



AT THE EDGE MOUNTAINEERING

"Your greatest failure is not to try"

NAVIGATION STRATEGIES

PART 4.1: THE 4 D's AND 5 WHAT'S

Welcome to the final series in my online navigation course. In this series, we will look at putting everything we have learnt together to form navigation strategies.

We can group together lots of navigation skills to form techniques that we can use to develop a strategy to help us navigate around the hills and mountains. These strategies help us to plan a route, help us navigate and aid us in finding ourselves again if we get lost. Practice these strategies in a familiar area before progressing further afield and into more complex terrain.

To kick off this series, let's look at how we can break down a route into legs and break our navigation down into smaller sections.

To put these skills into practice and to learn more, take a look at my [Navigation Courses](#) I offer.

All **confirmed bookings** will receive a **10% discount** code to use on [Harvey Maps](#) products from



The 4 D's and 5 What's

In good visibility, we may often be able to see our next checkpoint or objective, or at least come across it easily. This speeds up navigation as we can usually just head to our intended target. However, in poor visibility, we may need to pay more attention in our navigation to find our checkpoint. This is done by breaking down this part of our route, or usually referred to as a 'leg of the route', to make navigation easier and to reduce the scale of an error.

The skills and techniques on offer to us can be overwhelming at first. And trying to decide how to tackle a leg on our route, especially in poor visibility, can be quite stressful. To ensure we don't overlook details on our leg, we can use a checklist to aid our navigation:

The 4 D's

This strategy helps jog our memory and allows us to focus on the key techniques to help us navigate. The 4 D's are:

1. **Distance**
2. **Duration**
3. **Direction**
4. **Description**

Distance:

From your location, how far is it to your next checkpoint? Use a distance measuring card or the roamer or ruler on your compass and accurately measure along the route you intend to take.

Duration:

Knowing how far away our next checkpoint is, we can work out how long it will take us to walk there using Naismith's rule. Use a timing card to work out the time.

Direction:

What direction is the next checkpoint? In a basic form, use the cardinal points (North, East, South West etc), or take a bearing. Look at the surrounding feature both on the map and on the ground to ensure your bearing direction relates. Reverse polarity on a compass can get you lost!

Description:

What tick off features are along the route that you can use to keep you on track? What catching feature can you use to stop you going too far? Describe the leg to yourself from start to finish. Don't forget to look at the contours!



Reverse polarity on one of the compasses, but which one is right?

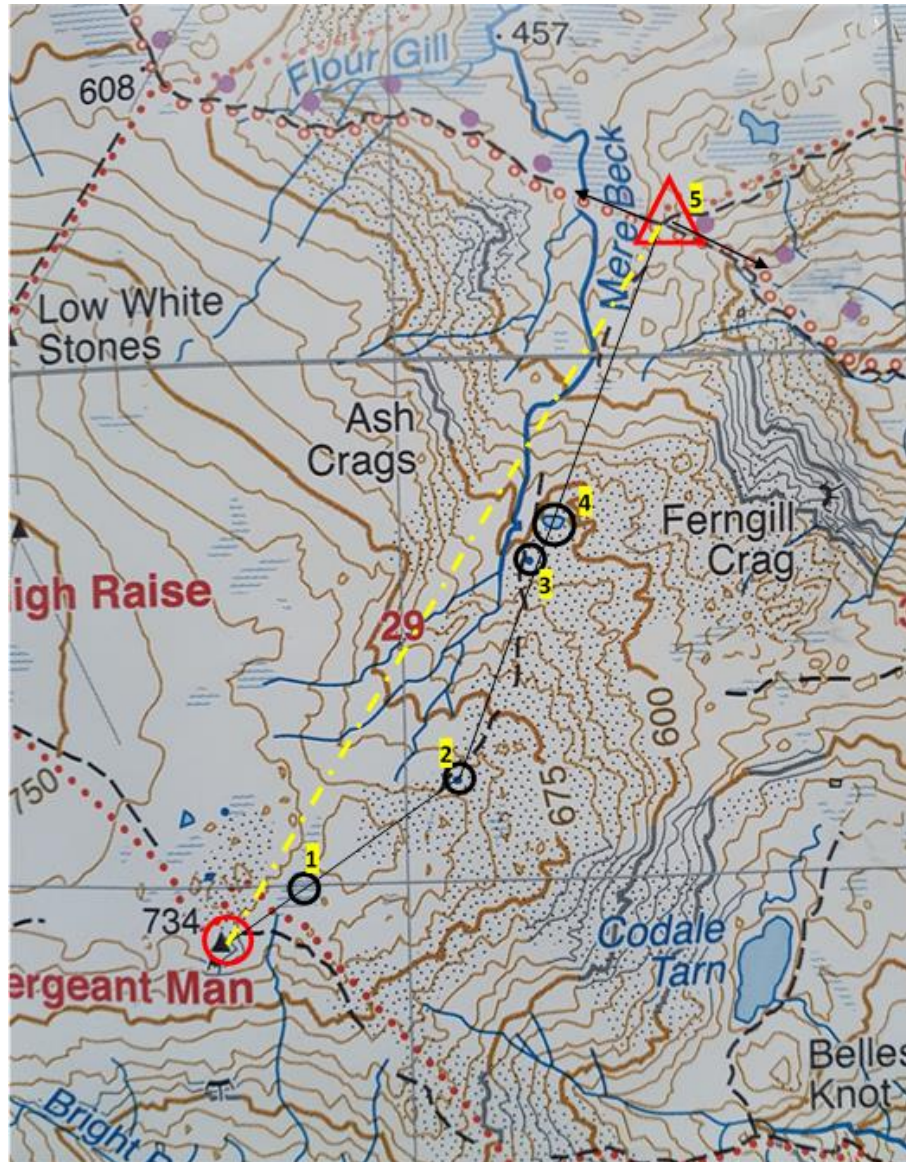
A 5th D is sometimes added to help describe the route. This is either **Dangers** or **Destination**.

Dangers refers to what along the route may present a danger that you need to avoid. Something like an area of steep rocky ground or cliffs you need to be aware of to avoid, or a water hazard such as a river crossing, boggy ground or a body of water.

Destination gets you to look at the desired checkpoint you are aiming for and look into more detail about the area around it. This helps you consciously think about the end point to ensure you don't miss it or at least stops you from going too far if you miss it.

This 5th D is usually included in the **Description**, but it may be easier for you to think about it separately whilst you develop this strategy.

Take a look at the example below:



Start point: Sergeant Man (Red circle)

End point: Bridle Way junction (Red triangle)

Distance: 1.8km

Duration: 28mins

Direction: 32 degrees (Yellow dashed line)

Description:

- Head NE on a bearing of 55 degrees for 550m (9mins 15 seconds) Pace distance.
- Boggy ground (1) after leaving summit. Slight rise before descending to pond (tick off feature 2).
- From pond, bearing of 20 degrees for 1.2km (18mins) following intermittent track. Time distance.
- Heading downhill, pass small pond (3) then large pond (4).
- Handrail river.
- Destination reached (5).
- Catching feature is large Bridle Way running NW-SE. Ground rises after crossing bridle way.

What may otherwise appear to be a complicated route can be broken down into manageable chunks. The initial **Direction** bearing ensures you are heading in the right direction to begin with. As you can see in this example, I have then used two other bearings along my leg to keep on track and manage the route better.

Please note here that I have purposely not used contour information in my description. This was to ensure I don't overload you with too much information in this learning process. When you are practicing this for yourself, pay attention to the contour details when describing your route. Take time now to look back over this example and see what contour information you could use to help you describe and follow this route.

Writing the description down in a notepad can help you remember the description whilst on the route. An activity to try when on the hill is to see if you can remember the details, put the map away and try to walk the leg based on your description alone. This is called Map Memory and is a useful skill to learn to help speed up your navigation. Practice with an easy route with a few details in a familiar area first, before trying it in more complex terrain.

The 5 What's

Another checklist you can use when breaking down a leg of your route is known as the 5 What's. This is another strategy which can be used instead of, or with, the 4 D's. This strategy forces you to look over the route in detail so you understand the nature of the terrain you will encounter. The 5 What's are:

1. **WHAT** are you going to see en route?
2. **WHAT** are you going to see when you reach your destination?
3. **WHAT** will you see if you go too far?
4. **WHAT** skills can you use on this leg?
5. **WHAT** are the potential hazards or danger en route?

WHAT are you going to see en route?

Describe the route to yourself and look for tick off features. Look at the contour details and think about distances to, between and from tick off features.

WHAT are you going to see when you reach your destination?

Describe to yourself what the final destination will look like in terms of the features around it and what you can expect the ground to do around you.

WHAT will you see if you go too far?

What catching features can you see that will stop you?

WHAT skills can you use on this leg?

Timing and pacing, taking bearings, attack points, using tick off features etc

WHAT are the potential hazards or dangers en route?

Look along your route and look for potential hazards or dangers that you need to avoid. For example, steep ground, cliffs or water hazards. These can be used as tick off features and/or catching features too.

Take a look at this example form the book **Navigation in the Mountains – Carlo Forte**:

Using the 5 Whats

WHAT are you going to see en route?
Total distance is 800m.

- 1 Descending ground through rocky terrain with steep ground to the left.
- 2 Change in angle of slope at approx. 300m, becoming flatter.
- 3 Terrain levels, pass a small lake at 500m.
- 4 Cross a boundary at 550m and leave footpath.
- 5 Ground starts to rise gently at 600m.

WHAT are you going to see when you reach destination?

- 6 Top of high ground with terrain descending in all directions.

WHAT are you going to see if you go too far?

- 7 Ground will descend gradually at first then more steeply (convex slope).

WHAT are the potential hazards?

- 1 Steep rocky ground to the left.
- 3 Water hazard.
- 7 Convex slope with steep rocky ground.

WHAT are the appropriate skills to use?
Follow footpath, time or pace distance (depending on conditions), use a bearing to check general direction or more accurately if visibility is poor. Tick off features 1 to 5.




Illustration from 'Navigation in the Mountains'
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When navigating in poor visibility, you may need to break each leg down along your route using one or both of these strategies. This can slow down navigation, but it ensures you stay on track and minimises any errors made. Using this strategy can help you if you get lost and this will be covered in detail in the next part to this series. But in good visibility, you may just be able to walk to your next objective if you can see it or the route is easy and not in complex terrain.

Deciding when to use this strategy comes with time and experience. It is always best to practice this strategy in familiar terrain, to begin with, and to continue to use it when out walking in the hills and mountains from time to time. Gain experience by heading out by yourself or with friends, or by booking onto a navigation course.

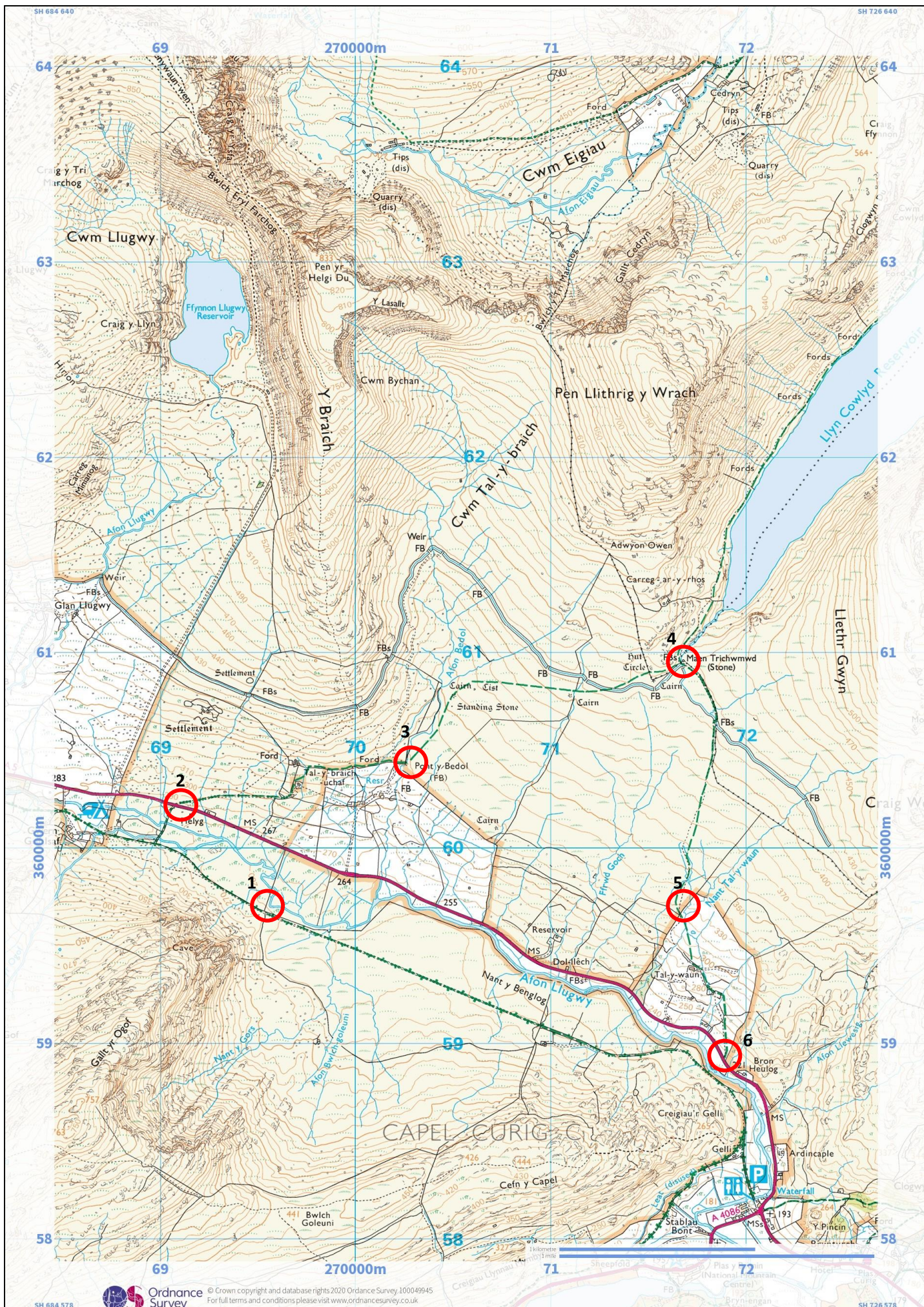
Next up:

The next article in this series will be Part 2: Relocation

For the set of questions to follow, you will need the following:

- The OS Map attached

These are not a series of questions as such, more of a confirmation of what you have just learnt. For this activity, I want you to plan the legs using the 4 D's and/or the 5 What's. An example has been given.



Questions:

Example:

Checkpoint 1 - 2:

Distance: 850m

Duration: 13mins 45secs

Direction: North west

Description:

Head on a bearing of 302 degrees for 650m (10mins 45seconds) to track junction. Time the distance.

Cross stream (1). Flat ground to the right (2), steep rocky ground to the left. Cross stream (3).

Track junction (4). Catching feature is Campsite.

From track junction, head on bearing of 26degrees for 200m (3mins).

Cross river twice (5) + (6).

Catching feature and destination is the road.

WHAT are you going to see en route?

Cross a stream after 100m (1). Flat ground to the right (2). Cross another stream after 500m (3). River is closer on the right. Track junction to the right after 650m (4). Cross the river twice (5) + (6).

WHAT are you going to see when you reach your destination?

A main road running NW/SE with a track on the other side heading NE/E. Ground rises up on other side of road.

WHAT will you see if you go too far?

If I miss the track junction (4) the campsite is my catching feature. The main road (destination) is my other catching feature

WHAT skills can you use on this leg?

Pacing and timing to track junction. Tick off features.

WHAT are the potential hazards or danger en route?

The main road.

Checkpoint 2 - 3:

Distance:

Duration:

Direction:

Description:

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WHAT are you going to see en route?

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WHAT are you going to see when you reach your destination?

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WHAT will you see if you go too far?

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WHAT skills can you use on this leg?

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WHAT are the potential hazards or danger en route?

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Checkpoint 3 - 4:

Distance:

Duration:

Direction:

Description:

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WHAT are you going to see en route?

WHAT are you going to see when you reach your destination?

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WHAT will you see if you go too far?

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WHAT skills can you use on this leg?
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Checkpoint 4 - 5:

Distance:

Duration:

Direction:

Description:

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WHAT are you going to see en route?

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WHAT are the potential hazards or danger en route?

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WHAT are you going to see when you reach your destination?

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WHAT will you see if you go too far?

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WHAT skills can you use on this leg?

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WHAT are the potential hazards or danger en route?

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