

# SECTION H: MOVEMENT ON TERRAIN

## 1 Introduction

Being on expedition requires you to be on the move.

### This section will:

- Explain the key factors affecting your speed
- Show you how to estimate distances with your pace
- Introduce the Global Positioning System or GPS

## 2 Key Factors Affecting Speed

There are seven key factors, which can affect your speed while moving. They are:

- Moving uphill - movement tends to be slower
- Moving downhill - movement tends to be faster
- Personal level of fitness - if one is fitter, one tends to walk at a consistent pace
- Equipment load - less weight allows people to walk faster
- Terrain type - Flat, gentle terrain allows people to walk at a more constant pace.
- Weather conditions - It is obvious that extremes of weather tend to slow an expedition team more.
- Off bearing - Speed is affected because one's energy and capacity is exhausted. Also, if the team is not certain of the direction, speed is decreased by the need to keep checking landmarks and locations.

### How to do you optimise your speed?

There are some ways to improve on your speed.

- The impact of terrain factors can be reduced by choosing a route that will maximise your time on flatter or gentler terrain.
- Prepare for expedition by keeping fit through regular exercise.
- Optimise your carrying load by distributing common equipment, according to body size.
- Be accurate in setting bearing.



# 3 Estimating Distances

Estimation of distances is essential to the location of your checkpoints. While on the move, your knowledge of distances will help confirm if you are short of the intended destination or exceeded it. As seen, travelling according to an accurate bearing is only half the story.

The only hitch is that the team must be able to estimate distances as accurately as possible. To an extent, pacing can solve this. On average, a person will take 65 double paces to cover 100 metres. (A double pace is counted when the foot hits the ground twice.)



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Before the expedition, measure out 100 metres and have the team members pace and note their number of paces. Do this several times, and choose the one who is the most consistent to be your team's pacer.

While on the move, the pacer should call out "100 metres", each time he hits 65 paces

(or whatever number is typical of his pacing). That way, the team leader will know how far they are from the checkpoint.

If the expedition is on bicycle, the job of the pacer can be taken over by electronic devices. However, it means that teams must measure their distances and bearings accurately.

## 4. Global Positioning System

A Global Positioning System (GPS) are a system of satellites, computers, and receivers that is able to determine the latitude and longitude of a receiver on Earth by calculating the time difference for signals from different satellites to reach the receiver.

Usually, a GPS device will link with 3 satellites orbiting the earth to determine the position of the user. It provides the user with an MGR of his or her location. Some GPS devices can also calculate bearing and distances.

A GPS device would come in handy if especially in very unfamiliar terrain. Still, the compass is not likely to be phased out any time soon by the GPS as it is a mere fraction of the cost of a GPS and it suits the recreational users' needs.



# Pacing Table

Name	No. of paces				
	1 <sup>st</sup> Try	2 <sup>nd</sup> Try	3 <sup>rd</sup> Try	4 <sup>th</sup> Try	5 <sup>th</sup> Try

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