

While some of us are fortunate enough to own a 4x4, we have to think about the driving and weather conditions before we can go off-road. Is it going to be muddy or do we have to cross a body of water? What do we need to carry? How do we get ourselves out of sticky situations? Below are a few basic skills that should be understood both theoretically and physically before we take off chasing chooks in the bush.

If you've already read [5 'Must Haves' for your 4WD Recovery Kit](#) and [10 Ways to Safely use your Snatch Strap](#), you might have some understanding of what tyre pressure you need and how to get out of being bogged, but here are some examples of the driving conditions you may come across and how to get out of them.

## First: Know Your Vehicle

- Does your 4 x 4 have free-wheeling hubs or has it got automatically engaging hubs?
- Does your 4x4 have a transfer box with high and low ratio selectable by a funny little gear lever or a button?

The list goes on... Read your vehicle's owner's manual before you even think of heading off on your trip. Yep, arduous I know, but hey I am sure we would all rather get back home, or back to civilisation, rather than getting stuck in a remote area with no food or water where the eagles are bigger than international airlines jets!

## In the bush...

- If you're unsure of the ground ahead, especially if there is mud or water, get out and check it.
- Keep thumbs outside the steering wheel.
- Do not change gear in the middle of a tricky section.
- If in doubt, always choose a lower gear.
- Tyre pressures play an important part in off-road driving. Lowering tyre pressure usually helps to gain more traction. 140-180 kPa (20-26 psi) is a good tyre pressure for many bush tracks. The tyre pressure you run should always be considerate of the load you are carrying on your vehicle and driving conditions.
- Low tyre pressure = lower speed
  - But the warmer the tyres will get, the more likely you'll get punctures.
- Cross small ridges slowly and square on.
- Cross ditches at a slight angle.
- Straddle ruts, however on slippery downhill sections, it's best to drop into them if they're not too deep.
  - On uphill sections, stay out of them if possible.

- On deeply rutted sections, you may need to do some road building/forming.
- If you begin to lose traction going uphill, along a rutted track or in mud, turn the steering wheel from side to side. This may help you keep moving.
- Take care you don't career off the most desirable path to the right or left though!

## On steep hills...

- Low second or third gear is generally best for going uphill.
- Low first gear is best for steep downhill.
- Do not touch the clutch.
- Use the footbrake sparingly and with much caution.
- Avoid turning the vehicle sideways on a hill.
- Allow any vehicle in front plenty of room.
- If the vehicle begins to slide sideways very slight acceleration and steering into the slide will normally straighten your descent.
- If you stall going uphill, do not touch the clutch or accelerator.
  - See the stall start technique below for what to do.
- Winching is the safest way to tackle steep slopes when all else fails.

## Driving on sand...

- Speed and flotation are the keys to success. A high ratio is best if possible.
- Lower the tyre pressure to 140kpa/20psi. You may need to go lower (lower tyre pressure = lower speed).
  - Remember to reinflate your tyres as soon as you're back on the hard ground.
- Stick to any existing wheel tracks – it's a lot easier.
- Avoid sudden changes in direction or acceleration.
  - Coast to a stop if at all possible.
- Tackle dunes head on with as much momentum as possible.
- Avoid braking at all costs when descending a dune.
  - Keep the nose of the vehicle pointing downhill.

- Don't go fast but not so slow that the wheels stop rolling or the vehicle begins to slide sideways.
- A touch on the throttle will keep the wheels moving and the vehicle pointing in the right direction.
- If you get stuck, try and rock the vehicle backwards or forwards building up a small stretch of hard-pack sand that you can accelerate off from.
  - Do not spin the wheels!
- Always keep your recovery gear handy.
- Wash your vehicle thoroughly, especially underneath, after use.

## Water crossings...

- Check the crossing, including the exit, before you begin to cross.
- Water depths of up to 30cm can be handled fairly easily but will depend on the type of bottom and the current flow.
  - Soft sand and/or a strong current can make even a shallow crossing difficult.
  - An engine air inlet snorkel for deeper water may be required so that the engine doesn't suck water and do damage.
- Spray electrical components with WD40 (or similar) before entering the water.
- If you're about to cross water deeper than the bottom of the engine cooling fan height, it is important to loosen the fan belt, unless the fan has an auto clutch (auto clutch will still spin at higher RPM).
  - A spinning fan can spray water onto the electrics.
- In deeper water (over 30cm), remove fan belt and fit blind to help create a bow wave.
- Keep speed down but fast enough to create a bow wave – low second gear is best.
- Do not disengage clutch or change gears whilst crossing waterways.
- Keep the engine running even if you cannot travel any further.
  - If the engine does stop, DO NOT re-start it.
  - Winch or tow the vehicle out/away from the waterway.
- After completing the crossing, dry your brakes out.
  - Check all oils for signs of contamination if you've been driving regular deep crossings, or you had become stuck and needed towing or winching out/away from a waterway.

## Mud...



- Speed, momentum and power are essential.
  - Good open tread tyres help.
- Low second or third are probably the best gears to travel in.
- Move the steering wheel from side to side rapidly to improve traction.
- Keep a steady pace.
- Stay out of ruts if possible especially if they are deep.
- If you do become stuck, rock the vehicle backwards and forwards by alternating between first and reverse. You'll be surprised at what perseverance can do sometimes.
- If you feel your vehicle becoming deeper and deeper into the mud and getting stuck, rather than punishing the clutch or vehicle at all, it is important to winch or be towed out safely.

## Driving on snow...



- Carry correctly fitting snow chains and put them on when required.
- Prepare your vehicle and carry safety gear.
- Keep to roads and tracks that are open to traffic.
- Drive as if you have no brakes and instead carefully use gears to slow you down.
- Only drive with low beam lights on.
- Remember that vehicles travelling uphill have right of way.
- Do not travel when visibility is poor.
- Park only where directed/allowed and as close to the bank or the high side of the road as possible.
- When exiting the vehicle, leave the vehicle in a low gear instead of applying the handbrake as it could freeze on.
- Lift the wiper blades off the windscreen.
- Be patient. Watch out for other travellers and animals.

## The stall start or key start...

When a vehicle stops on a steep and/or slippery hill don't panic. Think and stay calm at all times.



1. Brakes on – both foot and handbrake.
2. Switch engine off, if not already stalled.
3. Ease clutch in.
4. Select low range, reverse gear. Let the clutch out steadily.
5. Check to see if the track is clear to reverse and that the wheels are pointing straight ahead, not on an angle.
6. Release handbrake slowly.
7. Release footbrake slowly – but keep your foot ready to place on the footbrake if needed.
8. Keeping your foot away from the clutch, start the engine and proceed backwards slowly down the hill. Do not touch the clutch or the accelerator.
9. Slight ‘feathering’ of the brake is possible and maybe necessary but take care.

## Take Note

- With autos, if the engine has stopped you’ll need to start the vehicle in neutral, or park, before reverse gear is engaged (step 4).
- If at all in doubt, chock your vehicle and use a winch to aid the descent or ascent!

## Good/important habits...

- Observe all the rules and regulations pertaining to the use of public roads and land.
- Keep to constructed vehicle tracks – never ‘bush bash’.
- Avoid areas which are easily damaged, such as swamps, alpine snow plains and vegetated sand dunes.
- Carry out all rubbish you take in.
- Observe and obey all fire restrictions.
- Respect our wildlife.
- Respect private land. Always ask permission before crossing pastoral or private land.
- Leave gates as you find them.

Whenever or wherever 4x4’ing, be prepared and travel safely. If you can, print this article out and keep it handy in your glove- box in case of an emergency!

***It would be great to read about some of your off-road experiences, so please feel free to share in the comment section below!***