

Appendix I

Lost Person Behaviour

Lost Person Behaviour (LPB) has been derived from many studies and statistics gathering from search and rescue groups in many countries of the world. It has been found that certain categories of missing persons tend to have similar characteristics with respect to being lost. These categories have been broken down into the following groups:

- a. Children 1-3 years of age
- b. Children 4-6 years of age
- c. Children 7-12 years of age
- d. Youths 13-15 years of age
- e. Despondents or Suicide
- f. Psychological Illness'
- g. Developmental Problems
- h. Alzheimer's and Dementia
- i. Hikers and Walkers
- j. Climbers
- k. Hunters

Definitions:

Children 1-3yrs: All children aged 1-3 years of age.

Children 4-6yrs: All children aged 4-6 years of age

Children 7-12yrs: All children aged 7-12 years of age.

Youths 13-15yrs: All teens aged 13-15 years of age.

Despondent: A person feeling or showing signs of profound hopelessness, dejection, discouragement and/or gloom. This includes depression and people who have expressed the intent to commit suicide. Not all despondent's are suicidal and similarly not all suicidal persons are despondent but they have similar characteristics and are therefore combined for SAR purposes.

Psychological Illness: This category covers persons suffering from a wide range of mental disorders that medically would not be used together. They include persons suffering from schizophrenia, paranoia, psychotic disorders and bipolar disorders. These disorders can be naturally occurring or artificially induced such as by substance abuse. This category does not include dementia.

Developmental Problems: Also called Mental Retardation or Intellectual disability is a combination of below average intellectual functioning, impairments in daily life (communication, self-care, social skills, work, safety, health) and was onset prior to the age of 18 years. This category also applies to persons suffering brain injuries after 18 years that exhibit the same symptoms.

Dementia: Dementia is the loss of memory, reason, judgement and language to such extent that it interferes with daily living. Dementia includes AIDS and Alcohol related dementia, Alzheimer's Disease, Down Syndrome, Early or Younger Onset Dementia, Fronto Temporal Lobar Degeneration, Vascular Dementia and Dementia with Lewy bodies. Dementia often results in severe disturbances in how a person perceives and interprets events, sights, and sounds around them.

Hikers and Walkers: This category includes day walkers, members of bush walking clubs, hill/fell walkers, multi-day hikers, trekkers, orienteers and other persons who purposefully enter the bush for recreational walking purposes. Mountaineers are included in the climbing category.

Climbers: This category includes day climbers (single day outings, bouldering, rock and cliff climbers, traditional climbers and sport climbers) and mountaineers (those who attempt prominent peaks or alpine travel).

Hunters: This category includes all forms of hunting (pigs, water buffalo, brumbies, game fowl, kangaroos, cattle) on land. There is insufficient data for a further breakdown.

These are the most common groups of missing persons likely to be the subject of a search in Australia.

There have been numerous studies on missing person behaviour with the most recent being Robert Koester's (ISRID) International Search and Rescue Incident database www.dbs-sar.com collating thousands of incidents, statistics and previous studies for an international database. This information is continually being analysed and updated with Koester currently dividing missing person statistics to eco regions around the world that will enable more defined distances of travel for particular areas such as Victoria, a temperate terrain, as opposed to Northern Territory a hot dry terrain. The only specific Australian project on missing person behaviour was the SARBAYES project which was completed by Charles Twardy: <http://sarbayes.org/natsar.pdf>. The current Australian data base for the entry of LPB details is: <http://goo.gl/OLZmW>

Overseas studies also look at other categories such as hunters, skiers and miscellaneous adults. The three main LPB studies used for this manual have been taken from the UK, USA and Canada. Although Australia has many links with the UK and the majority of our citizens have a British background we are a more mobile and active society more closely resembling Canada in our lost person behaviour. These tables have been prepared as a guide only and are a compilation of studies in the above countries. They represent the statistical properties and characteristics of missing persons and what could be expected of them when they are lost, but ultimately these are only probabilities, not certainties.

This information can be used as the basis of search planning when no other information is available. Obtaining a good profile of the target person will assist the SMC in determining whether that person/group fits into the known behavioural patterns of the various categories studied. If so then further planning can be carried out on the information contained within this section. The SMC must always be aware that not everyone will adhere to these profiles. As can be seen in the distances travelled, 80% are within a relatively small area while the last 20% of persons in each category tend to travel much greater distances.

The studies show what the majority will do, there will always be someone outside the box who will do the opposite of what is expected.

Children 1-3 years

Characteristics: 1-3 year olds

- a. Have no concept of being lost.
- b. Navigational skills are non-existent
- c. Will wander aimlessly
- d. Will not often respond to commands or whistles.
- e. Will tend to find shelter, which increases their survivability.

Tendencies:

- a. Will often seek out a place of shelter. Thick bushes, tables, old vehicles or appliances, caves.
- b. Difficult to detect.
- c. Will rarely self-help or walk out.

Strategies:

- a. Urgent response
- b. Confinement is a low priority.
- c. Passive techniques are not often successful.
- d. Dogs may be helpful if used quickly.
- e. Checks of places of highest probability to be made initially.
- f. Teams to run main tracks and trails.
- g. May require getting down onto hands and knees to identify other less obvious tracks.

Where located statistically:

- | | | |
|----|-------------------------|-----|
| a. | Habitation | 25% |
| b. | Building/shelter | 25% |
| c. | Open ground | 25% |
| d. | Fence line, hedge, wall | 12% |
| e. | Water, water's edge | 12% |

% of category	10	20	30	40	50	60	70	80	95%
Distance from LKP (KM)	0.11	0.25	0.3	0.42	0.6	1.15	1.6	2.10	4.45

Children 4-6 years

Characteristics: 4-6 year olds

- a. Have an idea of being lost and will endeavour to return to home or to a familiar place.
- b. Will panic, which may cause them to become further lost.
- c. Explorations are usually one way, as a result of not comprehending to need to make a return journey.
- d. Will tend to remain on tracks or what they perceive as tracks. Not always visible to taller adults.
- e. Are considerably more mobile than smaller children.
- f. May have been following an adult or animal prior to getting lost.

Tendencies:

- a. Will often seek out a place of shelter. Thick bushes, tables, old vehicles or appliances, caves.
- b. Difficult to detect.
- c. Will rarely self-help or walk out.

Strategies:

- a. Urgent response
- b. Confinement is a low priority.
- c. Passive techniques are not often successful (Consider nicknames).
- d. Dogs may be helpful if used quickly.
- e. Checks of places of highest probability to be made initially.
- f. Teams to run main tracks and trails.
- g. May require getting down onto hands and knees to identify other less obvious tracks.

Where located statistically:

- | | | |
|----|---------------------|-----|
| a. | Habitation | 28% |
| b. | Building/shelter | 27% |
| c. | Road, linear | 19% |
| d. | Bush, scrub | 11% |
| e. | Open ground | 8% |
| f. | Water, water's edge | 7% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.1	0.21	0.48	0.75	0.95	1.3	1.68	2.57	5.47

Children 7-12 years

Characteristics:

- a. Have developing navigational skills.
- b. Are developing mental pictures of their environments, which are often inaccurate and highly distorted.
- c. Often become lost while attempting a short cut.
- d. Often become lost while 'role playing' or adventuring.
- e. Often become upset upon being lost and will act irrationally.
- f. May attempt to track run which can take them further from their LKP.
- g. Will act more rationally if with a friend or sibling.
- h. Will often attempt to self-help, not always successfully.

Tendencies:

- a. Will mostly stay on tracks or trails.
- b. May seek out favourite places, hideouts etc, check with friends
- c. May seek out known landmarks, lookouts, high points, places they have been to in the past, lakes, ponds, areas where vegetation changes such as forest edges.

Strategies:

- a. Urgent response
- b. Confinement is a high priority
- c. FAST and Reconnaissance teams to highest probability areas.
- d. Use dogs if available
- e. Passive techniques are not often successful.

Where located statistically:

- | | | |
|----|---------------------|-----|
| a. | Habitation | 28% |
| b. | Building/shelter | 27% |
| c. | Road, Linear | 19% |
| d. | Forest/woods | 11% |
| e. | Open ground | 8% |
| f. | Water, water's edge | 7% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.23	0.47	0.85	1.39	1.98	3.00	4.05	5.15	10.2

Youth 13-15

Characteristics:

- a. Moderately developed navigational skills
- b. Often become lost as part of a group engaged in exploring.
- c. Don't often travel far.
- d. Often respond to attractant techniques.
- e. Often seek familiar locations by direction sampling.
- f. Will act more responsibly as part of a group.
- g. Will often attempt to self-help.
- h. May panic if alone

Tendencies:

- a. Will mostly stay on tracks or trails.
- b. May seek out favourite places, hideouts etc, check with friends
- c. May seek out known landmarks, lookouts, high points, places they have been to in the past, lakes, ponds, areas where vegetation changes such as forest edges

Strategies:

- a. Urgent response
- b. Confinement is a low priority unless MP is alone
- c. FAST and Reconnaissance teams to highest probability areas.
- d. Use dogs if available
- e. Passive techniques are not often successful.

Where located statistically:

- | | | |
|----|-------------------------|-----|
| a. | Habitation | 24% |
| b. | Stream/waterway | 22% |
| c. | Building/shelter | 21% |
| d. | Forest/ woods | 11% |
| e. | Road, Track | 11% |
| f. | Forest edge or clearing | 11% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.5	1.1	1.47	1.85	2.2	3.03	3.79	4.37	14.43

Despondent

Characteristics:

- a. Don't often travel far, but intent to be alone
- b. Often located a border of two types of terrain and/or vegetation boundary
- c. May head for a scenic location or well-known beauty spot.
- d. Locations are often well known to MP, check with family
- e. Rarely located in dense underbrush or trees.
- f. Rarely respond to call and whistles and may hide.
- g. Very high fatality rate
- h. Drugs and/or alcohol often involved.

Tendencies:

- a. Go to high points or scenic locations.
- b. Well known or favourite places.
- c. Terrain interfaces
- d. Group 1- merely seeking to get out of sight.
- e. Group 2-will seek out a specific location, significant to their life.
- f. May travel further.

Strategies:

- a. Investigation important
- b. Obtain a good subject profile from family and friends.
- c. Urgent response
- d. Thorough search of a small area
- e. Confinement is a low priority
- f. Passive techniques not successful

Where located statistically:

- | | |
|-------------------------|-----|
| a. Habitation | 26% |
| b. Water/water's edge | 24% |
| c. Forest/woods | 16% |
| d. No trace | 13% |
| e. Road | 11% |
| f. Forest edge/clearing | 9% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.14	0.33	0.56	0.87	1.18	1.76	2.43	3.22	18.14

A small percentage of all persons who go missing do so with the intent of committing suicide. The reasons for this are beyond the scope of this document but a wide and varied. The SMC should consider whether the MP is genuinely at risk of taking their own lives and what strategy should be used. Studies have shown that there is a

strong link between depression and suicide. The two strongest indicators that a depressed person may contemplate suicide are:

- a. They have left a suicide note indicating their intentions of taking their own lives.
- b. They have recently talked about taking their own lives.

The SMC needs to obtain a detailed profile of the target person. There is often something in their background that is either the cause or trigger for them to contemplate suicide. Problems to look for are:

- Relationships
- Finances
- Sexual
- Employment
- Education
- Medical
- Mental health
- Addictions

If someone who is suffering depression has indicated an intention to take their own life, and has one or more of the above triggers present, there is a high probability that the person poses a high risk of taking their own life. The risk is normally low pre teens and increases during puberty and adolescence, reaching a peak in the mid twenties and remaining relatively constant until old age.

Religious conviction may be an indicator of suicide intent. Strongly Christian believers are less likely to commit suicide. Those with no religious beliefs have a high tendency towards suicide. In some religions, such as Judaism, Islamic, Hindu, Shinto, suicide is a valid way to depart earth.

If there is a suicide note, the contents may provide important information regarding where and how the person intends to suicide. It may provide specific information about a favourite or known location. It may also indicate that they will not be found which may point out that they will be in a secluded or difficult to reach location. The presence of a note does not automatically mean that the target has committed suicide as some people use these notes for shock tactics to get attention or they change their minds and not follow through.

Gender is very important in determining whether suicide is a possibility. Men are three times more likely to take their own lives than women (ABS 2012). Men, 18-45, are the greatest at risk. Within the men group Aboriginal and Islander males are at a higher risk than average. Hanging is the most popular method (51%), with poisoning by drugs (15%) and poisoning by other methods such as car exhaust (16%) following. Jumping from high buildings, drowning, firearms etc account for the remainder. Married men are less likely to commit suicide.

Once a person has reached the decision to commit suicide they generally want to carry it out as soon as possible for the least amount of effort. Access to the means to do so should be investigated by the SMC as this may determine how and where it may take place.

There are many recorded instances where an adult has gone missing with their children. The killing of the children prior to suicide is not uncommon.

With the increased mobility of today's young people it is often difficult to obtain sufficient details of a missing person because they have not established a close circle of friends. Computer sites such as 'You tube', Face Book' and 'My space' may provide details about a missing person and any intentions that they may have.

Psychological Illness

Characteristics:

- a. May be evasive and run or hide
- b. Often not respond to their name
- c. Rarely travel purposely to a target
- d. Medication or lack of it may be a problem.
- e. May be frightened of authority and of being found
- f. Can be aggressive
- g. Not actually lost in the normal sense.
- h. Difficult to predict behaviour

Tendencies:

- a. Do not often penetrate forest or thick undergrowth
- b. Will seek shelter and seclusion
- c. May walk out when ready

Strategies:

- a. Check all buildings and places of shelter/seclusion
- b. Check drains, streams and tracks.
- c. Obtain profile by talking to family, friends and medical experts.
- d. Dogs may be of use.
- e. Containment a priority
- f. Re-search areas and tracks
- g. On going search of buildings as target may return to areas already searched.

Where located statistically:

- | | |
|---------------------|-----|
| a. Road, Linear | 29% |
| b. Habitation | 19% |
| c. Building/shelter | 14% |
| d. Stream | 14% |
| e. No trace | 9% |
| f. Open ground | 9% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.22	0.45	0.71	0.98	1.23	2.25	3.47	4.7	11.73

Developmental Problems

Characteristics:

- a. lack the concept of being lost
- b. Cross between young children and Alzheimer's.
- c. Generally good survivability
- d. Do not often respond to names or other signals.
- e. May also have a physical impairment.
- f. Rarely travel to a specific target but will seek shelter
- g. Will often penetrate thick forest and undergrowth
- h. Will often run away and avoid searchers.

Tendencies:

- a. Not route orientated.

Strategies:

- a. High urgency
- b. Obtain profile from family
- c. Dogs may assist
- d. Detailed ground search
- e. Check streams and drains
- f. Re searching areas is important.
- g. Check buildings etc ongoing.

Where located statistically:

- | | |
|---------------------|-----|
| a. Building/shelter | 40% |
| b. Road, Linear | 30% |
| c. Forest | 20% |
| d. No trace | 6% |
| e. Open ground | 4% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.23	0.46	0.83	1.34	1.85	2.88	3.9	5.02	23.9

Alzheimer's/Dementia

Characteristics:

- a. Poor short term memory but may remember things that happened many years ago, such as address while a child.
- b. Impaired ability to rationalise surroundings.
- c. Often last seen in their home or a nursing home.
- d. May have a previous history of wandering
- e. Other physical problems may exist (Limited mobility, poor sight or hearing)
- f. May be seeking a secluded location
- g. Will not attract attention or respond to calls.
- h. Possible not concept of being lost
- i. Will not often leave any clues apart from paradoxical undressing.
- j. Often succumbs to the environment (Hypothermia etc)
- k. 25% fatality rate if not located within first 24hrs
- l. Two types, walkers and non walkers

Tendencies:

- a. Often located a short distance from a road or path.
- b. Will often attempt to travel to a place previously known to them.
- c. Will be stopped by fences, hedges etc.
- d. Will tend to walk on the path of least resistance, downhill, and not often uphill.
- e. Can be found in drains or streams due to the low levels.
- f. May remove items of clothing

Strategies:

- a. High urgency
- b. Early containment is essential
- c. Use dogs or trackers
- d. Check all drains and low lying areas.
- e. Check all fences, hedges and private yards in vicinity
- f. Thorough search of the house, nursing home, and repeat every few hours.
- g. Search heavy bush
- h. Search previous home locations.

Where located statistically:

- | | |
|--------------------------|-----|
| a. Habitation/ structure | 35% |
| b. Road | 35% |
| c. Water | 10% |
| d. Open ground | 6% |
| e. No trace | 5% |
| f. Forest | 4% |
| g. Clearing | 3% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.19	0.39	0.64	0.97	1.28	1.90	2.53	3.2	10.32

Hikers/Walkers

Characteristics:

- a. Often track orientated but become disoriented if they miss their track junctions or it is overgrown and not easily found.
- b. Tend to travel further than other categories.
- c. At times poorly prepared or experienced for type of walk.
- d. Will often attempt to self-help by track running or seeking a high spot.
- e. May follow paths of least resistance, such as streams and forest boundaries.
- f. May panic and be irrational
- g. May look for shelter in poor weather, at nightfall or if injured.
- h. May seek higher ground to attempt a reorientation
- i. May seek higher ground to gain mobile telephone reception

Tendencies:

- a. Stay on tracks
- b. Seek shelter
- c. Seek high ground

Strategies:

- a. Containment
- b. FAST and Reconnaissance teams to high probability areas.
- c. Track searches.
- d. Obtain profile and route details
- e. Being clue aware.
- f. Be aware of the potentially large distances the MP could have walked.

Where statistically located:

- | | |
|---------------------|-----|
| a. Road, Linear | 48% |
| b. Stream | 27% |
| c. Building/shelter | 10% |
| d. Fence | 4% |
| e. Forest edge | 3% |
| f. Forest | 3% |
| g. Open ground | 1% |
| h. Water | 1% |

% of category	10	20	30	40	50	60	70	80	95
Distance from LKP (KM)	0.45	0.92	1.41	1.99	2.56	3.15	4.31	5.76	15.15

Hunters				
Characteristics:				
<ul style="list-style-type: none"> a. Often game focused, which tends to contribute to their being lost. b. Will not often acknowledge that they are lost. c. Following targets often leads them to deadfall areas, boulder fields, underbrush or dense forest. d. Will go to great lengths to self-help. e. Will sometimes avoid searchers for fear of embarrassment. f. Often rely on GPS, radios and mobile phones. g. Usually mobile and responsive. h. Tend to travel at night and will follow linear features. i. Will take easy routes, ridge lines, cross country. j. Will make shelter and fire where possible. 				
Tendencies:				
<ul style="list-style-type: none"> a. Will attempt to self help b. Seek shelter c. Seek high ground 				
Strategies:				
<ul style="list-style-type: none"> a. Containment b. FAST and Reconnaissance teams to high probability areas. c. Use of attraction techniques. d. Check historical finds e. Air searches. f. Be aware of the potentially large distances the MP could have walked. 				
Where statistically located:				
<ul style="list-style-type: none"> a. Road 52% b. Forest 10% c. Building/shelter 9% d. Stream 9% e. Water 8% f. Ridges 6% g. Open ground 3% h. Rocks 3% 				
% of category	25%	50%	75%	100%
Distance from LKP (KM)	0.96	2.09	4.82	17.2

Climbers

Characteristics:

- a. Will often travel considerable distances to reach climb site.
- b. Generally well equipped but beginners may attempt difficult climbs without adequate equipment.
- c. Often overdue because of over estimation of climbing ability (39%).
- d. May be caught out in bad weather (24%)
- e. Being lost is not common (17%).
- f. Being stuck because of weather is common.
- g. Trauma is often experienced (Rocks falling on them or others).
- h. Will often be lost going to and from the climb site.
- i. Some climbers are stranded by nightfall (12%) and can not go up or down.

Tendencies:

- a. Will attempt to self help
- b. Seek shelter
- c. Seek high ground

Strategies:

- a. Containment
- b. FAST and Reconnaissance teams to high probability areas and tracks.
- c. Use of attraction techniques.
- d. Snow/Avalanche search if necessary
- e. Thorough search of 25% zone
- f. Climbing location is the immediate area
- g. Check other climbs and routes in area.

Where statistically located:

- a. Scrub 40%
- b. Water 27%
- c. Rocks 27%
- d. Road 20%
- e. Ridges 18%
- g. Open ground 9%
- h. Stream 9%
- i. Forest 9%

% of category	25%	50%	75%	100%
Distance from LKP (KM) Day climber	0.0	0.3	0.8	1.8
Mountaineer	0.1	1.0	3.0	10.5