reading on the sock at Melanie's stand is way too high, if you look at the guidelines of the authorities.

standard three-pin sockets (like the ones you have at home) at camping sites than the blue caravan type.

Still, according to the SANS directive, the blue ones are the prescribed norm. A household 16 A sock is also legal, as long as it is grouped in a weatherproof box. The box should also be waterproof when your caravan is plugged in.

One for you and one for me

According to the regulations, there should be one power outlet for every stand, and there shouldn't be more than six of them together. Electricity that comes from the distribution board to the power outlet should be connected to an earth-leakage circuit breaker of no more than 30 mA.

It used to be 20 mA, and in an ideal world, resort owners should rather install an earth-leakage switch on each power outlet

instead of just one distribution board.

Come closer

It shouldn't be necessary for you to take along yards and yards of extension cord. The prescription determines that a power point is not allowed to be more than 25 m away from your caravan. The sock where you plug in your caravan's cable, should also be at least 1 m above the ground.

WHAT ABOUT THE 400V?

Depending on where in the country the power is generated, the initial current ranges from 32-132 kV. As it is being conducted through the high-tension wire to the resort, the power changes from 11 kV to 400V in the distribution board. From here, it can be supplied to the power outlet in single-phase power (230V) or three-phase-power (400 V).

The case of Melanie's 420V reading on the blue socket probably had nothing to do



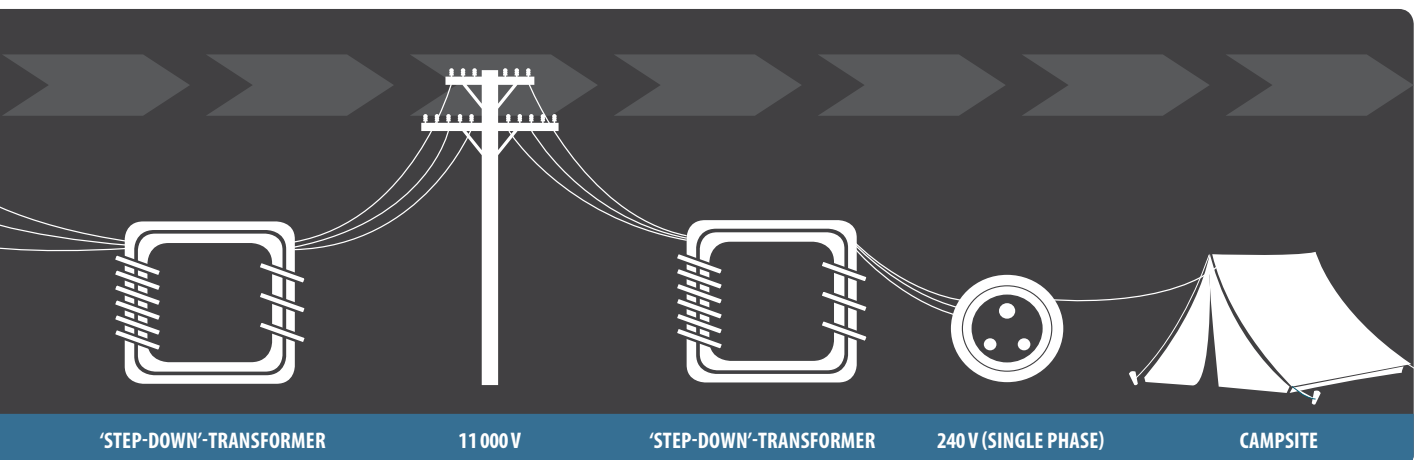
WATERPROOF? Every power point must be waterproof, regardless which type of socket it is.

with 400V-three-phase power. The official three-phase plug is red and has four points, as opposed to the three of single-phase. According to Melanie, she was informed afterwards that the specific plug was incorrectly wired.

WHEN DO THINGS CHANGE?

From a legal perspective, there is very little that can be done to resorts who currently do not comply with SANS 10142, because it applies to new installations. All new resorts will have to comply with it, as well as resorts who change ownership – since a compliance certificate which uses the current 10142 guideline, must be issued for the resort's electricity supply.

go! Drive & Camp says If you can choose, rather stick to the blue plug. It's safe and complies with the authorities' standards.



2 DISH IT UP!

It's easier than you think to get your DStv dish to start communicating with a satellite in orbit around Earth.

These days, satellite dishes are as commonplace in campsites as kids on tricycles. And just because you're relaxing in the great outdoors doesn't mean you don't want to stay up to date with the news, your team or *Masterchef*. But do you need to be a boffin with a degree in electronic science to make it work? Not necessarily.

START AT THE BEGINNING

A basic portable satellite dish consists of a dish, a LNB (low-noise block downconverter), a 20 m cable, a shorter cable, a satellite finder with an earphone, a compass and screws, bolts and clamps to secure it. A set like this usually costs about R950 and you can get it at most outdoor shops – also at retailers like Ellies.

It's really not that difficult to set up. The most important thing is to position the dish in such a way that it communicates with a satellite. "The satellite your dish is looking for, is 36 000 km from earth," says Brendan Pontes from Ellies' commercial sales division. "So it's important to remember that a single centimetre can



make a huge difference when you start looking for a signal."

CHECK YOUR WATCH

The dish has three parts: The dish, the arm with the LNB signal receiver bracket, and the LNB itself. How you secure the LNB to the bracket is the most important part, says Brendan. "When the LNB is in the bracket, you'll see degrees marked out on the round part. Imagine you're looking at the face of a watch, then turn the LNB up to the point where the cable linking to it is more or less between 4:00 and 4:30. The reason for it being in this position, is to receive channels that get sent both horizontally and vertically. When the LNB is in place, you screw it tight with its clamp."

WHAT DO OTHER PEOPLE DO?

Brendon says a clever way to determine in which direction your dish should face is by looking at your neighbour's dish.

"Use the direction of other dishes in the campsite or nearby houses as a starting point. Get your satellite finder and connect it with the shorter cable between the dish and the decoder. Put the earphones on. It will emit a beep-sound and when the dish 'sees' a satellite, you'll hear the beep going up in frequency."

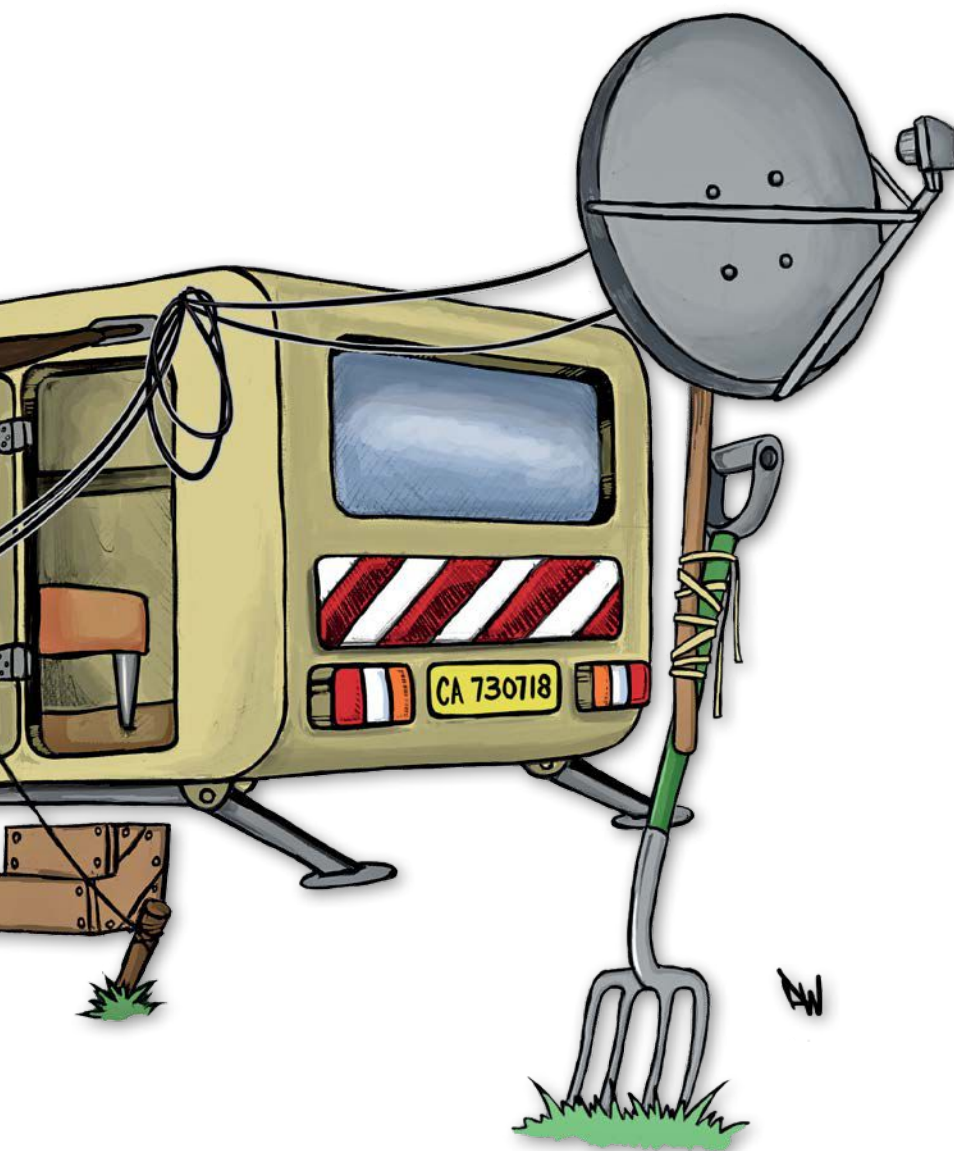
Brendan says he usually stands where the dish should be and then holds it in front of him while he faces east. He then makes sure that there are no trees or other obstructions before slowly starting to move his torso from side to side while listening out for the beep-sound.

"If the frequency doesn't change, I'll tip my wrist slightly upward to lift the LNB receiver on the dish ever so slightly. I then repeat the process until I lock on.

Then, I'll put the dish down and fetch the pole or tripod on which it will be mounted before loosely attaching it to that.



ESPECIALLY FOR CAMPERS. A set like this is just the ticket for your next trip.



"I'll then turn it again until I get the signal, before I secure it firmly. A big mistake many people make is to first mount the dish and then look for the signal. The process should be the other way around.

"There are two things to consider when you mount your dish: how upright or flat it should be, and in which direction it should face. In the north of the country, it should be positioned flatter than along the coast and everywhere in SA it should face somewhere between east and south-east."

BIGGER IS (SORT OF) BETTER

In terms of the size of the dish, Brendan says that bigger is better, but that does not necessarily mean that a smaller one can't do a proper job.

"The image quality on a camping dish can be as good as the one at home, but then again, a bigger dish does deliver better quality, because a bigger signal is

reflected to the LNB receiver.

The main thing to remember though is that there shouldn't be anything between the dish and outer space and that you should secure the dish firmly. If it's going to sway in the wind, it will cause interruptions.

Even the slightest movement in its position can mean the difference between a full signal and no signal at all."

WHAT ABOUT HD?

These days, you can't just remove your smart card from your decoder and pop it in another one to keep watching. Every DStv decoder is now married to its smart card, which means you need to take along the whole lot when you go camping.

If you have a second decoder and tele-

vision in your bedroom at home (*dual view*), you should make sure that you take your primary decoder along.

The LNB receiver that comes with your basic set is a single one. If you have a Explora decoder or any of the new HD models and you want all its functions when you go camping, you need a smart LNB receiver.

A smart LNB costs about R570 and is the best way to ensure that your decoder works. But you don't have to worry about being stuck with a lot of cables.

"You still only use just the one cable that you get with the portable set," says Brendan. "Plug that cable in the A-port on the smart LNB receiver and then in the LNB-port at the back of your decoder. Then your Explora will work just like at home.

"I would however recommend that you plug the dish into the Universal 1 port when you look for a signal, and then at the A port when you have acquired the signal. Some of the older decoders, like the HD PVR 2P, do work with the single LNB receiver, but you can't record. To do that, you need a smart LNB.

"The mistake people often make is to plug the cable into the wrong port, especially at the back of the decoder. You must use the LNB's in-port," says Brendan.

go! Drive & Camp says Test it at home first to make sure that all the channels and functions work. Then you won't have any trouble at the campsite. The more you do it, the easier it will get.



THE RIGHT FIT. The cable should be inserted into the A port for your Explora decoder.

3 MACGYVER'S DREAM!

Take the correct tools along and you can avoid spending lots of money or getting the skin scraped off your knuckles.

THE BASICS

If you get stuck along the way without certain basics, you're going to regret it.



When the sparks start flying

You don't need an appy with a soldering iron for all repairs. You can do many of these jobs yourself, right there at your stand.



1 SCREWDRIVERS **Got a screw loose?**

Trying to undo a screw with a key or a coin will just raise your blood pressure. Pack a collection of screwdrivers – flat as well as Phillips; large and small – or get one of those sets with a single handle

and shaft into which a tip of every kind can be fitted.

go! Drive & Camp says Black & Decker has a rechargeable screwdriver with enough tips to dismantle a cuckoo clock or a nuclear warhead.

3 SPANNERS **'Pass the number 13, please'**

On poor gravel road surfaces, parts take a beating and may come undone. You may even have to replace a leaf-spring or a worn-out shackle or bolt next to the road. A reliable set of spanners (avoid cheapies) is worth its weight in gold when that happens.

go! Drive & Camp says Consider buying a ratchet with a set of sockets for those occasions when space is limited and you don't want to transplant the skin from your knuckles onto the vehicle.



4 HAMMER **For those pounding tasks**

Technology has made considerable progress since Zog the Caveman used a

club for his daily hammering and carpentry. A modern handyman towing a caravan needs a decent hammer, especially for serious tasks such as replacing wheel bearings.

go! Drive & Camp says Get yourself a claw hammer so you can use it to pull out tent pegs.

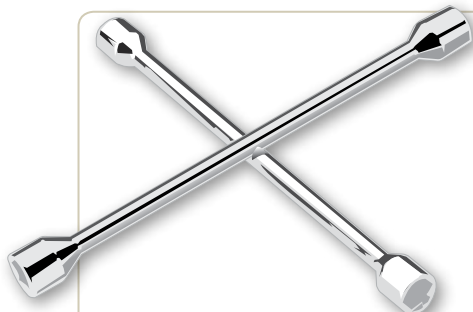
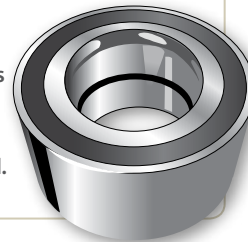


5 A WHEEL BEARING KIT AND GREASE **Messy, yet possible**

Wheel bearings that have seized are serious business – and replacing them isn't easy at all. First try to get hold of a mechanic to help you, or ask someone at the workshop back home to explain the procedure to you before you hit the road. (Your caravan trader should have the

parts in stock.)

go! Drive & Camp says For a weekend at the nearest resort, it would be overkill to have this knowledge, but for that overland safari, it is essential.



6 WHEEL SPANNER **Unlock your spare wheel options**

Try to have the same size wheel bolts or nuts on your vehicle and the vehicle being towed. If this isn't possible, get a cross wheel spanner with four different sized sockets.

go! Drive & Camp says A cross wheel spanner gives you more leverage, so the bolts or nuts can be loosened more easily.

2 MULTI-TOOL **The all-rounder**

Yes, you can take along pliers, a pair of big scissors, wire-cutters and a hefty saw, or simply take along (on your belt) your all-in-one multi-tool. What type? Leatherman and Gerber are the best-known ones but, of course, you will pay for the name as well.

Be wary of cheap imitations. They may look like the real deal, but the steel isn't as strong and the mechanisms don't work as smoothly. These guys will leave you in the lurch sooner than later.

go! Drive & Camp says Some Leathermans on the market have an adjustable socket into which you can fit a variety of screwdriver tips.



7 TORCH **Shine the light...**

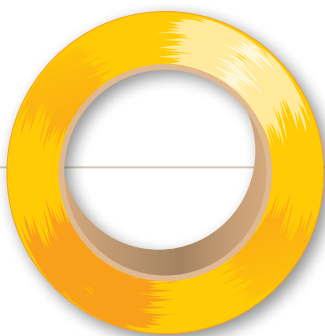
Murphy will see to it that your car breaks down after sunset and you're going to have a hard time fixing things in the dark without a decent torch. You'll even need a little extra light in broad daylight when looking for the source of that banging sound from the chassis.

Take along extra batteries or consider buying a wind-up torch.

go! Drive & Camp says Leave one torch in the toolbox and use another one for tasks at your stand in the campsite.

>





8 INSULATION TAPE Crossed lines

When it comes to electric wiring, insulation tape can be as indispensable as Boney M in December. The insulating sleeve of an electric wire can get

damaged, leaving the exposed live copper touching the coachwork or other metal on the vehicle. This will cause a short circuit and immediate disruption in the power supply. Sometimes the solution is simple: Wind insulation tape around the damaged section a few times.

go! Drive & Camp says Mark your tent poles using insulation tape with different colours to prevent a family quarrel when the tent is being pitched.

9 GLOBES/BULBS Be a bright spark!

What are the chances of finding the exact bulb for the rear light of your Sprite, say in Henties Bay or Willowmore? Buy a few spare globes from your caravan dealer prior to departure. The kiosks at certain petrol stations also stock globes, but don't bank on it.

go! Drive & Camp says These bulbs are available in various voltages: 12V and 24V, and with either single or double contact. Make sure you buy the right ones.



10 BOLTS AND NUTS Beware of stripping

The threads of bolts and nuts eventually become worn out, so it's advisable to take along a variety of the most common sizes of both of these. Also remember to take along a few U-bolts in case your caravan's are bust.

go! Drive & Camp says If it rains a lot on your trip, you can use the bolts and nuts to play draughts.



12 CABLE TIES Ziiip! You're not going anywhere!

You can use these for virtually any tying-up job – from cupboard or cabinet doors that swing open while you're towing, to a bunch of tent pegs that are clanging noisily in the boot.

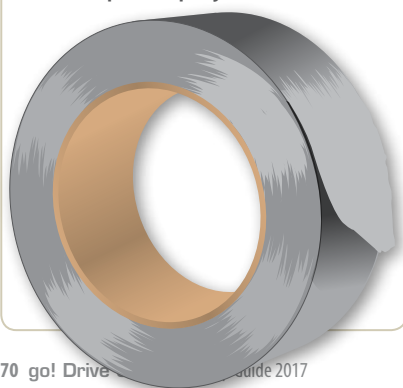
An ordinary cable tie can be used only once since you need to cut it free, but there is also a type that has a catch that can be loosened and fastened as often as you like.

go! Drive & Camp says You don't need cable ties of extraordinary length. They are easily joined together to form a chain of a required length.

11 DUCT TAPE The king of tapes

OK, it may be quite expensive but there are very few things that you can't secure with it. Even if a roll of duct tape has been lying at the bottom of your toolbox for years, it will secure that loose brake light lens in a jiffy.

go! Drive & Camp says You can also decorate Tubby's headband with a thin strip of tape before his big interschools rugby match, and use it to patch up injuries afterwards!



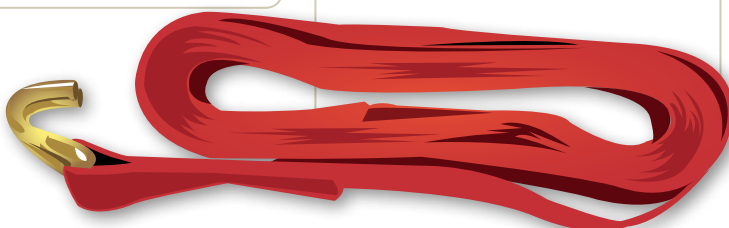
13 RATCHET STRAPS Solid strapping

If you can't tie a slipknot, a ratchet strap lets you save face. It's a strap with a mechanical buckle which you can tighten until the luggage on the roof rack is securely in place.

You can also use such a strap to secure any heavy object inside your caravan for the trip. (*No, not your mother-in-law. – Ed.*) We previously wrote about a fellow who tied a tree branch under his off-road trailer with ratchet straps for support after the chassis collapsed.

So we highly recommend that you buy several lengths of these straps and keep them in your car. You never know...

go! Drive & Camp says Yes, rope does the job too, but you will never get it as taut as these straps.





14 FUSES

Has someone blown a fuse?

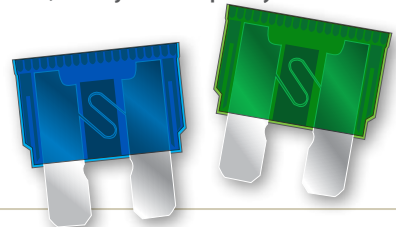
Whenever the electric system of your car loses it, the fuses will blow. Actually, replacing a fuse is easy – that is, if you have a spare one in your toolbox.

The fuse box is usually located under the dashboard on the passenger side. Open and inspect it to locate the fuse of which the wire has burnt off. Replace it with a new fuse with the same capacity as

the last one. (A fuse is graded according to the current that it can handle – 10 A, 15 A, 20 A, and so forth.) If the new fuse blows immediately, it indicates a more serious problem elsewhere in the circuit. That's when you have to call Sparky's Auto Electrical.

go! Drive & Camp says Like

MacGyver, you too could use a piece of tinfoil instead of a new fuse, but remember, that's just a temporary measure. ⚡



When you hit the road to go camping, safety isn't on the forefront of your mind. But just like everywhere else, campsites may be riddled with danger – from insects to gas canisters, the sun and the swimming pool. Be informed and be prepared!

1 FOR SAFETY'S SAKE

We all go camping to escape the trials and tribulations of the daily grind and to simply savour a few days with our loved ones and experience some of the most beautiful parts of our country.

And yes, even though you are chuffed with your new offroad-caravan, you should realise that it's not your most precious possession.

That honour (we hope) belongs to your family. But how do you protect them – especially your children – when you go camping? We asked our readers, certain holiday resorts and other experts for tips and they gave us these top ten guidelines to keep your loved ones and kids safe and out of trouble.

1 BE BACK AT THE CARAVAN BY THE TIME IT GETS DARK

This rule shouldn't be negotiable. It's great to know that your kids are enjoying their holiday in a protected environment, but by the time the sun sets, everyone needs to check in at base camp.

2 WHERE DO DANGERS LURK?

Take a stroll through the campsite and look for possible dangers such as unsafe power points, snakes, scorpions, spiders and other nasties. Make your children aware of these dangers. If there's something the resort management need to fix, inform them of it as soon as possible.

3 THE RED CROSS

Never go camping without a basic first-aid kit. This is so obvious that we shouldn't

have to mention it. Double check that none of the pills, ointments and other meds have expired.

4 KEEP THEM BUSY

The devil finds work for idle hands and one of the best ways to keep your kids out of trouble is to ensure that they never become bored. Take things like board games and books along for those days when the weather isn't playing along.

5 THE MORE, THE BETTER

When possible, camp in a group with friends and family. This makes it easier to keep an eye on children. But be wary of shared responsibility.



ties and don't assume that someone else is looking after your kids. When you're unable to look after them, ask someone directly to do so.

6 SAVVY SWIMMING

You don't need to be told that small children should never be left unattended near a swimming pool. And don't expect older children to look after the little ones either. Kids will be kids and they're easily distracted. If yours can't swim yet, they're not allowed to go to the pool without adult supervision. Period.

7 DRAW THE LINE

Draw an imaginary boundary line around your campsite and show your kids exactly where they aren't allowed to go without your permission, or without you. This way, you motivate them not to wander out of sight or leave the resort.

8 KEEP THE NUMBERS CLOSE

Be sure to have the phone numbers for the local police, emergency services and resort management at hand. You don't want to scramble for them in case of an emergency. Having pertinent details close at hand can save valuable time.

9 SAFE IN THE SUN

Don't underestimate the African sun. Protect your children's skin with sunscreen and make sure that they wear hats. Sunstroke is bad enough but a child with sunburnt skin and running a fever is doubly problematic.

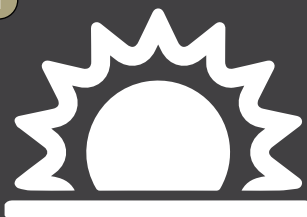
10 TALK TO ME

Children who are old enough to use a phone should have a cellphone with them at all times, so that they can call in case of an emergency. Make sure they have airtime and that their phone's battery is loaded. If they're not old enough to use a cellphone, they should rather not go where you can't keep a watchful eye them.

go! Drive & Camp says Nobody wants a bunch of rules and regulations when they go camping, but if you can adhere to these basic measures, you'll have more peace of mind about the safety of your kids.

KEEP YOUR KIDS SAFE

1



Children must be back at the caravan by the time the sun sets

2



Take a stroll through the camping site and look for dangers like snakes, scorpions and other nasties

4



Keep them busy

3



Never go camping without a first-aid kit

5



Camp in a group – it makes it easier to keep an eye on kids

6

Don't let kids swim alone and don't ask older kids to look after the little ones at the swimming pool



7



Keep important phone numbers close

8

Don't go camping without a hat and sunscreen



9

Ensure that kids who are old enough to use a phone always have it with them



10



Draw an imaginary boundary line around your campsite and show your kids exactly where they aren't allowed to go without you

2 MOMMY, I HAVE A BOO-BOO

Is your first-aid kit filled to the brim with unnecessary meds, or do you still need a few essentials?





1 PLASTERS

Kiss it better...

If you want a cut or a scratch to heal quickly, just cover it with a Band-Aid. It not only prevents infections, but also keeps the wound moist, which facilitates the growth of new cells. Plasters come in a variety of shapes and sizes.

go! Drive & Camp says Consider a pack of SpongeBob SquarePants or the Little Mermaid themed plasters as well – this will help your little one keep her arm still.



2 GAUZE COTTON

First apply an undercoat

Gauze cotton is loosely woven with small holes, which prevents it from clinging to open wounds like ordinary finely woven material would. Cut out a square to protect graze wounds before applying a bandage.

go! Drive & Camp says Use strips of gauze bandage to keep bigger bandages in place.

4 DISINFECTANT

This is going to hurt just a little bit...

Use this to clean out open wounds before applying a bandage or plasters. It sterilises the wounds and helps to clean out bacteria that cause infection. The fluid also helps to wash any grit or other dirt from the wound. It may hurt a little (okay, a lot) to cleanse broken skin with Savlon, because the disinfectant does

sting, but this is essential if you want the wound to heal quickly with minimal scarring.

go! Drive & Camp says There's nothing wrong with Dettol, but Savlon burns less when it's applied to a scuffed knee.



3 SMALL SCISSORS

Cutting edge

Apart from the obvious applications – like cutting bandages – scissors are also useful at accident scenes to cut away an injured person's clothing to treat their wounds, since it hurts too much to take off their clothes. Johnny will forgive you if ruining his favourite T-shirt will help you dress his wounds.

go! Drive & Camp says Play it safe: disinfect the scissors with Savlon.



5 TWEEZERS

Get a grip

It's useful to remove thorns and splinters. If a splinter has penetrated quite deeply, first try to loosen it with a needle. The needle of a syringe is best, because they are razor sharp and comes in sterile packaging.

go! Drive & Camp says Rather hide the tweezers at the bottom of the kit in case little Suzy gets hold of it and starts plucking her eyebrows.



6 CREPE BANDAGE

That's a wrap!

They're long and narrow (usually about 10 cm wide) and made of a material that stretches so that it can easily be wound

around arms and legs. Use it to cover large, open wounds and scratches only after you've covered these with gauze bandage. You can also bandage twisted ankles with crepe.

go! Drive & Camp says Take care not to apply the bandage too tightly over a wound. You could end up obstructing the flow of blood to extremities.

7 PAINKILLERS

Take the pain away

It's indispensable to treat common pains such as headaches and a sore throat, and it helps to reduce fever. Aspirin isn't recommended for kids, so it's best to pack Panado. For severe pain, you'll need a stronger painkiller. Get a prescription from your doctor and fill it before travelling to remote areas.

go! Drive & Camp says Panado is also available as a chewable tablet, syrup or effervescent tablet for little ones who can't yet swallow pills easily.



8 TRIANGULAR BANDAGE

Slip it in a sling

You'll need a sling to support a broken collarbone or arm and keep everything in place. The easiest way to devise one in an emergency is by means of a triangular bandage. Simply let the injured limb lie in the middle of the bandage and tie a knot behind the person's neck with the two corners.

go! Drive & Camp says You can also attach the sling to clothing with safety pins. >





9 LATEX GLOVES

Leave no finger-prints

These are essential if you're treating open wounds. Gloves not only protect an

injured person against your germs, but also keep you from being infected by a stranger's blood.

go! Drive & Camp says If the kids are bored, they can use the gloves as balloons or water bombs.



10 ANTACID TABLETS

Chew mint for the big burn

You knew better than to buy those pies along the way, but they seduced you with their good looks... and now you're left with a bad case of heartburn. This is a typical holiday ailment and there is a variety of antacid products on the market. Rennies is cheap, effective and don't become chunky or dry if they spend too much time in the first-aid kit.

go! Drive & Camp says In an emergency, you can also try a glass of milk or a small tub of yoghurt.

11 REHYDRATION SACHETS

Refresh yourself with water

If a bad stomach bug forced you to wear out the footpath to the ablution block the previous night, a dose of Rehidrat is essential. This solution helps to replenish valuable salts that you parted with the night before.

go! Drive & Camp

says Buy a variety of flavours, since people have different preferences and cannot swallow anything they don't like when they're already green around the gills.



12 EYE DROPS

Why are your eyes so red?

Conventional saline solution eye drops are fine for dry and itchy eyes, but Spersallerg is the answer for serious eye irritations. The antihistamine it contains will take care of the allergic reaction caused, for example, by pollen or cats.

go! Drive & Camp says Remember, eye drops usually expire a month after the seal has been broken.



13 BURNSHIELD

Ouch, ouch, ouuuch!

If there's one thing you can be sure of, it's that someone's going to burn themselves sooner or later when you go camping. Burnshield gel plasters are miraculous for the treatment of burns. They relieve the pain and also have a soothing effect on the wound itself.

go! Drive & Camp

says The plasters are elastic and not too sticky. They're removed easily without causing additional damage and lessen the chances of a lesion.



Strepsils

pastillas para chupar
Lemon Sugar Free

15 THROAT LOZENGES

Almost like sweets

Not truly essential, but good to have in your kit. Have you ever spoken to someone who has suffered from a really sore throat? He'll tell you that it saved his life!

go! Drive & Camp says Strepsils also provide relief for a blocked nose.



14 DIARRHOEA MEDS

For a tummy that's in a hurry

An upset stomach is still OK if you can stay home for the day, but on a long journey, it's a less attractive

prospect. This is when you reach for these small tablets. Other useful medication for tummies are Valoid (for nausea) and Buscopan (for stomach cramps).

go! Drive & Camp says Buy sufficient quantities. One box will see you through a bad chicken pie, but if you get a tummy bug in the campsite, you're going to need lots of these.

16 ANTIHISTAMINE CREAM

Itch going to be alright

There are usually creepy crawlies wherever you go camping. Anthisan is highly effective for the treatment of painful and itching insect bites and stings and helps to relieve allergic skin reactions.



go! Drive & Camp says Apply Peaceful Sleep or Tabard in the mornings and evenings as a precautionary measure.

REMEMBER...

Store in a cool, dry place

High temperatures and direct sunlight have an adverse effect on medicine. For this reason, your first-aid kit must always be kept in a shady, cool place (not on the parcel rack while driving through the Karoo).

Keep out of reach of little hands

You wouldn't dream of letting small children explore the contents of the first-aid kit at home, so keep it out of reach while on holiday as well.

What's today's date?

Because medicine doesn't last forever, have a good look at all the expiry dates before departing from home. Replace all expired medication.

That's not all

The above list is the minimum that you need to take along on holiday. Complement it with medication for asthma or allergies should anyone in the family need it. Also remember to make sure beforehand whether you need particular medication, such as malaria tablets, for specific areas.



3 GAS POLICE

Gas regulators are such an integral part of camping equipment that most of us scarcely give them a second thought. Most camping gas stoves and fridges have one: It's a round device that's just a bit smaller than the palm of your hand.

It looks a bit like two saucers placed rim to rim, with a gas hose on either side. These hoses connect your gas bottle to a gas appliance. Regulators usually fit directly onto the gas bottle but on some they may be positioned a few centimetres away from it.

Gas regulators have not been manufactured in a SA for a number of years. Those available today (there are about eight brands on the market) come from Europe or China. All these imported regulators must be approved by our authorities before they may be sold locally.

Kobus Voigt is the owner of Novida Testing Services in Pretoria and he's the man who decides which regulators are up to standard for sale. Kobus got the green light from the South African National Accreditation System (Sanas) to test gas regulators and is the only one in the country with the authority to give a gas regulator the thumbs up. He used to work at the SABS, but since 2004 has focused on testing regulators.

We chatted to Kobus about testing and

what it takes to be an approved regulator.

FIRST THINGS FIRST

Kobus says the regulators that campers and caravanners use are known as 2,8 kPa low pressure regulators. When it comes to gas, we refer to kPa (kilopascal – the international standard unit of pressure) and not bars of pressure.

Not all regulators are created equal. For example, in America you can buy 3,7 kPa and 5 kPa units. Kobus says this is because we don't use the same type of gas as the Americans do. They use either butane or propane gas, while we burn LP gas (liquefied petroleum gas) – a combination of butane and propane. In an ideal world it would be an equal 50-50 mix, but in South Africa the proportion is closer to 70% propane and 30% butane.

The pressure in a gas bottle can vary between 100 kPa and 700 kPa (or between 1 and 7 bars). If you consider that you put an average of 2 bars into your tyres, you'll appreciate just how much pressure the gas in that gas bottle is under. The regulator has to deliver a steady gas flow of 2,8 kPa as the cylinder gradually empties.

This is very low pressure – even lower than the pressure when you blow out all the candles on your birthday cake. A regulator is also designed to allow a specific amount of gas to flow through in a particular amount of time, for example 1 kg gas at 2,8 kPa per hour.

HOW DOES THIS WORK?

One side of the regulator is attached to the gas cylinder and the other to the appliance. The gas flowing into the regulator as a result of the pressure in the cylinder, exerts pressure on a diaphragm in the regulator.

Behind the diaphragm is a spring that pushes back to let 2,8 kPa gas through and cut off the supply to the regulator proportionally by means of a valve called a poppet valve. The looser the spring, the lower the pressure on the outlet side; the tighter the spring, the higher the pressure. Some regulators have a mechanism in the middle that you can use to adjust the spring, but this is not a good idea. If you fiddle with the regulator and something goes wrong with your cooker, the insurance company could refuse to pay out.

WHAT'S WRONG?

You'll immediately notice if there's something amiss with the regulator – the flame won't burn properly. If the flame on your gas stove looks tired and yellow, the pressure may be too low. And if the flame burns some distance away from the burner, the pressure may be too high.

DO YOU GET DIFFERENT TYPES?

There are basically only two types of regulators that'll fit a camping gas cylinder: A bull-nose regulator that fits 9 kg gas canisters or larger, with a 5/8" BSP left-hand thread; and a swivel regulator, which is used on gas canisters smaller than 9 kg and has a 3/8" BSP right-hand thread.

He doesn't often come across regulators with defects, says Kobus, but sometimes the thread is too small, or the output pressure is too low.

HOW THE TEST WORKS

The comprehensive testing they do takes about four weeks and a regulator must comply with specific standards.

IT MUST HAVE A REGULATOR

Regulators sold in South Africa must comply with the following requirements:

- The locking nut must be made of metal to ensure a good, tight seal.
- Non-metal parts that come into contact with the gas may not be porous and must have a specified level of hardness.
- The regulator must have a hole on the spring side of the diaphragm.
- An 8 mm gas hose must fit on the outlet nozzle, and there must be a thread on the other side.
- Certain info must be printed on every regulator, including the brand name; the direction of the gas flow (indicated with an arrow, for instance); the outlet pressure (2,8 kPa); the gas flow, expressed in kg/h or g/h; the month and year of manufacture; and the specific model.
- The regulator itself must be accompanied by a leaflet that includes the following info: The regulator is for use with LP gas only; if the spring pressure has been preset, you may not tamper with it; the address of the agent or manufacturer; and how the regulator must be attached to the gas cylinder and hose.



SIGNS OF THE TIMES. A gas regulator must have certain info printed on it, such as the outlet pressure and direction of the gas flow.

BE ON THE LOOKOUT FOR THESE ALARM BELLS

**1 What on earth is this?**

Extra fixtures screwed onto the bottle are illegal.

2 Old geezer

Bottles made prior to 1969 were constructed of less durable (untempered) steel.

3 Sticky spot

Illegal stickers on bottles can be misleading.

4 The school of hard knocks

Dents can indicate that the bottle has been manhandled or damaged and may consequently have a weak spot.

5 Fire or flame marks

Scorch marks are signs that the bottle may have been exposed to excessive heat.

6 Sss...

A leaking valve indicates that it may have been tampered with.

7 Red means dead

Visible weathering such as rust indicates that the bottle's days are numbered.

8 Crack detective

Cuts or cracks mean that you are looking at a time bomb.

9 Hands off, Sparky!

Signs of "repair work" to the bottle (such as the marks of an angle grinder or welding) are signs of a weak spot.

10 Crippled foot

A bottom ring that has been damaged will prevent the bottle from staying upright. (It may have been dropped on a hard surface and be bruised.)

A list of complaints

Gas bottles aged ten years or older are usually withdrawn from the market, yet if you take good care of a gas bottle, you

could use it for another ten years. Not everyone is a gas expert, so whenever you have your cylinder refilled, the person doing the job is supposed to

take note of the points above, according to the LPGSASA's regulations. (If any of these problems are present, they should refuse refilling.)

4 A NECESSARY FIRE-ARM

Fire extinguishers are like refuse collection trucks: You don't pay them much attention until they're not around and you're knee deep in it.

It's common knowledge that there is an inverse relationship between how long it takes to tease a damp piece of wood into flames and how quickly things can catch alight by accident around the campsite. This is not the time to wonder where you packed the fire extinguisher. And when you do get your hands on it, it had better work, because no one will be laughing if your caravan goes up in flames while you're trying to figure out how to get foam out of the extinguisher.

The National Road Traffic Act is clear when it comes to fire extinguishers and caravans:

A caravan or trailer with a tent on top must be equipped with one or more portable fire extinguishers (the dry chemicals type and at least 1 kg). And you must store it in a safe, easily accessible place – right next to the doorway.

WHICH ONE?

There are six general types of fire extinguishers – each filled with different contents to fight a particular type of fire. These include carbon dioxide, foam and water. Depending on where in the world you find yourself, fires will be divided into six classes, but we will be taking a closer look at three of them:

- **A class.** This includes things like wood, paper and textiles – more or less everything your caravan is made of.
- **B class.** This is fire in a flammable liquid or gas. There are quite a few around your campsite, including cooking oil, grease and LP gas.
- **C class.** These are electrical fires. Most caravans and offroad caravans are hooked up to the power supply via a 220V plug. The power is then distributed to a wall plug nearby, or converted to 12V in the Hella plug. You might therefore encounter a fire around one of these connections.

Fire extinguishers filled with dry chemicals can be used to fight all three of these



GO FOR GREEN. The needle of the pressure gauge on the canister is almost like a thermometer: if it's in the red, it needs your attention.

types of fires, and that is why the law stipulates that you must carry this kind of extinguisher in your caravan at all times.

FOOD FOR THOUGHT

Raymond Nel of TransFire says the powder in dry chemical extinguishers is in fact a type of salt – monoammonium phosphate, or MAP for short. How effectively the powder will fight a fire is expressed as a percentage, for example 40% MAP, 70% MAP and 90% MAP. The 40% MAP extinguisher is therefore less effective than the 90% MAP one. According to Raymond, the 40% MAP is almost always the minimum standard in the industry.

The way dry chemicals work might surprise you: They don't smother the flames, don't cool the heat and don't remove the oxygen. Rather, they counteract the chemical reaction that causes ignition. These extinguishers have a range of 2,53 m, which means you'll reach every corner of your Exclusive when standing in the middle of it.

However, Raymond believes caravanners should consider getting themselves a larger fire extinguisher than the 1 kg stipulated by law, because the 1 kg is often simply not adequate (1 kg is what most caravan and trailer manufacturers install as standard equipment).

HOW DOES IT WORK?

Fire extinguishers are one of those things you don't want to think about using, because it means there is trouble. But it is important to be prepared for a fire and to know how your extinguisher works. The contents of the canister are under pressure



YEARLING. Consider the sticker with the service date to be its licence: You know exactly when it needs attention again.

of 1 400 kPa.

Along with the monoammonium phosphate, the canister contains nitrogen gas. Nitrogen is a clean, dry gas that helps keep the phosphate dry as well.

As soon as you remove the safety pin from the extinguisher and depress the lever, the seal on the contents of the cylinder is broken and the nitrogen can escape. The phosphate is heavier than the nitrogen and is therefore at the bottom of the cylinder. When the valve is opened, the nitrogen wants to escape, and the way out is via a pipe that extends to the bottom of the cylinder – which therefore results in the phosphate being propelled out along with the nitrogen.

ONE YEAR CONSCRIPTION

Around the camp fire you will sometimes hear tales of how someone lost the wheels on their caravan because the wheel bearings hadn't been serviced in years. But, fortunately, horror stories of fire extinguishers going missing or not working because they hadn't been serviced are not all that common.

Raymond says that by law all fire extinguishers must be serviced at least once a year. Such a service takes only 15-20 minutes and should cost in the region of R50. But it will take a little more effort than simply popping into your local hardware store.

To find your nearest registered dealer, have a look on the website of the South African Qualification & Certification Committee for the Fire Industry (SAQCC). Go to saqcc.re.co.za/search_town.asp, >



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Extinguishers are under enormous pressure and this makes them dangerous to service. When the canister is serviced, it is first weighed to ensure there is still enough powder in it. Then they check that the powder is still in fact a powder. Because it is a type of salt, it can clump together, like salt in a salt cellar when the air is damp.

THE FIVE-YEAR PLAN

In addition to the annual service, a fire extinguisher needs a thorough service every five years. This includes a pressure test in which pressure of approximately 3 000 kPa is exerted on the cylinder of the extinguisher to make sure the cylinder doesn't have any weak spots.

The head is also checked as is the condition of the powder. The pressure test and replacing the phosphate costs about R100 (this excludes any parts such as the O rings that might need replacing). A new fire extinguisher costs R220-R300, depending on the size.

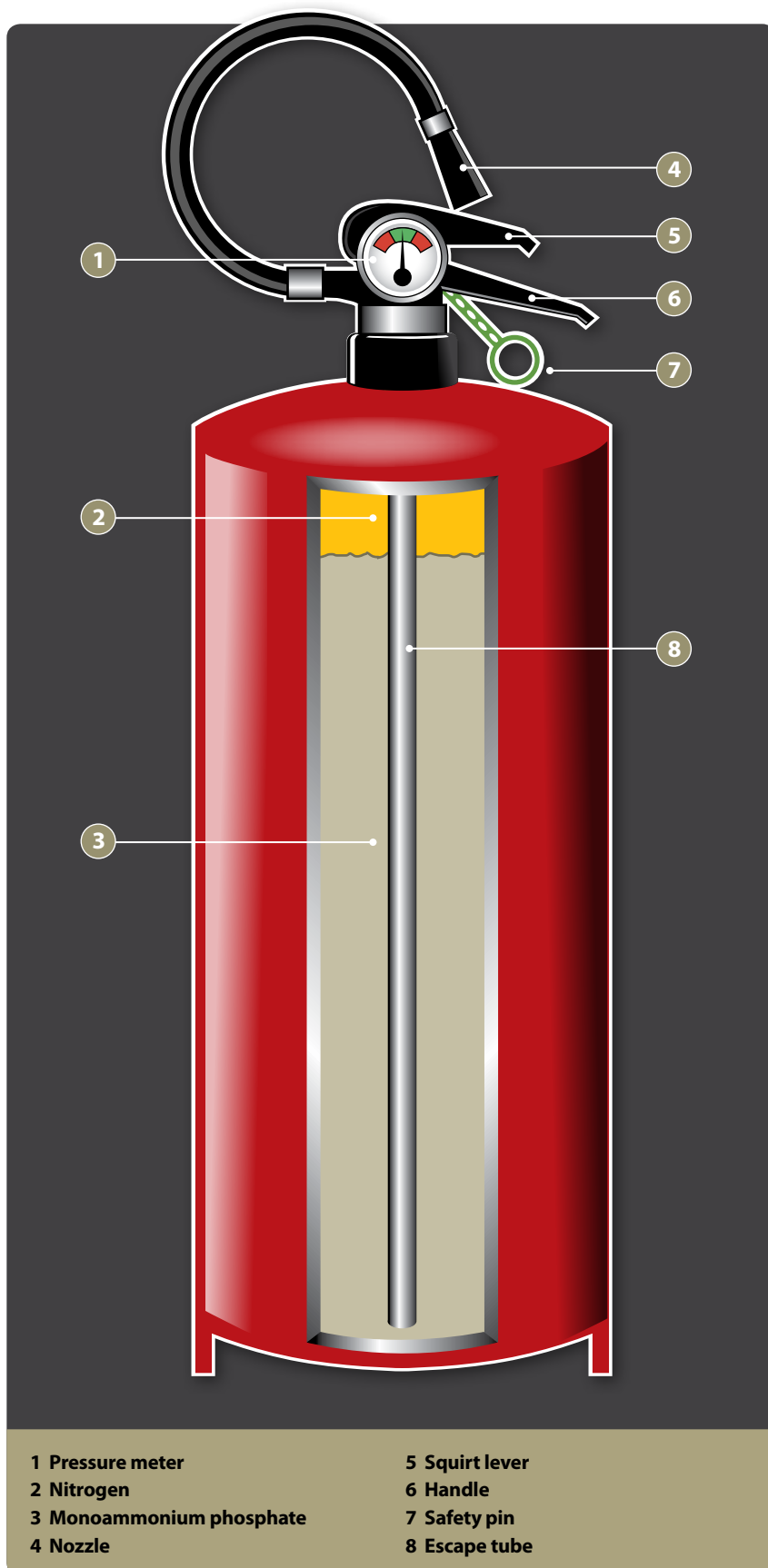
HELP THE GUY

● **Hold tight.** Those clasps and straps keeping the fire extinguisher in place are not there just for show. They ensure you can always find your extinguisher when you need it, and it will last longer if stored somewhere it isn't subjected to severe vibrations. The mount has been designed to absorb most of the shocks of a journey, Raymond explains.

● **Have a look.** Try to make a cursory examination of your fire extinguisher about once a month. Have a look at the pressure meter and make sure the needle is in the middle of the green section of the scale. If it's in the red to the left or right, there is a problem with the pressure. In this case it has either lost or is losing pressure, or the pressure in the cylinder is too high.

● **Upside down.** To determine if the powder is still good – and to help prevent clumping at the bottom of the cylinder – invert the bottle and listen carefully close to the cylinder. If you can hear the powder slowly and evenly sinking to the bottom, then you can rest assured all is well in your extinguisher.

Contact: ☎021 931 8704 or 011 822 2230;
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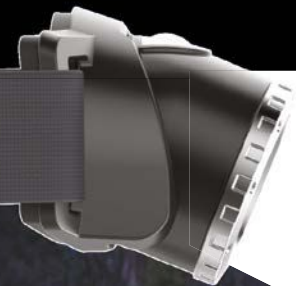
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