

Why do people get lost?

The text of a presentation given at the UK Mountain Rescue Conference, Stirling, Scotland on 6th Sept 2008

Member of Penrith MRT for 29 years, its team leader for 25 years, and Statistician for MR(E&W) for 11 years. During this time I have had to develop an interest in Lost or Missing persons; I have been involved in training search manager and providing planning information to search managers.

This latter point is the result of starting a database at the UK SAR Conference in 2000 held at Lancaster. This database is called 'Missing Person Behaviour Data' and contains records of searches for missing persons attended by MRTs throughout the UK, N Ireland and Eire. There are currently over a 1000 records, but it still represents only a fraction of the search operations undertaken by teams in these countries.

Pete Roberts, Dave Perkins and I have produced summary information from this database since 2000 with the intention of providing search managers with reliable, local and current information about how missing persons have behaved in the past. It has received acceptance in many areas of MR and is in use in some teams. I am also aware that the information is being used outside for MR by other search management practitioners.

Like you, I have to 'earn a crust'; my role as a software consultant necessitates a lot of travelling. For years, I have relied on my ability to read maps, form a mental picture of the route and to drive with that picture in mind. It has been my experience that this process has been helped by remembering key features on the route as a way of checking whether I am still 'on track' or not. For instance, many routes go pass churches and named pubs in towns or power stations, water-towers and other landmarks in the countryside.

Lately I have started to use a car Sat-Nav and have generally been pleased with the outcome. However 10 days ago I had to go to Liverpool for work and arrived in the city in the dark. The message 'You have reached your destination' sounded and no sign of the hotel. I had used the postcode as the destination information but was suspicious when I entered the code into the device. Right, I was lost.

I knew that the school I had to visit the following day was in the same block as the hotel but in adjacent corners, facing Queens Drive. So, I entered the postcode of the school into 'Tom-Tom' and off I went. The next time the success sounded, sure enough, I was outside the school and it was not difficult to then navigate 'visually' to the hotel. A few chapters from the bible and bed!

The art of 'knowing where you are and how to get to somewhere else' is essentially information processing; good navigation help you to avoid becoming lost. If the information you have is incorrect, what chance do you have? If you fail to collect updating information as you move, you will become lost. If you fail to interpret the information that is either taken with you or gather on the way, then again you will become lost. In addition to this, there is a belief that some people have a natural ability to orientate themselves. Is this just another way of saying these people are efficient information processors but in an unconscious way?

These ideas arose during and following a conversation in very broken English with a Japanese professor of Informatics, Chiaki Aoyama of the University of Kansai. Among his many roles, he is currently researching people's ability to process information within the context of navigation. He argued strongly that good navigation means effective data processing; the corollary was that there are many and varied events that can interfere with navigation. I was sufficiently interested to dig deeper and to place these ideas in our context, in this country.

Straight away, we must ask the question, 'But what is the point?' I strongly believe that having the correct and pertinent information during the initial phase of a search operation is essential for the whole search operation, regardless of the duration of the search. The picture formed during the first phase of a search operation is very persistent; when fresh information becomes available, I have noticed a tendency for managers and searchers to hold on to earlier, discredited data. This could lead to wasted effort and a delayed conclusion. Having correct information at the start will avoid this possibility. Thus this will have benefit for search managers. It may also provide evidence for educators preparing people for the outdoors.

Therefore I have changed the brief I received for this session into 'What factors contributed to someone becoming 'lost'? My own search was now beginning, namely collecting evidence in support of any ideas. The original plan was to examine the existing Incident Reportsⁱ and to extract information relating to a definite category of incidents, namely Hill Walkers reported missing or overdue that required a search operation. What did I find and why did it prove unproductive?

Between Jan 2003 and Dec 2007, there were 522 incidents classified as searches for hill walkers in England and Wales. For analysis purposes, these incidents have fallen into three distinct categories based on party size.

Group	No Searches
Alone	140
Small (2 to 5)	254
Other	128
Total	522

I concentrated on the solo hill walker, attempting to establish how many were actually lost. The important thing to remember here is the evidence comes from the Incident Report. How the incident was initiated will give a clue to the cause. Take the following statistics,

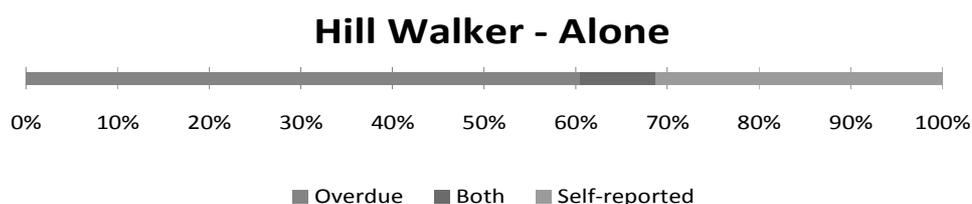


Figure 1 How an Incident was initiated for a 'Lost' Solo Walker

Approximately 3 in 10 searches for solo hill walkers were initiated by the person themselves. This number represents those that are truly 'lost' by their own admission, whereas the other may have been delayed but never 'lost'. The overlap, labelled 'both', represents those incidents initiated both by the missing person and those expecting their arrival.

Looking at the report narrative in greater details reveal the following possible reasons for the persons becoming lost or overdue.

Hill Walker - Alone

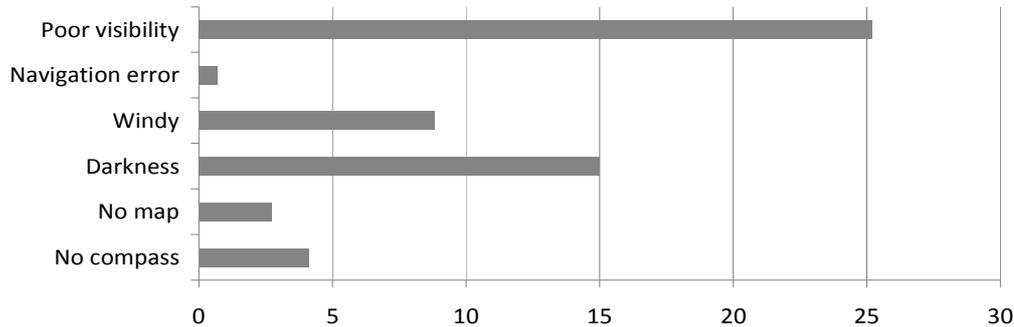


Figure 2 - Reasons cited for being lost or overdue (as percentages of 140)

With the exception of 'navigation error', all these contributory factors have been verified by the reporting MRT. Clearly the interesting facts are that 1 in 4 reported poor visibility, i.e. hill fog or low cloud and 3 in 20 were caught out by the onset of darkness. Both these are key aims to locating your whereabouts. I have heard many tales of navigation error in very windy conditions; the analysis here tends to support the thesis that environment factors are significant contributors to poor navigation. On the face of it, 'no map' and 'no compass' seem quite minor contributors; however, this does not take into account those incidents where this fact was not reported. Remember we can only analyse that which has been reported!

At this point further work using this source of data was suspended. It is clear that the data is unreliable because of the lack of consistency among the incident reports; namely, lack of mention of a factor cannot be interpreted that this was not a contributor in the incident. I know from my own experience there are times when search managers do not get to see and talk to the search subject on conclusion of the search. In summary therefore, Incident Reports have proved a poor source for answering the question 'Why do People get Lost?'

The second approach was to examine the data stored in the Missing Person Behaviour databaseⁱ. As was mentioned earlier (Para 2), this has been running since 2000 but does not contain all the instances where persons were reported lost or missing. Taking the same category as above, namely Hill Walker we get the following

Hill Walker (n=156) UK Missing Person Behaviour data

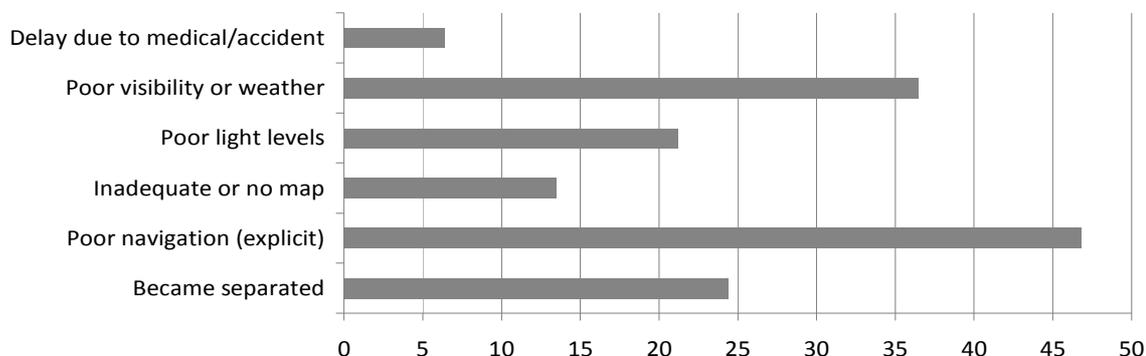


Figure 3 - Reasons cited for person becoming lost (percentage)

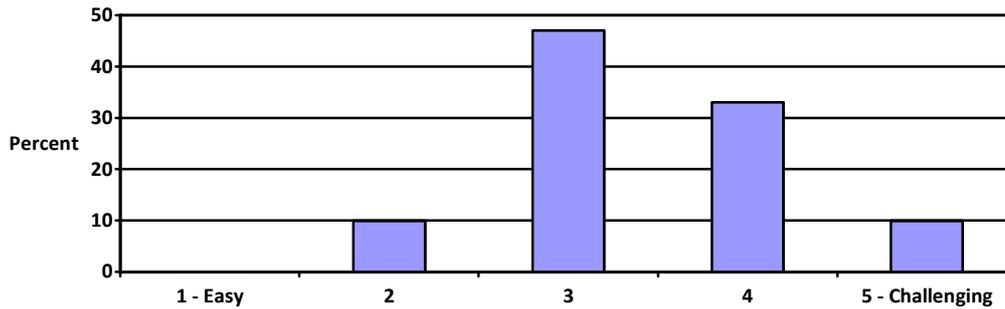
Even though the earlier analysis did not extend the parties reported missing, it is clear that becoming 'lost' is a regular result of parties becoming separated; the proportion is significant at 1 in 4. It is clear from the high proportion of 'poor navigation' returns that the reliability of the data is very different from the earlier work and parallels the anecdotal evidence from search managers. Likewise, the result that 1 in 3 incidents seem to be related to poor weather and/or visibility conditions is strong evidence for including this factor in further work. By the same token, the fact that poor light levels occurring in 1 in 5 incidents has to be worth further investigation.

The failure of these two data sets to give a clear answer to our question at first appeared worrying. Team leaders and their deputies devote a lot of time to document their incidents, but with the data we have, I have been unable to answer a simple question. But I have alluded to the possible reason for these data source failing to provide sensible answers. The one person who can answer these questions rarely contributes to any of these reports. If they do, their contribution is second-hand, possibly 'watered-down' or simplified. This is quite natural but it did point the way to gaining a definitive answer – ask the search subjects themselves!

The method adopted was as follows

- From the incident database, identify those search subjects in the category of Hill Walker reported as 'overdue' or 'lost'. This produced 150 incidents, but some involved more than one person, so one subject was chosen at random from such an incident
- From this subset of records, identify those with a useable postal address. This meant that the subset was now whittled down to 75 records.
- Each of these people was sent a letter of explanation, a short questionnaire and a stamped addressed envelope. From this 30, replies were received and formed the basis of subsequent analysis.

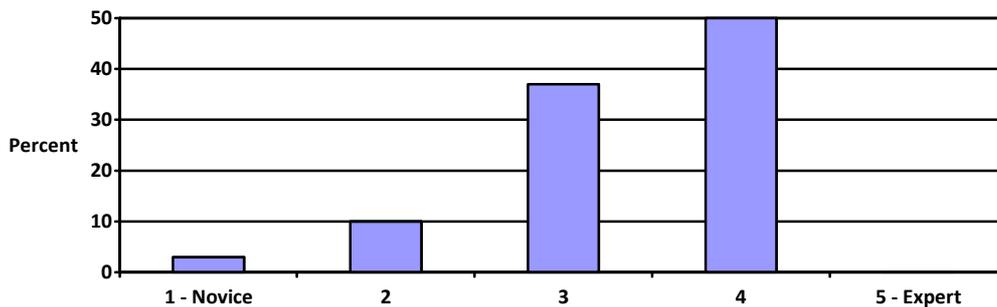
Chart 1 - How would you describe your intended walk?



Observations

- With the vast majority assessed the difficulty of the walk at 'average or above'. No one seems to have under-estimated the difficulty of the walk
- This assessment must be treated carefully as it has been made retrospectively (this statement is also true of the next three questions). By shifting the assessment downward by one, it may be fairer to say 50% **under-estimated** the difficulty of the trip.

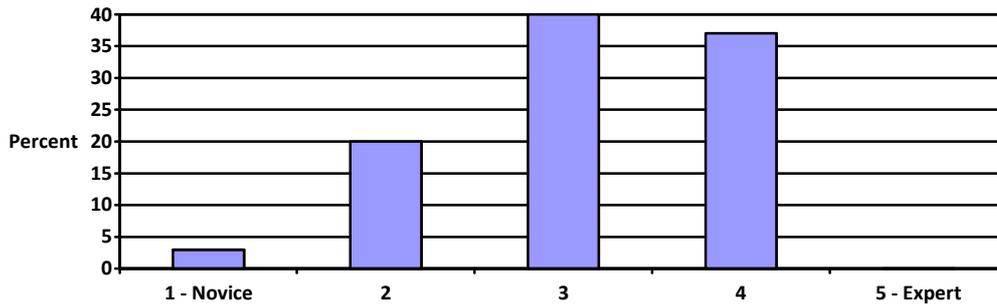
Chart 2 - How would you describe your hill walking experience?



Observations

- Note the similarity of the responses between this and the next question; the respondents may be guilty of equating the two skills as being the same
- Taken at face value, these figures are counter-intuitive. You would normally expect the inexperience to become lost but this is not borne out by these figures

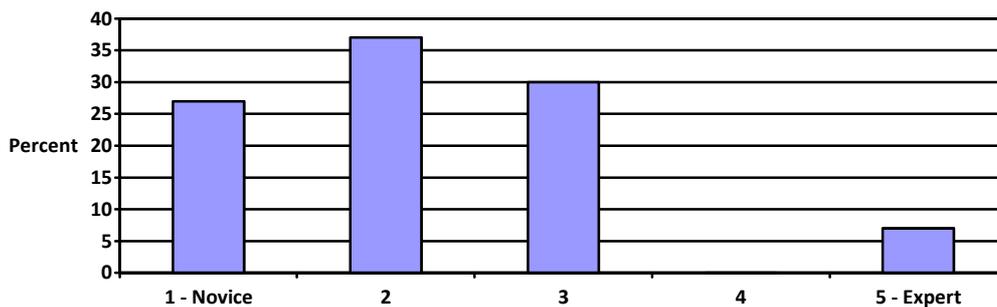
Chart 3 - How would you describe your navigation skills?



Observations

- More than with the previous question, we must suspect these answers as over-estimates of ability because of the outcome of their expeditions
- Adjust downward by one, means that nearly 3 in 5 persons had below average navigation skills

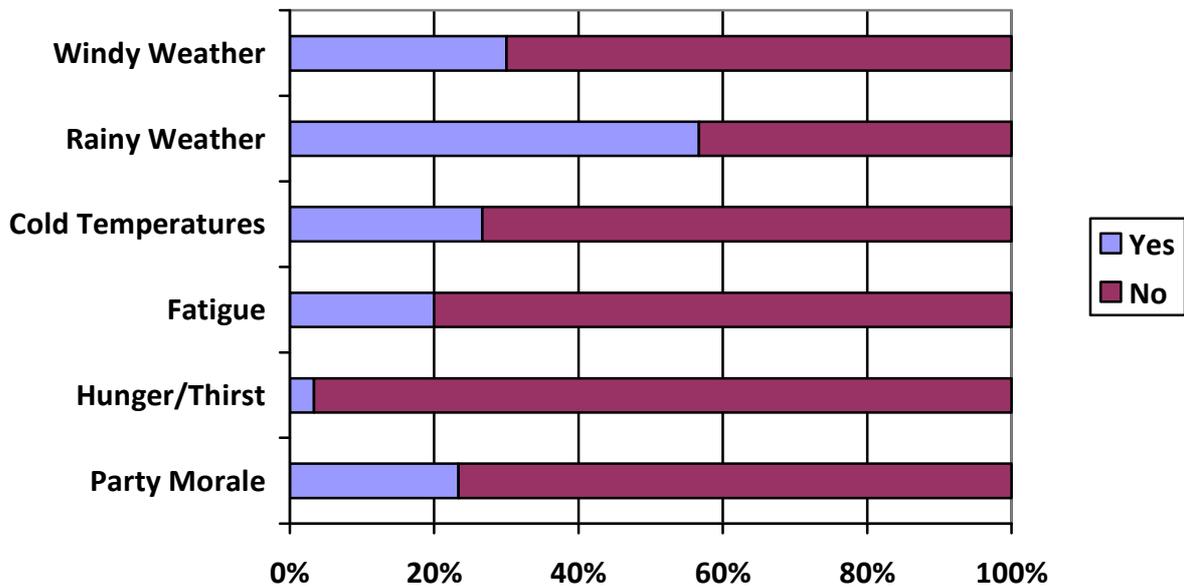
Chart 4 - How well did you know the area of your walk?



Observations

- Nobody is perfect!
- This lends weight to the ideas that lack of local knowledge places additional burdens on navigation skill, which in these cases were found wanting.

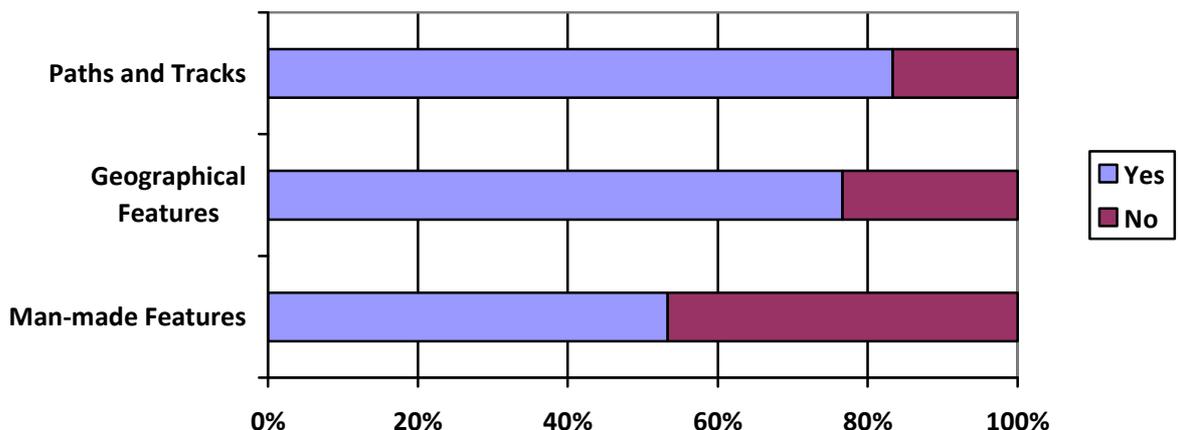
Chart 5 - Before you became 'lost', which of the following factors affected your ability to navigate?



Observations

- It is clear that climatic factors significantly affect navigation. Even considering any exaggeration by the inexperienced, this is still worthy of note.
- We must not forget that 'rainy weather' is directly linked to a later question on levels of visibility.
- It is fair to conclude that Hunger and Thirst figured very rarely as a contributor. Perhaps one message is getting through!
- The two remaining items appears related. Anecdotally, Fatigue is often a precursor to lower personal morale which again affects party morale

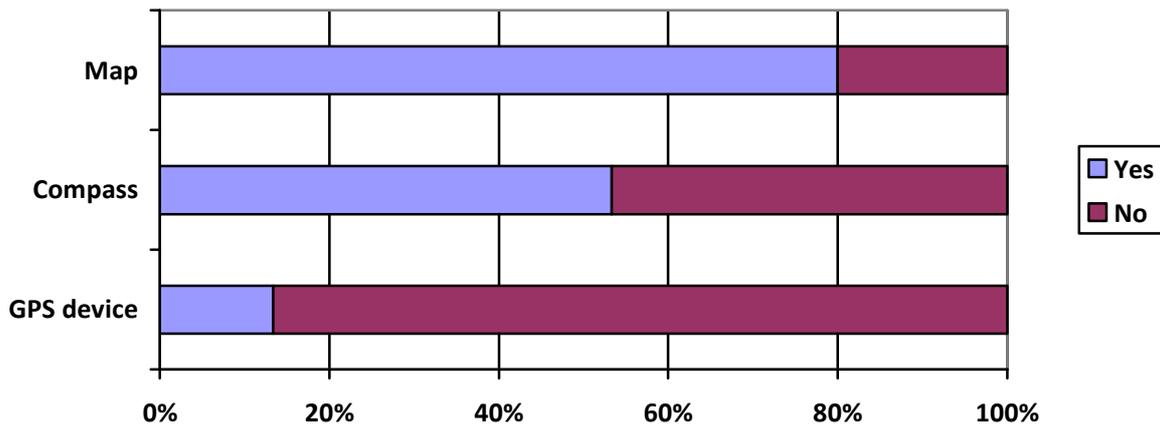
Chart 6 - Prior to becoming 'lost', were you generally following...?



Observations

- The fact that the respondents recognised that these features were key to successful navigation lends support to the belief that they may have mis-read the information they were giving.
- It is understandable that Paths/Tracks showed similar to Geographical Features as these two are often associated, paths follow ridges or drainage lies. But is the same not true for many dry-stone walls and fences?

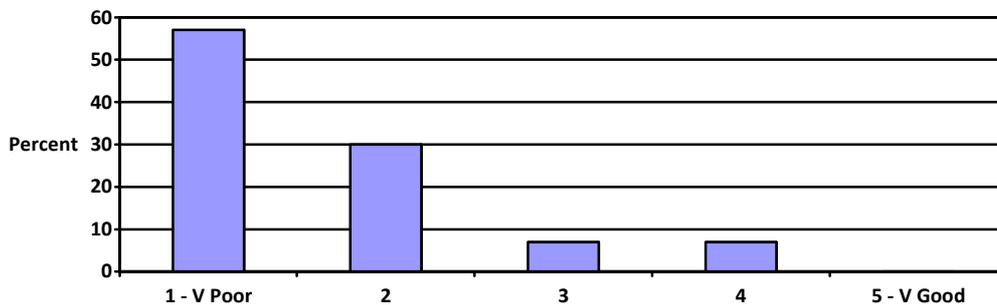
Chart 7 - At the time you were reported 'lost', were you using...?



Observations

- It is clearly worrying that 1 in 5 admitted to no having a map. Of the remainder, we have no estimate of the quality of the maps in use.
- Given the lack of visibility (see later), it is again of great concern that just over half admitted to using a compass. Again, the evidence of their becoming lost points to their poor use of this essential tool.
- Regarding GPS, even possession does not guarantee mastery; a child may have a violin but are they musical!

Chart 8 - At the time you were reported 'lost', what was the visibility like...?

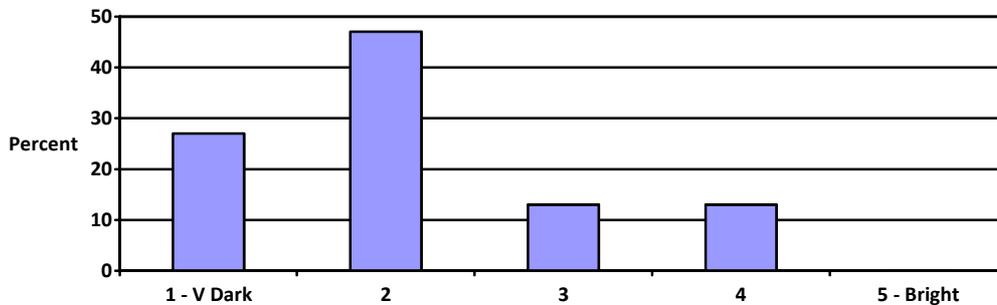


Observation

- The cynic in me says 'it this excuse time?'
- Clearly this confirms the common belief that movement in poor visibility requires good navigation skills

- It is possible to link this information and the fact that they became lost with the level of preparation and the choice of route. The choice of route in those weather conditions probably made it certain they would become lost.

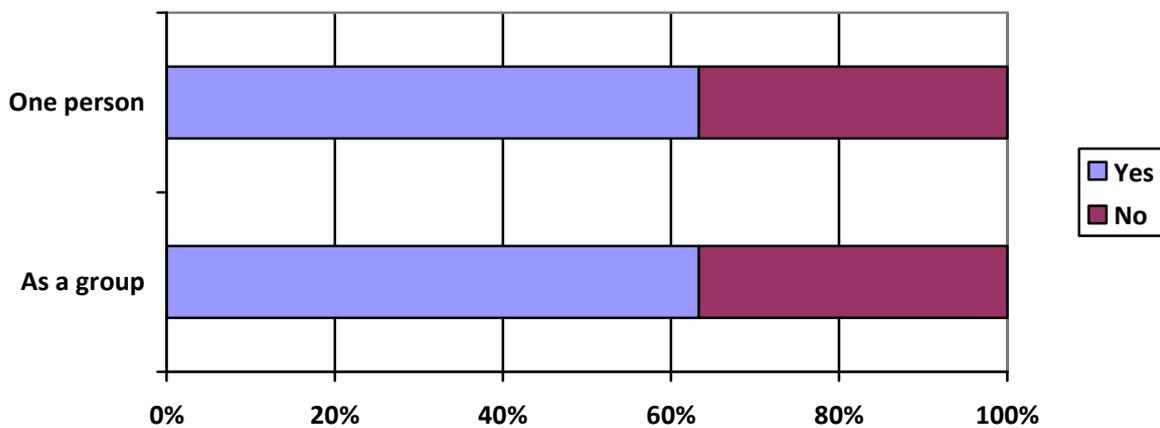
Chart 9 - At the time you were reported 'lost', what was the light level like...?



Observations

- I repeat my cynical view above
- Again it seems self-evident that with poor light levels, good navigation skills are essential for safe completion of most high-level routes.
- And again as with visibility, prior knowledge of sunset times together with effective party monitoring during the trip could have avoided the late finish

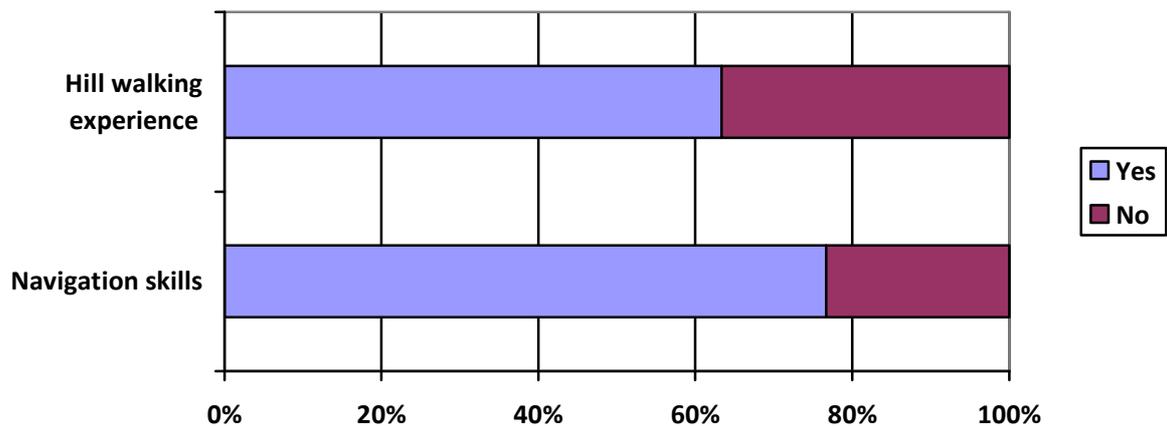
Chart 10 - How was the navigation managed?



Observations

- These categories are not mutually exclusive. Both management models could have been adopted at different times during the passage of the walk
- Not convinced this factor, autocratic or democratic, is influential.

Chart 11 - Do you intend to get help to improve...?



Observations

- It is encouraging that there is evidence that these respondents have acknowledged their navigation skills were inadequate. This lends support to the re-assessment of information in Chart 3.
- The opposite is however true for hill walking experience; I would have expected recognition that a key feature of hill walking is the preparation that goes into a walk. Here I am thinking about weather forecasts and sunset times, key factors governing my ability to navigate with my current skill level.

CONCLUSIONS

This is a simple exercise that can be replicated by any team. What it has shown is consistent with the beliefs of many in MR. These can be summarised as follows:-

1. Navigation is key skill in hill walking
2. When hill walking, you must always be actively navigating at all times
3. Navigation is the results of combining skill, map and compass.
4. Navigation and adequate planning will greatly reduce the chance of 'getting lost'

MR needs to continue broadcasting this message and educators must keep navigation at the top of their list of priorities.

Ged Feeney

Mountain Rescue (England & Wales) Statistics Officer

6th Sept 2008

ⁱ For every incident attended by MRTs in England and Wales, an Incident Report is completed and sent to the MR(E&W) Statistics Officer. This database will be the source of information for the original plan.

ⁱⁱ At the same time as completing an Incident Report, MR team leaders or their deputies are encouraged to complete a second data collection sheet. This gathers data specific to a missing subject; it collects data that may be helpful to search managers searching for similar type of missing persons.