

# BUSH NAVIGATION

Knowing where you are at any time is vital for safe bush travel and today it's easier than ever before to pinpoint your position with great accuracy.

Road and track navigation is an aspect of bush travelling that causes more disputes than any other. Normally calm couples can be brought to screaming pitch, or reduced to travelling in stony silence as a result of navigation difficulties. It needn't be so.



Like any other skill, navigation confidence is built around the right equipment and some practice. Patience is another vital ingredient: it's better to mull over an intersection rather than to charge off and have to eat humble pie later on. Wrong turns fray tempers and waste fuel.

The right equipment includes a compass, so you know in what direction you're heading; a map, so you can relate that direction to roads and tracks; and some form of distance measuring device, so you know how far you are from a known point. (Use a compass away from steel objects, outside the car and definitely not on the bonnet!)



Until relatively recently, that's all we had to rely on in the bush, except for explorer types who took along a sextant, a chronometer and a set of mathematical navigation tables.

Today, navigation can be as easy as looking at a GPS screen on the dashboard: the wiggly line is the road or track you're following and the little cursor is your vehicle. Direction and distance are inbuilt functions, as is a 'backtrack' line showing where you've been.

Nevertheless, we still carry paper maps, a backup GPS and two Silva compasses.

When we're planning and doing a bush trip we go through several different levels of map reference. Let's go through the process.

For us, planning a major 4x4 excursion involves hours of poring over paper maps. The starting point is with general maps of the area we intend visiting and for this purpose it's hard to go past Hema's Road and 4WD Atlas, with its 4WD section at the back.



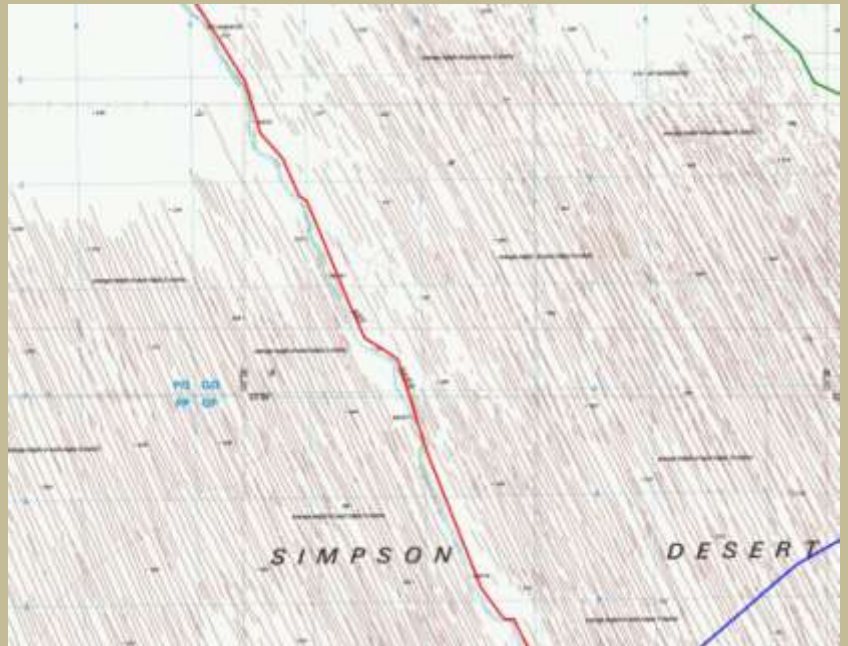
We know there's a lot of digital, on-screen mapping available, but for the planning process it's a lot easier to get the big picture using paper maps. Scrolling across computer screens can often be confusing.

Using the Atlas, we work out where we intend to travel in the selected region and then we plan how to get there and back. For example, if it's a Cape York trip we'll pick out the places we intend to visit up there and then plan our northward and southward routes, to take in some interesting sites coming and going, rather than slog it both ways over the same roads.

At this point of the planning process it's important to note on the maps where we'll refuel and resupply. This isn't such an issue in the case of The Cape, but it's a vital calculation if we're looking at desert destinations.

Only a few years ago we hardly did any tripping without a stack of topographic maps, but today there's ample detail available on specialist 4x4 maps. In addition to road and track detail the latest Hema maps carry important information about permits, camping areas, fuel supplies and vital phone numbers.

It's safe to say that with Hema's Great Desert Tracks, Cape York, Fraser Island, The Kimberley, The Top End, The Pilbara, Flinders Ranges and Central Australia, plus Rooftop's High Country in your kit you've got most of the popular 4x4 destinations well mapped.



A distinct advantage of these maps over topographic maps is that much of the terrain they cover has been checked for track accuracy and condition in recent times. Many of the topographic series are at least 20 years old and some are older still.

## Map reading for dummies

Most people have some map-reading skills, developed by looking at metropolitan street directories. Reading bush maps is no more difficult.

Some people have trouble following a map, because they look at the map as if it were a book and can't relate vehicle direction to the road direction on the page. It's easier if the map is rotated so that the road you're on lines up with the direction of travel.

It's the same if you're using GPS mapping – set the unit to show 'track up' rather than 'north up'. The starting point when buying paper maps is an Australian road atlas that shows plenty of minor road detail. The next stage is specific mapping for the region you intend to visit and, lastly, more detailed maps if you want to explore off the beaten track.

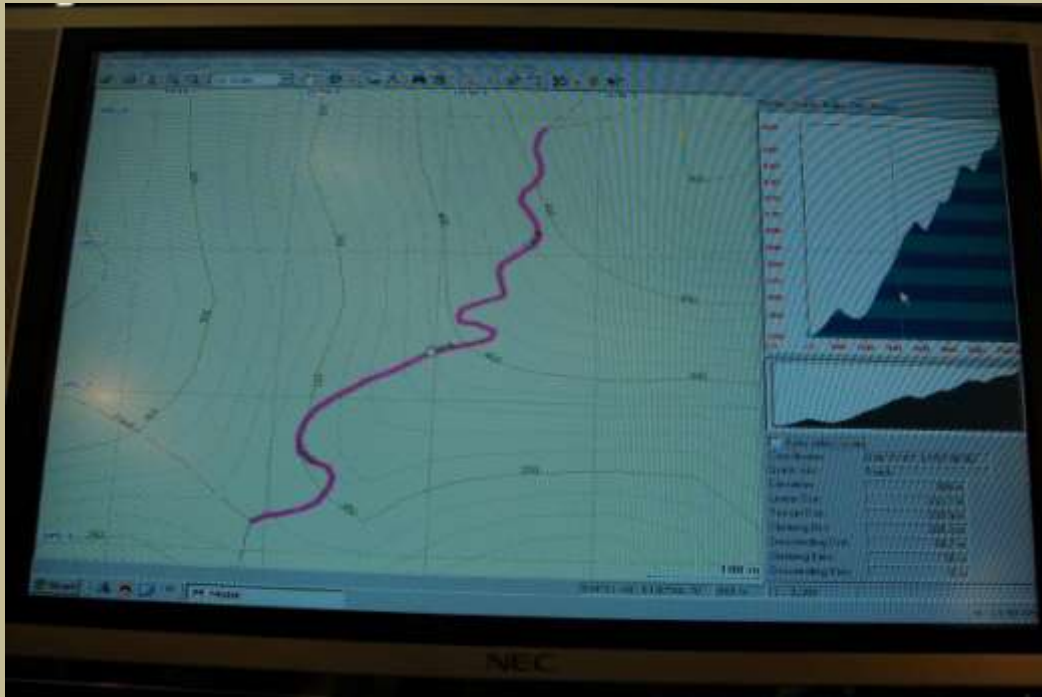
The right maps are absolutely critical, whether they be location-specific 4x4 touring maps or topographics. We have a golden rule that we don't drive on any road or track for which we don't have paper map coverage. A GPS is little use if it's giving you latitude and longitude that you can't pinpoint on a map.

Part of essential map coverage of an area is a wider perspective, so that if you can't go where you intended, because of a huge fallen tree, or a flooded creek, for example, you have map coverage of some alternatives.

Topographic maps serve many purposes and much of the numbered and grid information on them isn't necessary for recreational bush travel. All you need most times is to be able to mark latitude and longitude from your GPS screen onto the map. Be aware that the GPS grid system may differ from the map one and there's variable sensitivity from the GPS system, so don't expect pinpoint accuracy. The contours shown on topographic maps are useful for seeing what the track ahead is doing: tight contour lines across the track mean steep sections and the contour altitude numbers tell you if the track runs uphill or downhill.

### The 'lat' and 'long' of it

Knowing where you are on this spinning globe requires two positioning inputs: latitude and longitude. Latitude positions lie on imaginary circles around the earth parallel to the equator. Longitude positions lie on imaginary circles around the earth that pass through both poles. Where two imaginary latitude and longitude circles intersect is your position.



Ancient navigators used sextants to measure the angular distance between themselves and the midday sun to determine their latitude. They guessed at longitude, using dead reckoning methods that estimated how far they were east or west of a known point.

Navigators in the 18<sup>th</sup> century had the benefit of accurate clocks that indicated the time where they were and the time at a known point. The universally accepted 'known point' was called

the Prime Meridian: an imaginary line running through both poles that also passed through Greenwich, England. To find out where they were navigators compared so-called Greenwich Mean Time (GMT) with local time.

Since the sun 'travels west' one degree every four minutes, the time difference between local time and GMT can be converted into a position east or west of Greenwich: longitude position.