

# Navigating in the Bush



Mike Spray



OUTDOOR SAFETY

NEW ZEALAND MOUNTAIN SAFETY COUNCIL

Outside it was cold, wet and very miserable. But having to leave the recliner and open fire did not deter a solid number of blokes and one lady from attending their monthly deerstalkers get-together at the club-rooms. As I looked about the room, walls adorned with heads and horns, I noted the average age must be 50+. I did not look out of place. Only last week the young fella called me an old silver-back possum!

Bushmen with hundreds of years of bush bashing and hill wandering experience sat before me. A bloke in the front row eyeballed me sternly as if to say, "I'm missing a warm fire and Coro tonight so this better be worthwhile".

There I was in my townie clothes with laptop, data projector, electronic synchronized GPS mapping programme, protractor compasses, and five new state-of-the-art GPS units all ready to deliver my lesson on 'Navigating in the Bush'. First impressions can be misleading; I've done a bit of scrub time myself over the years - although at that moment it didn't look very evident.

I had a lesson plan, thoughtfully conceived while driving to the venue. The plan had three outcomes: to provide knowledge of the topographical map to use a topographical map and compass together and to use the Global Positioning System (GPS).

I put a question to the group: "How many of you know how to read a map, use a compass and use a compass and map together?" Everyone turned to look at the lone hand that was assertively thrust into the air.

"Now how many of you usually stick to hunting close to the hut? You might stay in the valley, or maybe you hunt where you have local knowledge of terrain. How many of you do that because you have a fear of getting lost?" Slowly but surely, many hands were raised to a half mast position.

I had now established the need for the lesson. 'Navigating in the Bush for Beginners' was going to be a hit.

"Can you imagine having the tools and the skill to walk out of your comfort zone, explore new hunting areas and find your way back to the car, content in the knowledge that at all times you knew exactly where you were and knew how to get to where you wanted to go?"

Heads nodded approvingly and the ice was broken as the rain pelted down on the corrugated iron roof.

## The Topographical Map

The topo map NZMS 260 series is an accurate replication of the ground. What is on the map is on the ground, although the map is reduced in scale by 50,000. The map has a printed date on it so if you see pine trees on the ground and they are not on the map it's probably because they were planted after the map was completed.

The map is different from your street map in the respect that it's 3D. It has contour lines that show height, with the height between each contour line being 20 metres. It also has relief shading to help us see the 3D effect.

The rest of the topo map is no different from the street map of your town. Imagine you just bought a handbag on TradeMe for your wife's birthday and you arrange to go across town to pick it up. You need to use the map to find the street so you take your son with you to navigate.

Your son finds the street on the map then plans the easiest way to get there, which is not the shortest way because you want to avoid the centre of town on a Friday night. As your son follows his planned route he knows what to look out for, and recognizes the features on the streets which are also on the map. Take the second road on the right. Then pass the high school on the right. The road then curves around to the right and just at the end of the curve we go left and that's the street. All the way the navigator knew where he was in relation to the map, and knew how to get where he wanted to go.

Bush travel with a topo map is no different. Recognise the features on the ground and follow them on the map. Identify features on the map and expect to see them on the ground. Travel in the bush requires route planning, just like when you navigated to pick up the handbag.

The easiest route is not always the shortest distance. The shortest distance is in a straight line and we don't walk in a straight line in the bush because that would be difficult and silly.

I like to follow hand rails. These are features that can be easily followed with a little attentiveness. Roads are handrails on a street map. On a topo map, creeks, bush edges, spurs and ridges are handrails. You can recognise stream junctions, a bend in the river, a steep face, a change in vegetation type and a high point. These features that you recognise in the bush are on your map.

I looked around the room. Nobody was nodding off. All nods were of an understanding nature and the rain still pelted down on the cor-



The protractor compass has three arrows which all have a different purpose (fig 1).



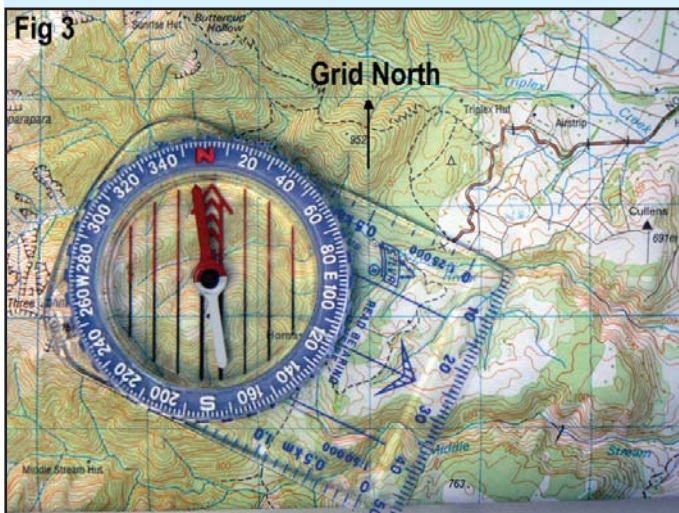
# The Topo Map And Compass Together

“To Get A Direction Of Travel There Are Three Basic Steps:”

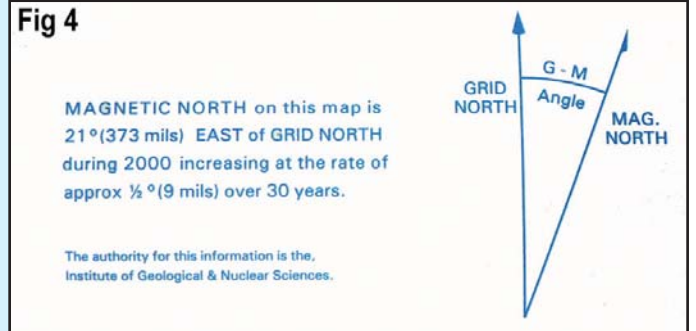
**Step 1.** Lay the compass on the map with the long edge of the base plate running from where you are on the map to where the map shows your car is parked. Ensure the ‘direction of travel’ arrow points in the direction of the car. (fig 2)



**Step 2.** Turn the compass dial until the ‘orienting arrow’ is pointing to grid north which is the top of your map. Make sure the orienting lines are parallel with the north/south grid lines on your map. This step will ensure your compass is orientated to your map. (fig 3)

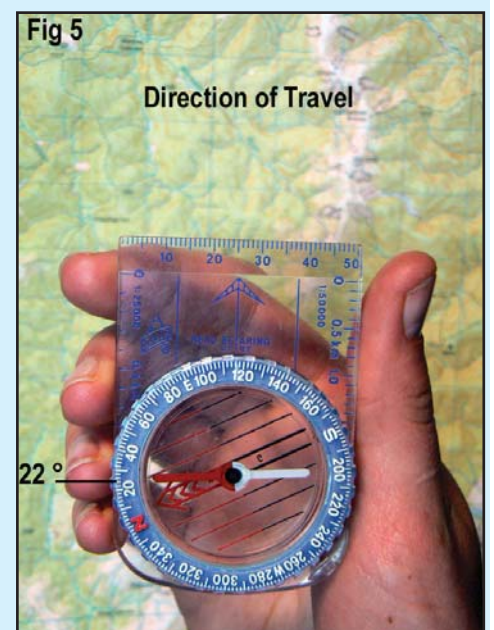


**Step 3.** You need to know that in New Zealand, magnetic north is between 18 and 24 degrees east of grid north depending on where you are in the country. The difference is called the magnetic variation and this is indicated on the side of your topo map (fig 4).



Now take the compass off the map.

Don't touch the dial any more. Hold the compass level at about chest height with the direction of travel arrow pointing away from you. Begin to turn yourself around until the red magnetic arrow points to the magnetic variation (approx 22 degrees) on the dial. Now your ‘direction’ of travel’ arrow points to your car and this is the direction you walk. (fig 5)



“It’s a simple three step process, and with a little practice it’s like riding a bike.”

>> rugated iron roof.

So the basic art of reading a topo map is to plan your route, use handrails to follow your route, and recognize features as you pass by them. If you are standing on the true right of weka creek at the third stream junction up from the main river then that is where you can find your location on the map.

A word of caution though - a bit of practice is required to get good at the art of map reading. Next time you head into the hills, take the map and practice. When you're lying under your tent fly with nothing else to read, study your map.

"Any questions on the topo map?" I asked.

"Yeah mate, I've got a question."

A friendly sort of a face over to my left, about a week of stubble, green swanni and a nice smile said, "I took one of those maps in the scrub once. Stuck it in the top pocket of me swanni. Then it started to rain and me swanni got wet and I got a bit confused as to where I was so I got the map out and it fell to pieces in my hands. Soaked it was, and about as useless as a general store that doesn't sell generals."

So I told him the best thing to do is to get the map laminated. It will last for yonks and you can still use it when the weather is bad. I cut my map up into A4 size and laminate those. Then I only take the A4 piece or two that I need. It stuffs down the front of my swanni so I've got easy access to it.

**"So the basic art of reading a topo map is to plan your route, use handrails to follow your route, and recognize features as you pass by them."**

"That's a good idea," the friendly face replied. "Might try that."

### **The Topo Map And Compass Together**

The protractor compass is the best compass to use together with the topo map because it has a base plate and adjustable dial.

The compass' basic function is to provide you with a direction of travel, so that if you are 'here' on the map and you want to go back to the car which is 'there' on the map then you will use the compass to ensure you walk in the right direction. This is a very handy skill to have, especially when navigating featureless country like areas of Stewart Island.

The protractor compass has three arrows which all have a different purpose (fig 1).

To get a direction of travel there are three basic steps:

Step 1. Lay the compass on the map with the long edge of the base plate running from where you are on the map to where the map shows your car is parked. Ensure the 'direction of travel' arrow points in the direction of the car. (fig 2)

Step 2. Turn the compass dial until the 'orienting arrow' is pointing to grid north which is the top of your map. Make sure the orienting lines are parallel with the north/south grid lines on your map. This step will ensure your compass is orientated to your map. (fig 3)

Step 3. You need to know that in New Zealand, magnetic north is between 18 and 24 degrees east of grid north depending on where you are in the country. The difference is called the magnetic variation and this is indicated on the side of your topo map (fig 4).

Now take the compass off the map. Don't touch the dial any more. Hold the compass level at about chest height with the direction of travel arrow pointing away from you. Begin to turn yourself around until the red magnetic arrow points to the magnetic variation (approx 22 degrees) on the dial. Now your 'direction' of travel' arrow points to your car and this is the direction you walk. (fig 5)

It's a simple three step process, and with a little practice it's like riding a bike.

**"The protractor compass is the best compass to use together with the topo map because it has a base plate and adjustable dial."**

By this stage everyone needed to have a wee stretch so I handed out a pile of laminated A4 maps and compasses. Marked on the map was the NZDA clubroom and a black dot called point 'B'. The task was to set a direction of travel on the compass from the NZDA clubroom to point 'B', then turn and face the direction of travel to point 'B'.

Knowledge fresh in their minds, the group went confidently to task. The lone lady took charge, grabbed the compass and turned the dial so the orienting arrow pointed at the top of the map. She then removed the compass from the map, tucked it into her bosom and rotated until she saw the red end of the needle sit across 22 degrees. She faced the back right corner of the room. Like a flock of emperor penguins the whole group stood tall, and all faced the back right corner of the room.

"Fantastic," I said. "Now you can do it, practice at home, practice at work and don't forget to take your map and compass on you next hunt and practice at every opportunity."

This bloke down the back was obviously delighted in his new found skill. He stood very proudly still facing the back right corner of the room and yelled, "You're never too old to learn are ya?" >|

*Mike Spray has been a National Park Ranger and has spent a number of years based in Te Urewera National Park where this work provided opportunity to have the bush and hunting just out the back door. Since those days, Mike has spent time managing an outdoor education centre, possum monitoring, and is now working as the firearms and hunter training programme manager based at New Zealand Mountain Safety Council National Office in Wellington.*

*Next edition:  
How A GPS Can Help You Navigate*