CHAPTER EIGHT

SEARCH COMMUNICATIONS AND RADIO EMPLOYMENT

COMMUNICATIONS

8.01 The communications system is the means by which control is maintained and therefore any system should be:

a. efficient;

b. reliable; and

c. self-sustaining.

8.02 It is the task of the Communications Officer to ensure that as far as practicable, the Field Search Controller's actions and decisions are never restricted through lack of communications.

8.03 Although Communications Officers need not be technicians, they must understand the broad characteristics, capabilities and limitations of the various means of communications which may be employed. Good communications do not just happen - they must be planned.

COMMUNICATIONS REQUIREMENTS

8.04 The possible variations in requirements are almost unlimited but can be broadly classified as:

a headquarters;

b. rear net; and

c. forward net.

HEADQUARTERS REQUIREMENTS

8.05 The Search Headquarters may be the nearest Police Station or building which already has telephone facilities and good access. If this is not available, consideration must be given to the following aspects in choosing the site for Search Headquarters:

a A house or building with telephone, light and power already connected.

b. A site satisfactory for radio, which is elevated and clear of possible sources of electrical or other interference. This site would normally be chosen by the Communications Officer provided it was compatible with the other operational factors mentioned.

c. Good access for both vehicles and people to provide for possible use of messengers.

8.06 If a telephone is available maximum use should be made of this facility, but a back up radio system may be necessary. If distances are short, field telephones are an efficient alternative. Messengers could be used if no other method was available.

REAR NET

8.07 This may involve communications from Search Headquarters to:

a Field Search Headquarters;

b Support Base:

c. Assembly Area (if established);

d statutory authorities;

e. government instrumentalities; and

f. voluntary organisations.

8.08 Communications here would most likely be by telephone. If the search appeared to be escalating into a lengthy operation, consideration could be given to the provision of direct telephone lines by liaising with Telecom However, cost is likely to be incurred therefore expenditure approval should be obtained before installation.

FORWARD NET

8.09 This can be defined as the communications required from Field Search Headquarters to the searchers in the field and these requirements can vary considerably. The most likely configuration would be from Field Search Headquarters to:

a. Support Base:

b. search teams; and

c. sub-headquarters if employed.

8.10 The principle here is to use whatever communication systems are available, but generally the forward net would depend on radio. Satisfactory communications can be quickly established provided the Communications Officer is aware of the Field Search Controller's operational requirements relating to quantity, range, and the terrain over which they will be required to operate. If the operators understand the basic characteristics and limitations of the sets in use, and normal radio net discipline is maintained, reliable communications will be achieved

8.11 A sample of the search communications net diagram is shown as Annex A to this Chapter

CHARACTERISTICS OF RADIOS

8.12 There are certain terminologies used when discussing radios, and the Field Search Controller should be aware of these and what they mean All radio transmitters emit electromagnetic waves on a particular frequency and it is this frequency of operation along with the power output of the set which governs its operational characteristics.

CHAPTER SEVEN

SEARCH RECALL AND STAND DOWN

GENERAL

7.01 Many an operation, whether successful or not, has been marred by bad recall and stand down procedures. An operation cannot be concluded until all participants are either at their homes or local headquarters and all stores and equipment accounted for and refurbished.

7.02 This important phase of the operation is often overlooked from the control aspect, and as a result causes situations ranging from disorganised to chaotic.

END OF SEARCH

7.03 The end of a search is reached when any of the following conditions are met:

a. The missing person(s) is found.

b. Coverage of the search area to the satisfaction of the Field Search Controller has been carried out.

c. When the decision is made by the Search Commander, with all factors considered.

d. Risk to searchers cannot be justified.

ACTION AT END OF SEARCH

7.04 Once a decision has been made to conclude a search, a procedure must be implemented to transfer to the stand down phase for field teams, and to account for all equipment and personnel involved.

RECALL

7.05 The recall order will generally be conveyed to the search teams by means of radios. Depending on conditions it may be necessary to arrange for radio checks or 'schedules' at pre-determined times. In this case, time could be saved if a pre-arranged signal could be used to convey the recall order. This signal may also be required if a radio proved to be faulty. Any noise making medium could be used, such as a shotgun, siren, horn, whistle, etc.

7.06 The accepted recall signal is four sounds close together. During the briefing, Team Leaders are to be advised what the alternative recall signal will be if it cannot be conveyed by radio.

7.07 FAULTY RADIO

If a fault develops in a search team's radio, every endeavour should be made to contact nearby search teams either by voice or pre-arranged signal.

7.08 **RECALL: FIELD PROCEDURES**

In the event of the person being found, all search teams should be stopped until it is determined if assistance is required to evacuate the person. If required, teams will be re- deployed to assist. Those not required would be recalled to the Field Search Headquarters.

7.09 **RECALL: SEARCH HEADQUARTERS PROCEDURES**

a. All search personnel should be checked off against the registration lists as they return.

b. Adequate welfare facilities, eg. hot cold drinks, food and rest areas should be available.

c. Debrief of teams should be carried out as soon as possible.

d. All equipment and stores should be returned and checked off.

e. Once all teams are accounted for and a decision is made to pack up and depart, all personnel should receive a final debrief. Personnel should then be checked off the register (including Field Search Headquarters staff) and all equipment should be accounted for and restored.

STAND DOWN

7.10 Once the decision to depart is made, a check should be made to ensure that all personnel have transport available.

7.11 Ensure that the Field Search Headquarters site is left clean and tidy, removing all refuse and restoring the area as near as possible to its original condition.

CONCLUSION

7.12 Good recall and stand down procedures are as important to the operation as good search techniques. It is natural for groups and individuals to want to get home as soon as possible after an operation, but it is essential that personnel conform with the stand down procedures listed. No individual or group should leave the Field Search Headquarters area until authorised to do so.

7.13 It must be remembered that once control is lost, it is very difficult to regain. It should be emphasised that there is a need for stand down procedures

8.13 The most common methods of radio communications are listed below:

a. **HF (High Frequency)** - HF operates in the band 3 to 30 MHZ. In addition to ground waves, sky wave operation is possible which vastly increases the range. This type of transmission relies on 'bouncing' radio waves from a layer of ionised gases 150 km above the earth's surface and back down to ground. Considerable distances can be achieved using HF. However, the system tends to be noisy and requires large aerial installations and some degree of expertise to operate. It would normally be used only as a rear link back to a search headquarters.

b. **VHF (Very High Frequency)** - VHF operates in the band 30 - 300 MHZ. This type of transmission is commonly used by mobile radio fleets and gives reliable communications over a distance of 20 - 30 km. It is primarily 'line of sight' transmissions. This means that hills or major obstacles may impede reliable communications and the base site should always be as high as possible. Some difficulty may be experienced at times by searchers losing communications. If this happens, operators should be aware that a small change in location or moving to a high point may assist in regaining contact. This applies equally to UHF.

c. **UHF (Ultra High Frequency)** - UHF operates in the band 300 - 3000 MHZ. This method is strictly 'line of sight' and in flat or open terrain, to increase its range, it requires repeater stations on some high point to relay messages and therefore requires some degree of technical expertise to install.

RADIOS, GENERAL

8.14 Modern 2-way radios are generally of a robust construction but must be treated with care. They should not be dropped, immersed in water or left out in the rain, and ancillary items such as microphones and aerials should be handled carefully.

8.15 Attention must be given to the state of the batteries in portable sets and spare batteries should always be available. Batteries should not be left in sets which will not be used for any length of time. It is recognised that most radio failures are caused by a lack of care and knowledge on the part of operators, rather than deficiencies within the sets themselves.

GROUND TO AIR COMMUNICATIONS

8.16 Aircraft operate on aviation transport group frequencies allocated by Department of Transport and Communications and can be contacted through the airport control tower, but radios are available which can contact aircraft on a special frequency. Prior arrangement with the aircraft pilot is necessary to work on this channel as the aircraft normally listens out on tower frequencies. Another alternative is to place on board the aircraft a portable radio on the same frequency as is being used by the search teams.

PROCEDURES AND PRACTICES

8.17 To achieve efficiency, standard radio procedure should be used Although two-way conversations will be needed, messages should be written. It may also be necessary to refer to past actions or decisions and this makes necessary the keeping of a written record. Search Team Leaders should carry a note book to record messages.

RADIO SCHEDULES

8.18 Regular (hourly or half-hourly) radio schedules should be organised. In protracted operations, search teams may be advised to turn their radios off other than at these times to conserve batteries It must be emphasised to all searchers that failure to meet a radio schedule could be the cause of a second search being started. The base radio should AT ALL TIMES be left on and a listening watch maintained.

RADIO EQUIPMENT

8.19 The radio net can be efficient only if radio operators are competent at their job. The following points illustrate key factors in effective radio operation and procedure:

a. **Microphone Technique** - Microphones generally should be held as close to the mouth as a telephone and speech should be slightly louder than normal conversation. Do not whisper or shout

b. **Press-To-Talk Switches**

(1) Ensure that the press-to-talk switch has been fully depressed before beginning to speak.

(2) Check to make certain that microphones are returned to their mounting brackets and that the press-to-talk switch is released. Failure to do so may result in some embarrassing moments but worse, may render a network useless.

c. **Channel Selection** - Prior to operations, radios should be checked to ensure that they are on the correct channel. When some equipment is located close together, communication may be possible even though they are switched to different channels. The problem will become obvious only when the transceivers are operated at some distance from each other.

d **Mute or Squelch Setting** - Mute (or squelch) controls are designed to cut out the background noise from receivers to reduce operator fatigue. This setting may vary from location to location and should be checked. The correct position is that which just quietens the background noise. Increasing the control beyond this point will cause the sensitivity of the receiver to be reduced to the point where weak signals are not heard. Some radios have pre-set mutes.

e. **Hand-Held Radios**

(1) Care should be taken that antennas are fully extended, held vertically and are not touching any other object.

(2) Batteries should always be in good condition.

f. **Jargon.** Avoid the use of any jargon terms when using a radio network. They may not be understood by the operators at the other end.

g. **Remember R.S.V.P.**

(1) Rhythm - Speech has a natural rhythm. Maintaining this will make your message more understandable.

(2) Speed - Speak a little slower than normal. If the receiving operator is required to write down a message, allow time to do so.

(3) Volume - Speak a little louder than normal.

(4) Pitch - Higher pitched voices tend to be more understandable.

8.20 Messages should occupy the minimum amount of air-time, consistent with clarity. Use more air-time if required to ensure the message is received correctly initially, rather than having to repeat it.

OTHER METHODS OF COMMUNICATION

8.21 Other methods of communicating, which can be used but require some degree of planning are:

a. **Control of Contact or Close Search** - Whistles, loud hailers, simple voice orders. (To contact both single and multiple teams).

b. **Location of Search Teams or Finds** - Smoke, light (fire), signalling mirrors.

c. **Recall Signals** - Whistles, sirens, gun shots, pyrotechnic rockets.

d. **General Public** - Commercial radio stations for supplying information and instructions to the public

e. **Mobile Communications** - For relay points.

f. **Field Signals** - Searchers may be required to use field hand signals or audible sounds to communicate within or between teams. Recognised audible signals are.

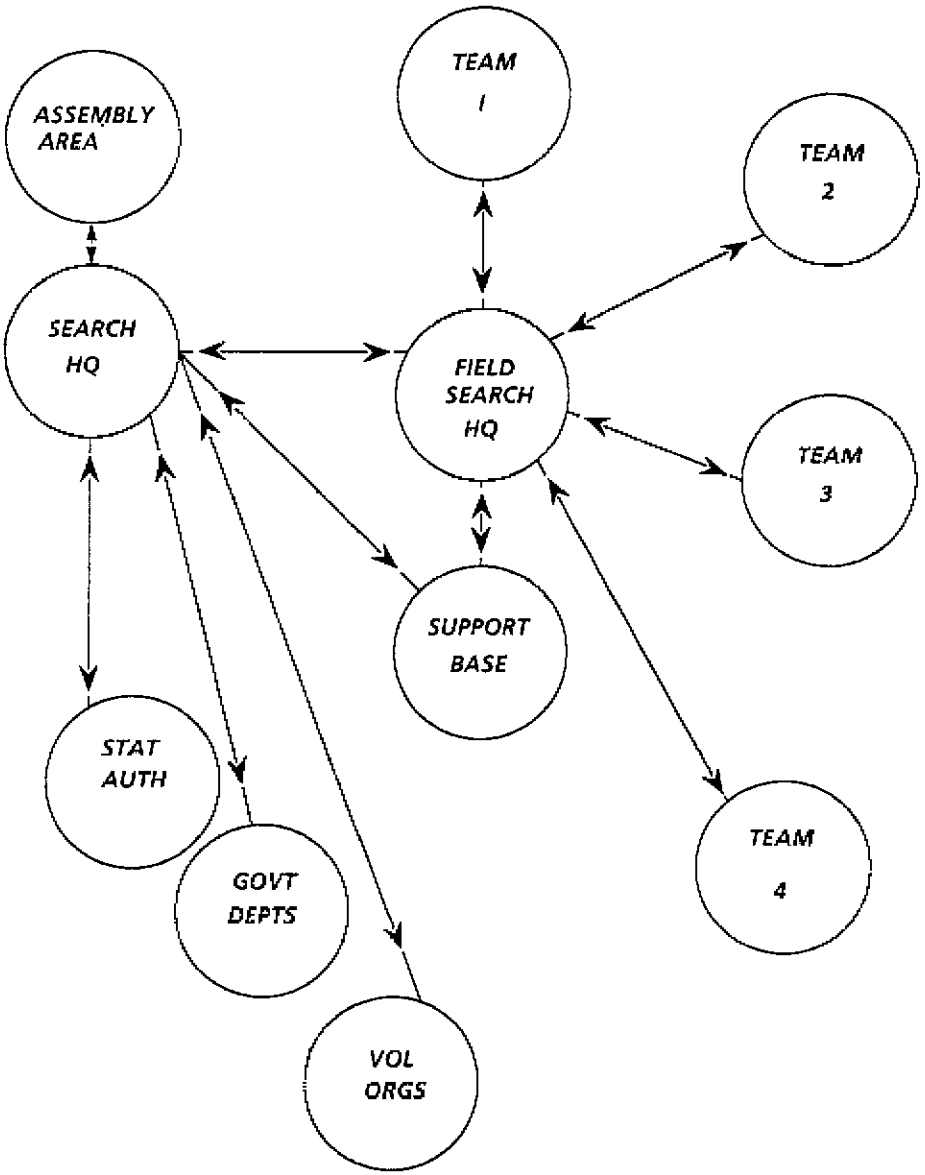
(1) one short blast at irregular intervals - searchers looking for a missing person and as an acknowledgment of a distress signal,

(2) three short blasts together, regularly spaced - distress signal; and

(3) four short blasts together, regularly spaced - which is recall signal.

Short blasts are regarded as sounds audible for one second. Where organisations use audible signals for other purposes, three blasts must be avoided.

SEARCH COMMUNICATIONS NET



CHAPTER NINE

SEARCH TECHNIQUES

GENERAL

9.01 Although specific search plans will vary with the circumstances, a general strategy has evolved which can apply to most situations. Stages of searching may be divided into:

a. reconnaissance stage;

b. general search stage; and

c. contact search stage.

9.02 It is emphasised that although a search will usually progress through the stages in the order listed, it may commence or end with any of them and the techniques mentioned may need to be modified to meet local conditions.

SEARCH AREA SEGMENTATION

9.03 It is essential that the overall search is divided into search task areas according to the number of teams available and the nature of the terrain. These task areas should be kept reasonably small for efficient coverage by one team in a reasonable time. If the segmentation of the search area results in more task areas than teams available, it is usually better to allocate an order of priority, rather than enlarge the task areas. The boundary of task areas must be clearly defined, wherever possible using easily identified man-made or natural features.

9.04 A major problem common to search operations is the division of the area of operations into easily identifiable blocks. What may seem simple on a map may be extremely difficult to comprehend on the ground.

USE OF BOUNDARIES

9.05 Boundaries should be readily identifiable features, that may be employed to contain search teams within a specific area:

a. natural boundaries may include rivers, creeks, ridges, gullies, re-entrants, spurs, tree and grass lines, and shorelines, and

b. artificial boundaries may include roads, tracks, power lines, water pipelines, fences, irrigation canals, railway lines or any other feature that may act as a check point or marker to assist in identification or containment of the area.

RECONNAISSANCE STAGE

9.06 The main reason for the reconnaissance is to carry out a quick check of specific areas of probability, and also to obtain essential information about the search area, both of which will have a bearing on the future search plan. Reconnaissance teams may also find the

missing person or object. A reconnaissance search can be conducted using ground teams, vehicles or aircraft. A reconnaissance can be used, not only early in the search, but at any time to check on unconfirmed sightings or to re-check specific areas of probability.

9.07 **CONTAINMENT**

As a first step in any search, containment of the missing person should be effected by cordoning the area where possible.

9.08 **COMPOSITION OF RECONNAISSANCE TEAMS**

Since they must travel light and fast, these teams should be kept small; ideally four to six persons. It is desirable that the leader or at least one member of the team have a good knowledge of the task area and that all members are fit and capable

9.09 **TASK OF RECONNAISSANCE TEAMS**

The area to be covered by these teams will probably be concentrated on the area of possibility, that is the maximum distance, in any direction the missing person could have travelled in the time elapsed since the last definite sighting This area may be further limited by the existence of natural barriers such as large rivers, cliffs, etc.

9.10 Orders given to the reconnaissance team may include the following:

a. Check of all hazards which may have trapped or caused injury to the missing person such as, waterfalls, cliffs, and caves

b. Check tracks, huts, routes, sand-bars, waterways, waterholes, waterfalls and other likely areas for clues such as footprints, discarded items of clothing and equipment, food scraps or wrappings.

c. Interview any person found in the search area and brief them on the situation. Record their names, addresses, car registrations and other details.

d. Do not disturb any clues found. Clearly mark off and record time and name of member who found them

9.11 **INFORMATIVE BRIEFING**

The Reconnaissance Team must be supplied with as much relevant information as possible about the missing person Details of clothing, footwear, equipment or items carried, all of which if discarded by the person, could provide vital clues. So often the importance of clues is realised only long after they have been dismissed as irrelevant.

9.12 **INFORMATION REQUIRED**

As quick results are required, any information regarding clues and indications must be sent back to Field Search Headquarters by the quickest means possible It is also important that a 'no trace report' be made

GENERAL SEARCH STAGE

9.13 When as a result of reconnaissance and or definite information received, the Field Search Controller is able to define the area of probability, a decision may be made to cover the area with a general search. This is a general, rapid search of the overall search area and may be used·

c To gain approval, position yourself in view of the pilot and clear of the rotor, indicate with a thumbs up signal held to the side of the body, and await a return thumbs up signal from the pilot.

d When approaching or departing the aircraft with rotors turning, be conscious of the rotors' downwash and secure articles such as caps, hats, or other light items so they will not be sucked up into the rotor system or blown away

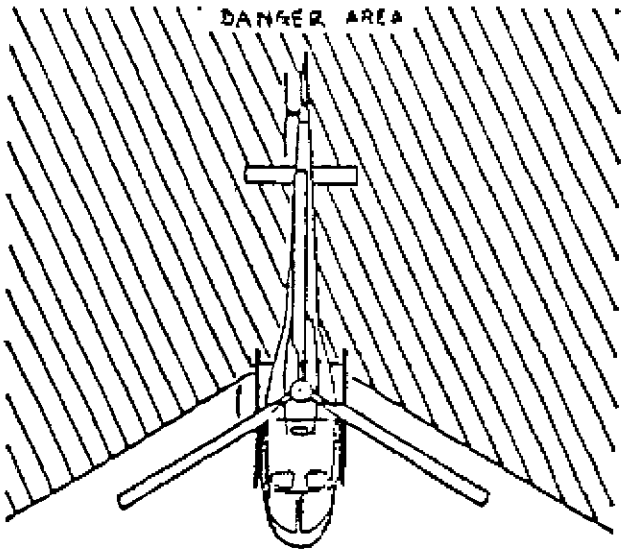
e. Under no circumstances are persons to approach from or depart to the rear of the aircraft or pass behind it in the vicinity of the tail rotor.

f Where the helicopter has landed on sloping ground, the hazard of approaching or departing up or down the slope, into or away from the helicopter, must be fully understood (refer Figure 10.2).

g. Keep long objects, poles, rods, radio antennas etc. parallel to the ground while beneath the rotor arc of the helicopter (refer Figure 10.3).

h. Observe the path of the rotor and keep well clear of it. In gusty conditions, the main rotor blades will flap closer to the ground as they slow down. If the helicopter is being shut down, be particularly careful until the rotor blades have completely stopped turning (Refer Figure 10.4).

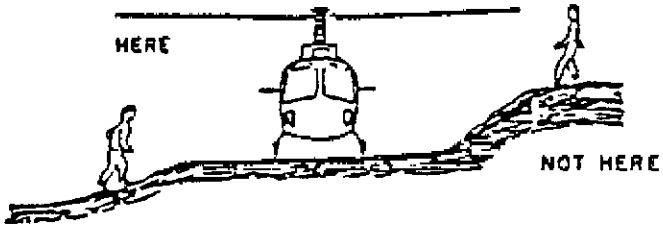
APPROACHING AND DEPARTING THE HELICOPTER SAFELY



APPROACH AND DEPART ONLY FROM THIS AREA

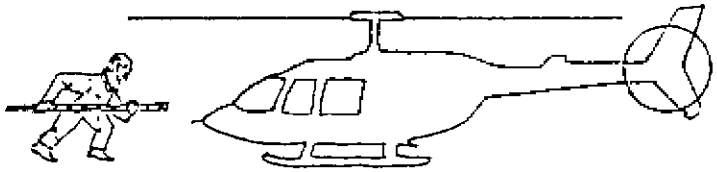
Figure 10:1

ON SLOPING GROUND, APPROACH AND DEPART ON THE LOW SIDE.



GET PILOT'S PERMISSION TO APPROACH WHILE ENGINE IS RUNNING.

Figure 10:2



gure 10:3

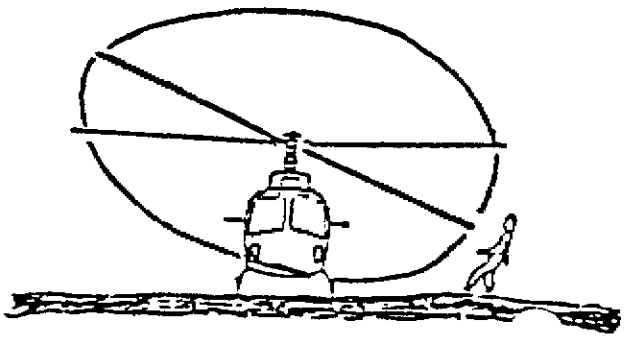


Figure 10:4

a. early in a search operation, especially if the missing person has a known medical problem, concern for survival, children or any other reason which suggest a high degree of urgency; and

b. in those situations where the search area is large, to reduce the area of probability.

9.14 COMPOSITION OF TEAMS FOR GENERAL SEARCH

Teams should be kept small (4 to 6 persons) and as far as possible comprise of persons of equal fitness. Larger teams can be utilised depending on the terrain.

9.15 GENERAL SEARCH METHOD

Having determined search task areas, the method of searching a particular area must then be decided. The term 'general search' implies not an examination of every square metre, but rather a check for signs or indications of the missing person

9.16 A check of such places as camp-sites, sheltered areas such as hollow logs or caves, may produce results. A special check of any natural hazards or areas where the missing person could be trapped or injured, should be made.

9.17 For areas of greater probability than others, a modified form of general search may be employed using the same strength in the teams, but designating smaller task areas, resulting in a closer coverage of the areas involved. As in reconnaissance searching, contact within the team is maintained by voice, interspersed with listening periods.

CONTACT SEARCH STAGE

9.18 The contact or line search is usually the concluding stage of a search operation but it can be utilised earlier to saturate an area of high probability. Theoretically, a contact search involves searches moving in a straight line through the area, interspersed so as to be able to see their neighbours' feet. The spacing will depend on the density of the vegetation and is based on the premise that if a searcher is able to see the neighbouring searchers' feet, all ground between the searchers can be visually inspected When searching for small objects, team members may be shoulder to shoulder to ensure complete coverage of the area.

9.19 COMPOSITION OF TEAMS

There is a practical limit on the size of a contact search team under the control of a single leader. This varies with conditions, but is normally 8 to 12 persons. The most experienced searchers should be at the ends and in the centre of the search line

9.20 TASKS OF CONTACT SEARCH TEAM

The contact search team must search every possible refuge, since a missing person suffering in the bush is unlikely to remain in the open but will rather seek refuge in a sheltered place, out of the wind, wet or extreme heat. These will include gullies, hollow logs, amongst large rocks and under small ground scrub. All must be searched.

9.21 CONTACT SEARCH METHOD

Contact search means that each member of the team is in visual contact with the adjacent person. It is used when a relatively small area of high probability has eventually been defined or alternatively to search for further clues in an area where the missing person was known to have been. Contact search technique may also be used in the initial stage when the area of probability is small, eg. a child missing in a pine plantation.

9.22 SPECIAL CONSIDERATIONS

Searchers must look on both sides of obstacles and must continually look back as it is possible to completely by-pass an unconscious person lying behind an obstacle. A high degree of concentration is required in contact searches, so the leader should ensure that the searchers do not talk excessively or let their concentration lapse.

9.23 The contact search line must be kept straight. This is very difficult because different sections of the line will encounter varying obstacles, eg. thick scrub. Some control must operate to ensure that faster searchers in clearer areas slow down and wait for those encountering difficulties. The best method is for the Team Leader to be positioned in the centre of the search line, preferably to the rear and call instructions to the flanks. An area can be covered more effectively by a series of short sweeps, rather than a single long sweep.

9.24 Spacing of the line is maintained from whichever flank is following the boundary or otherwise defined track. The other flank indicates their progress by using markers. It can be an advantage to use different coloured markers on each day of the search. At the end of each sweep, the markers becomes the guide for the next sweep. When placing markers on trees, they should be placed in such a manner that they can be easily seen when returning in the opposite direction.

9.25 The contact search is continued sweep by sweep until the area is covered. This method is exhausting, time consuming and requires large numbers of searchers for all but the smallest areas. It is important that search teams, operating in the same area, maintain contact to ensure that mutual boundaries are properly searched.

NIGHT SEARCHING

9.26 Before deciding to search at night, the Field Search Controller will need to weigh the possibility of success against the risk to search team members. Night searching is not a task for inexperienced searchers. Some advantages and disadvantages are listed below:

a. **Advantages of Night Searching:**

(1) Tracks and signs show up much better at night when illuminated by a flashlight. The flashlight forces the searcher to concentrate on the small field of view given by the light beam. This concentration assists with the detection of small clues.

(2) Footprints and tracks are better preserved at night because they do not dry out as quickly and therefore maintain their shape and identity.

(3) In hot weather, night travel is much less strenuous than day-time travel

(4) The human voice carries further at night.

b. **Disadvantages of Night Searching:**

(1) Possible risk to searchers

(2) The missing persons may be injured whilst attempting to move to, or away from searchers heard in the dark.

(3) Possible accidental destruction of vital clues

(4) Missing vital clues.

(5) Use of light destroys searcher's night vision.

(6) Natural fear of the dark may cause greater apprehension in the missing persons and searchers

(7) Greater control problems for searchers.

ACTION ON LOCATING THE MISSING PERSON(S)

9.27 Prior to deployment of search teams, the action to be taken in the event of a team locating the person must be defined and clearly understood by all searchers. There will be a need to specify the action to be taken if the person is found and believed to be dead. This action will be determined by Police and will be issued in the Field Search Controller's orders.

9.28 A code word, to be employed in the event that the person is found and believed to be dead, should be given. This will notify the Field Search Headquarters immediately of the situation and should be followed by the location of the team. The suggested action to be taken where a person is found and believed to be dead is as follows:

a. The searcher locating the missing person immediately inform the Team Leader who will make an assessment.

b. In the event that the person is believed to be dead, the Team Leader will ensure minimal disturbance of the immediate scene by instructing all members of the team to remain clear of that person, to a distance of approximately 30 metres. If possible the area should be marked off with tape or rope.

c. The only people to approach the body should be the finder and the Team Leader who should ensure they do not disturb the scene any more than is absolutely necessary.

d. As soon as practicable, the Field Search Headquarters should be informed using the code word and arrangements made for Police to attend.

e. The team maintains the security of the site until relieved.

9.29 It must be remembered that information to be transmitted through the radio net may be heard by many people including the media, relatives and friends of the missing person. Some of these persons may already be in a distressed state and will be sensitive to any thoughtless comments on the condition of the person. Therefore, it is important that all searchers use the designated code word and think before passing their assessment on any person's condition through the radio net.

9.30 It is worth considering the use of a code word in the event that the person is found and is seriously injured.

SEARCH TEAM FORMATIONS

9.31 In order to achieve the greatest efficiency from the search teams, it is necessary that each team be deployed to ensure that maximum terrain is covered in a sweep and all members are actively employed.

9.32 This particularly applies where the team members are tired and may tend to follow the leader without attempting to search.

9.33 The leader must determine the formation that best suits the terrain, the task and the composition of the team.

9.34 The leader should place individual members in their formation position and allocate primary areas of search to each member.

9.35 While on the move, the leader must ensure members maintain their position within the formation and remain alert.

9.36 Common search formations which may be used to suit varying terrain and circumstances include:

a. **Indian File:**

(1) This formation may be adopted when searching a foot track or narrow defile.

(2) The team travels along the track, one behind the other, searching the track and its immediate surrounds, paying particular attention to the member's primary arc of search.

(3) The leader is positioned where best control of the team can be effected, usually towards the middle of the team.

INDIAN FILE SEARCH FORMATION

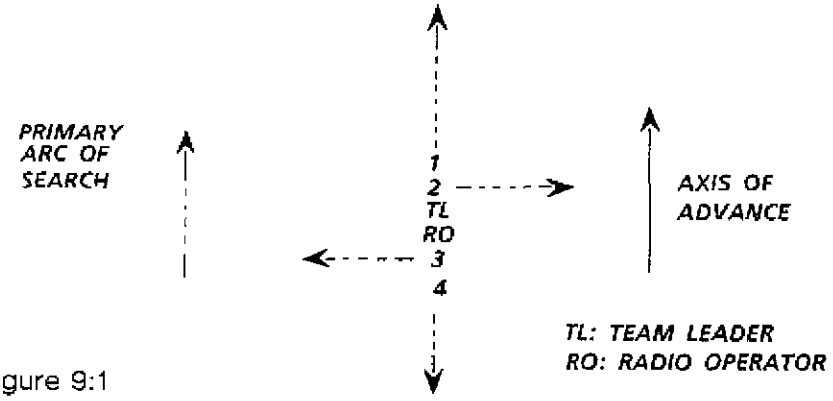


Figure 9:1

b **Track Sweep:**

(1) Where terrain and vegetation permit, a more efficient formation for searching a track may be a track sweep.

(2) In this formation, the leader is positioned on the track, the teams form a line extending either side of the track and searches the ground out to the full span of the team.

TRACK SWEEP SEARCH FORMATION

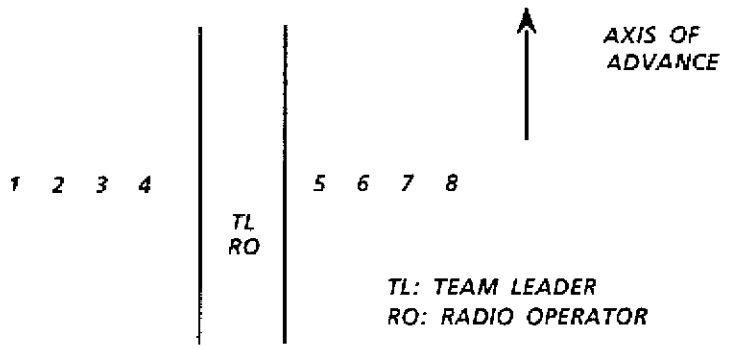


Figure 9:2

c. **Square:**

(1) When searching on a restricted front such as a gorge, the square formation may be adopted. This will gain the maximum advantage from a team which cannot be extended to a full span.

(2) In this formation, the leader is positioned to best advantage usually in the middle of the team. The members are placed in pairs to the front and rear sides of the leader's position.

SQUARE SEARCH FORMATION

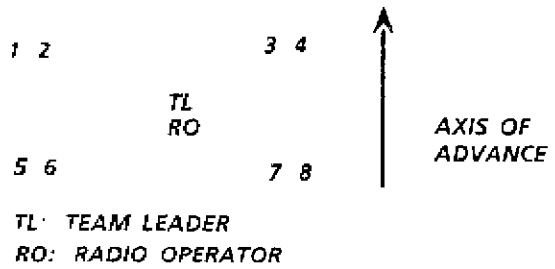


Figure 9:3

d. **Parallel Sweep:**

(1) Parallel sweep searches are used when terrain and vegetation allow adequate control. This formation is normally used in contact searches when thorough

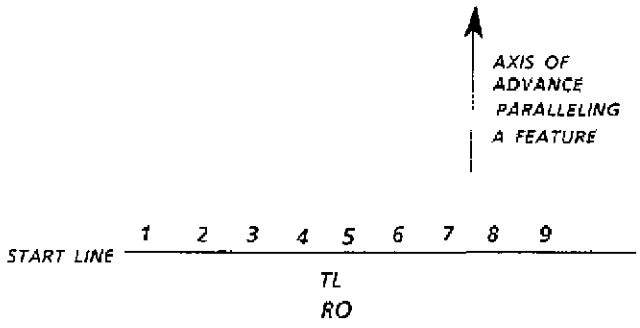
coverage of the ground is required.

(2) Used where, the area to be searched can be covered in a single sweep.

(3) The simplest method of conducting a search is generally by the parallel sweep where a team will move through the search area paralleling a feature, such as a fence or road, or moving on a determined compass bearing.

(4) In this formation, the members are positioned parallel to a start line with the leader located towards the middle and to the rear of the team. Under the direction of the leader, the team sweeps forward from the start line until the area has been completely searched.

PARALLEL SWEEP SEARCH FORMATION



TL: TEAM LEADER
RO: RADIO OPERATOR

Figure 9·4

(5) Where a large open area is to be searched, it is possible to use multiple teams in an extended line, eg. pine plantations, open paddocks, or low scrub. An alternative is to stagger the teams, provided that dead ground between them is thoroughly searched.

(6) When using a number of teams searching the same area, it is possible to conduct a parallel sweep using all of the teams in a single line. This however, is hard to control.

(7) To achieve this, the teams are lined up in an extended line with the team leaders to the rear of the teams

(8) A search line leader is positioned behind the entire formation

(9) The search line leader controls the movement of the teams as a single unit acting through individual Team Leaders.

(10) To assist in control, the search line leader will generally need to have available a radio operator to transmit instructions directly to the Team Leaders.

(11) The search line leader's radio should be on a separate frequency to the search control net.

(b) set up a line from one of the outside corners of the grid and move around the grid in one direction;

(c) continue searching in this manner, spiralling out and around the grid square (it will gradually become circular);

(d) the line will become unmanageable with more than 15 searchers; and

(e) in very thick bush, an expanding square search will take about 3 hours to search an area 300 x 300 metres.

EXPANDING SQUARE SEARCH FORMATION

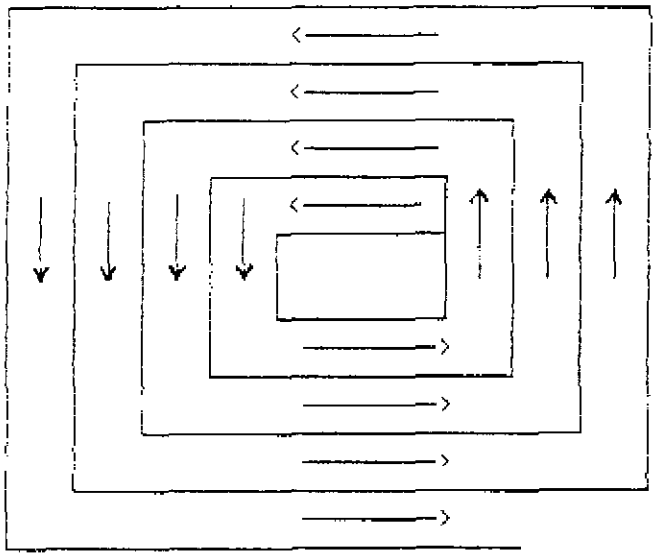


Figure 9:8

VEHICLE SEARCH FORMATIONS

9.37 The formations discussed so far are suitable for searchers on foot or horseback and may be adapted for use with vehicles.

9.38 A problem with vehicles travelling in formation may be loss of visibility, owing to dust. This will be particularly prevalent in dry or arid conditions.

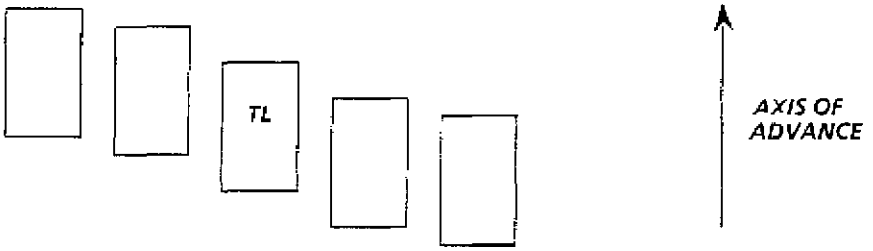
9.39 When driving vehicles in dusty conditions, it will be necessary for following vehicles to travel outside the dust cloud of preceding vehicles.

9.40 The most suitable formation under these conditions will be to echelon to the right or left of the leading vehicle.

9.41 The vehicles need to maintain a position just slightly in front of the dust cloud so as to have adequate vision and adjust their position to suit the circumstances.

9.42 If this method is adopted, the likelihood of vehicles colliding, striking obstacles or ditches, or becoming bogged is reduced.

VEHICLES IN ECHELON



TL: TEAM LEADER

Figure 9:9

CONCLUSION

9.43 The Team Leader is responsible for ensuring the team is employed to best effect, so the formation adopted must suit the circumstances.

9.44 The leader should ensure that dead ground does not go unchecked, and that the entire area is searched.

9.45 The leader should check team members at frequent intervals to ensure their safety and physical condition.

9.46 When vehicle extrication of the missing person or team is contemplated, it is advisable for a team member to move to the road, track or identified rendezvous to:

a. await the arrival of the vehicle; and

b. then guide the vehicle to the site.

9.47 When conducting a search, it is desirable to navigate by identifiable features rather than committing teams to navigate by compass.

9.48 In areas where map and compass must be used, ensure that there are members within the team who are competent in their use.

PARALLEL SWEEP SEARCH FORMATION
(MULTIPLE TEAMS)

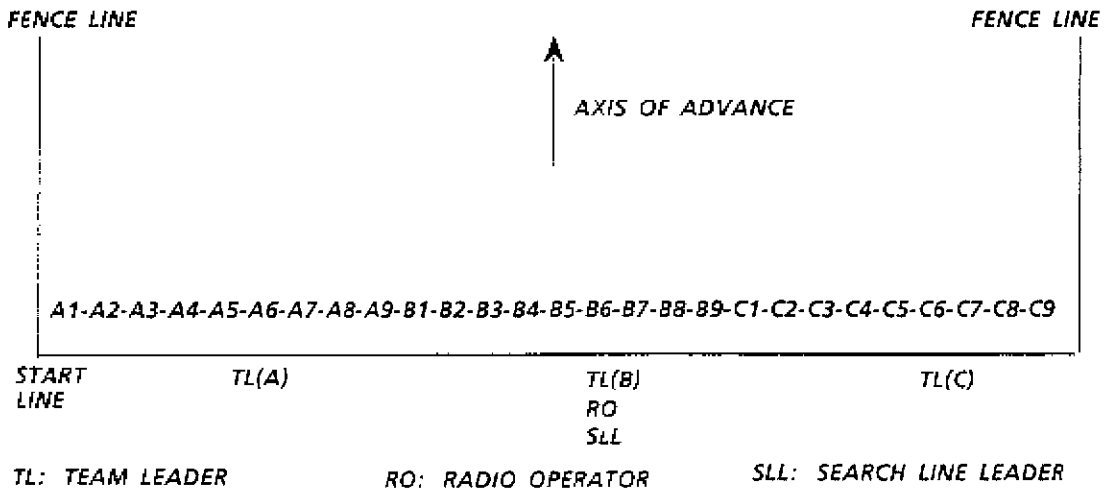


Figure 9:5

e. **Creeping Line Ahead:**

(1) Where team strength does not permit the searching of an area in a single sweep, the area may be searched in a series of sweeps known as the creeping line ahead search formation.

(2) This method is particularly applicable in thick vegetation or rough terrain where control problems may preclude the use or employment of large teams

(3) To conduct this search, a start line and search boundaries are determined.

(4) The team is placed in a parallel line along one of the boundaries.

(5) The leader is positioned toward the middle and behind the team.

(6) The team members on the flanks are tasked with marking the limits of their search.

(7) In order to mark the limits of search, the member may use surveyors tape or a similar material tied to trees at a visible distance between marks.

(8) An alternative to surveyors tape is toilet paper, which is biodegradable, non-polluting and has a limited life span. Different colours may be used to identify areas searched on different days.

(9) The team member acting as the marker will not be able to concentrate entirely on searching because of the distraction of tying the material to the tree. This needs to be allowed for in relation to the area covered and to the speed of advance.

(10) Before beginning, a number of strips of toilet paper or tape can be prepared, assisting the marker in carrying out the task.

(11) The team searches the area from boundary to boundary in a series of sweeps, moving back and forth from the start line until the area has been searched.

(12) When redeploying for a return sweep, it is essential that the team leader maintains control and ensures that the changeover is conducted as smoothly as possible.

(13) To ensure a smooth change, there are two suggested methods:

Method One·

(a) The team on reaching the boundary halts and the member at the axis of advance (end of the line) marks the limit of search.

(b) The team then turns in the direction required and moves one team span past the marked limit thus maintaining their original position within the search line.

(c) The team then sweeps towards the opposite boundary

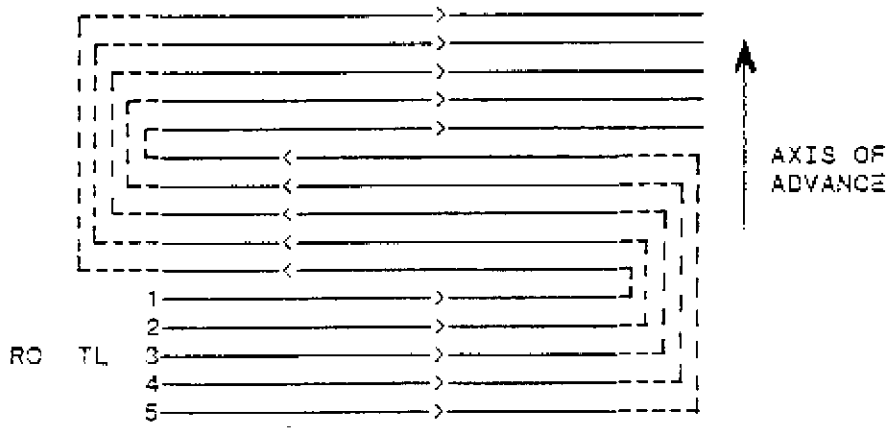
Method Two:

(a) On reaching the boundary marking the limit of search and turning in the direction of the axis of advance.

(b) The member at the axis maintains position, the remainder of the team by-passes and forms up after one team span

(c) The team then sweeps towards the opposite boundary.

CREEPING LINE AHEAD SEARCH FORMATION
(METHOD TWO)



TL: TEAM LEADER
RO: RADIO OPERATOR

Figure 9.6

Contour:

(1) When searching hills, ridges or spurs, it is advisable to commence searching from the high ground.

(2) This allows searchers to observe the ground from height, rather than attempting to look up a slope, increasing the searcher's vision.

(3) When searching a hill, the team forms up in the selected formation and searches the hill from top to bottom, spiralling the hill, thus avoiding traversing steep slopes.

(4) In order to search a ridge or spur, the feature should be searched in a series of shallow, overlapping sweeps.

(5) In any search of hilly or steep ground, control must be maintained and speed of advance adjusted to suit the terrain and the capacity of the searchers. If this is not done, injuries, particularly to ankles and knees, may occur.

CONTOUR SEARCH METHOD

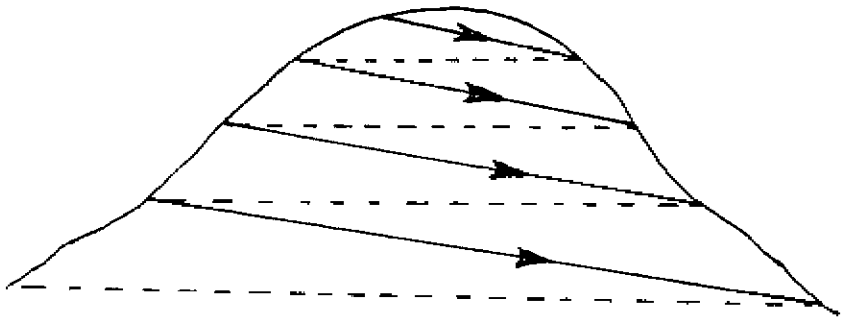


Figure 9.7A

RIDGE SEARCH METHOD

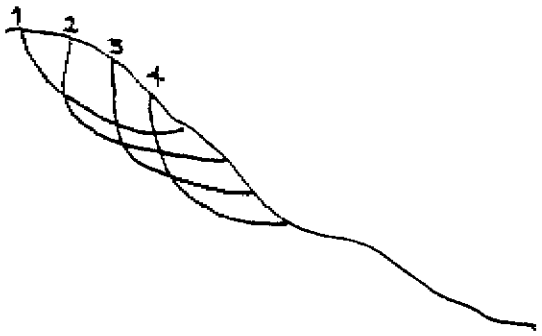


Figure 9·7B

g. **Expanding Square·**

(1) The purpose of this technique is to closely search an area of high probability. It is particularly useful for thorough coverage of small areas. This technique is suitable for a maximum of 15 searchers.

(2) A person is required to mark the outer boundary and ensure that the correct boundary is being followed.

(3) Another person is required to locate the inner boundary. This ensures an even movement of the search line from the inside edge.

(4) It is essential that the Team Leader directs the search from a central position behind the line.

(5) Method: Mark out a grid square of approximately 50 metres centred around the area where close searching is required by using compass bearings and surveyors tape or similar. Next;

(a) search the inside of the grid with a contact search;

CHAPTER TEN

RESOURCES

INTRODUCTION

10.01 Resources must be assessed in terms of capability, availability and durability. Such resources fall into two main categories:

a. personnel; and

b. specialist resources.

PERSONNEL

10.02 Personnel fall into two categories, trained and untrained. Trained searchers must be proficient and effective in skills such as;

a. leadership;

b. working as team members;

c. use of map and compass, bushcraft, communications, first-aid, skiing, etc; and

d. have an understanding of the organisational functions supporting the operation.

10.03 It is preferable to use trained teams who are experienced in working together. This however, is not always possible. If untrained searchers are to be used, they must be under the control of a trained and experienced leader. People with specialist skills should be utilized within their area of expertise.

10.04 The tasks allocated to teams need to be within the capacity of those teams. This includes their area of search, terrain, conditions and functions.

SPECIALIST RESOURCES

10.05 Specialist resources available to each area will be many and varied, each having a special function. Therefore, each should be employed accordingly. Such resources include:

a. aircraft;

b. vehicles;

c. horses;

d. dogs;

e. human trackers; and

f. boats.

AIRCRAFT

10.06 There are aircraft available to suit specific circumstances. Provided weather prevailing in the area is suitable, aircraft can cover an area quickly and economically, thus relieving the problem initially of utilizing ground teams. Aircraft are particularly useful in the reconnaissance stage.

10.07 FIXED WING AIRCRAFT

a. This should preferably be of high-wing monoplane construction, with a slow stalling speed, slow economical fuel usage and an air dropping capability. This will allow good visibility from the aircraft and a viable time period over the search area.

b. Refuelling points should be as close to the search area as possible.

c. Observers should be experienced and rotated regularly.

d. In protracted flying operations, consideration must be given to the limitations of flying hours for the pilot(s).

10.08 ROTARY WING AIRCRAFT

a. These have the capacity to hover over and land in remote locations.

b. This type of aircraft makes a good observation platform.

c. Fuel usage may be a problem when using rotary wing aircraft. Fuel may be brought to the search area, and aircraft refuelled on site.

d. Rotary-wing aircraft may function in a secondary role in the transportation of stores and personnel.

e. If the aircraft is fitted with a hoist (winch), placement or extrication of individuals may be accomplished without landing. In protracted flying operations, consideration must be given to the limitation of flying hours for the pilot(s).

AIRCRAFT SAFETY

10.09 All aircraft are potentially dangerous, so approach only on indication from the pilot that it is safe to do so. Be aware of rotors propellers.

10.10 Because of their mode of operation helicopters present specific safety problems.

a. Wherever possible, passengers are to be loaded or unloaded with the rotors stopped.

b. When stopping the rotor is impractical, passengers shall approach or depart the aircraft within an arc of 60 degrees either side of the nose centre line (refer Figure 10:1) remaining in full view of the pilot and only with the pilot's approval.

10.11 HELICOPTER LOADING

To ensure minimum turn-round time and maximum use of the aircraft:

a. ensure all stores or personnel are in position prior to the aircraft landing;

b. brief personnel on the relevant safety aspects and check individuals for hats, caps, other loose items;

c. if stores are bulky or heavy, have a work party on hand to load the stores. Brief these personnel on the relevant safety factors; and

d. employ a system of loading and unloading which ensures that what is needed first is loaded last.

10.12 Only those directly involved in the helicopter operation should be in the immediate vicinity of the aircraft. All other persons should be kept away.

10.13 It is good practice to ensure that the immediate area surrounding the helicopter is properly secured.

10.14 The downdraft created by the aircraft rotor will propel dirt, small stones, grass, leaf particles and other items with great velocity and may cause severe or permanent eye damage. This is especially noticeable during landing and lift off.

10.15 Persons operating around the immediate vicinity of the aircraft should be equipped with protective goggles. All other persons should turn away from the aircraft and cover their eyes with a hand or hat to minimise any possibility of eye injury. Ear protection should also be considered.

HELICOPTER LANDING ZONES REQUIREMENTS

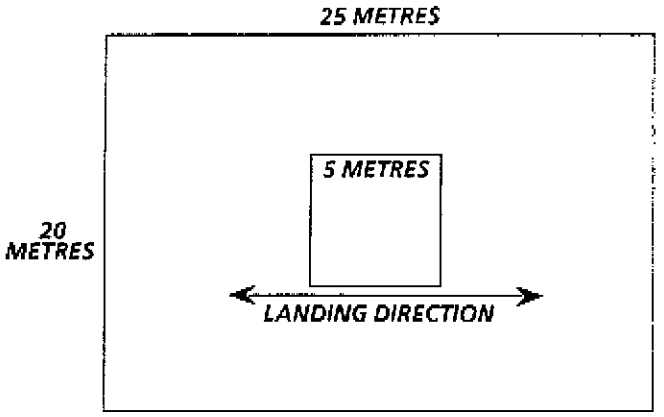


Figure 10:5

10.16 The dimensions illustrated will accommodate most general utility helicopters and all small helicopters.

10.17 The area indicated as 5 metres square needs to be cleared to ground level.

10.18 The area of approximately of 20 x 25 metres should be cleared to a height of 0.5 metre, with a corresponding clearing out to whatever distance is deemed necessary by observation or instruction by the pilot.

10.19 Approaches need to be clear of all high tension wires, telephone wires, and preferably fence wires.

10.20 The angle of approach and departure should have an elevation of approximately 40 degrees. (Refer Figure 10.6).

10.21 All grass cuttings, branches and logs should be removed well away from the immediate landing zone.

10.22 When the aircraft is functioning in an operational environment, the maximum slope of ground deemed safe is a gradient of 1:8.

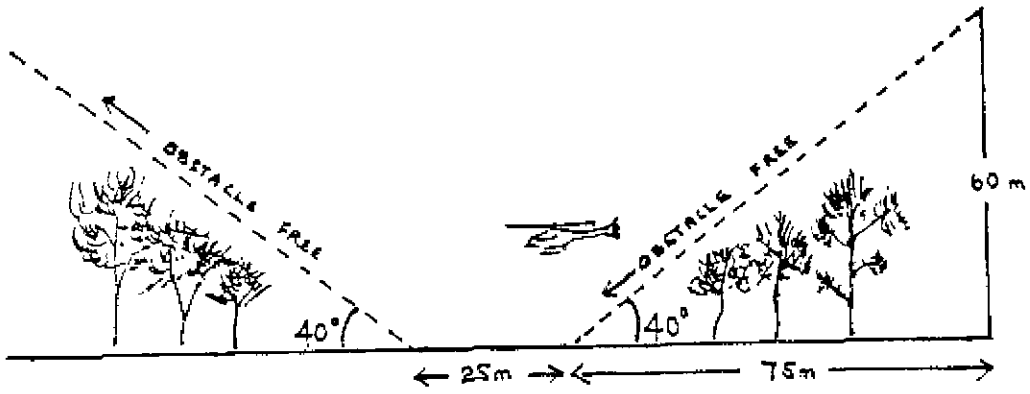


Figure 10·6

ALLOCATION OF AERIAL SEARCH AREAS

10.23 Aircrews should be allocated specific areas of search with regard to the type and operation method of the particular aircraft concerned. This will ensure the area is covered fully

10.24 The pattern of search should be left to the aircrews discretion, after initial briefing and discussion regarding the situation, terrain in the area and any other limiting factors.

10.25 Thick cover will restrict to some extent or, in some circumstances, prevent visibility entirely. However, overflights may still gain vital information and may attract the attention of the missing persons, and they may be able to move to an area of visibility and attract the attention of the aircraft by whatever means available.

ALL-TERRAIN VEHICLES

10.26 A wide variety of all-terrain vehicles are available which may prove useful in a search operation. They could include:

a. motor cycles;

b. mountain bicycles;

c. four-wheel drive vehicles;

d. tracked vehicles:

e. oversnow mobiles; and

f. hovercraft.

10.27 The use of vehicles in search operations follows the same principles as searches on foot in that:

a. visual contact must be maintained between vehicles;

b. all ground between searching vehicles must be seen, and

c. the vehicle team is usually controlled from the centre.

10.28 Considerations for the use of vehicles are:

a. speed of search:

b. the added advantage of height which allows an observer to look down on the terrain;

c. the noise of vehicles may attract attention of the missing person but conversely may drown out calls for help;

d by placing an observer in the rear of a vehicle, a different perspective of the terrain can be searched;

e. vehicle searches are not as detailed and small items may be missed;

f because the driver is concentrating on driving, each vehicle should have a number of observers each searching a given arc, which requires additional personnel; and

g. vehicles require considerable logistic support

10.29 From these considerations, it is obvious that vehicle searches are useful for general searches in open country. They are not suitable for detailed searches or operations in close or heavily vegetated terrain except for transport, reconnaissance and perimeter searches over open ground or formed tracks

MOTOR CYCLES

10.30 An off-road cycle is a robust, flexible piece of machinery. This vehicle can traverse a wide variety of terrain. The rider must be fully self-sufficient in terms of clothing and equipment appropriate for the prevailing conditions, rations and water, first-aid kit, repair kit, fuel, oil and spare parts. Competent riders can travel at a walking pace or cover ground quickly depending on the situation.

10.31 METHOD OF OPERATION

Ideally, bikes should travel in pairs, with one rider equipped with a radio. However, up to 5 or 6 bikes are functional, depending on the terrain.

10.32 Even with the motor at idle, there is no guarantee calling may be heard, especially if shouts are feeble, or at a distance. Motor cycles should travel at a slow speed. At regular intervals the rider should stop, turn off the engine, call out and listen.

10.33 LIMITATIONS

The use of motor cycles in search operations imposes certain limitations which must be considered:

a. The overall vision distance of the rider may be reduced when sitting on the machine.

b. Distraction from searching when concentrating on manoeuvring the motor cycle over difficult terrain.

c. Inability to communicate by radio whilst mobile

d. Difficulty with navigation whilst mobile.

10.34 SEARCHING ON MOTOR BIKES

The search area should be contained within fence lines, or roads to act as boundaries.

10.35 An initial reconnaissance of the perimeter may indicate if the ground is suitable to employ motor cycles, or whether the subject may still be within the bounded area. Once it has been determined to search a specific location the motor cycles can then traverse the area in a systematic manner.

SEARCH ON HORSEBACK

10 36 The use of mounted search teams is a most practical method of search. Mounted groups can negotiate most terrain and be self contained for lengthy periods, if required.

10.37 The visual horizon of the rider is almost doubled by sitting on the horse, as is the capacity to look over cover or down into thick cover

10.38 There is the added advantage of almost completely eliminating the noise factors associated with motor bikes.

10.39 The horses and riders employed should be fit and capable of handling the terrain and weather conditions. That way, the horse can make its own way along, and the rider can scan the area fully. This will not be the case with a skittish horse, where the rider will spend most of the time controlling the animal and not seeing much at all.

10.40 CONSIDERATIONS

A yard or holding area will have to be set aside to allow the horses to be unsaddled and rested. Adequate water and drinking facilities need to be available. Quality fodder will also need to be supplied to maintain the fitness of the animals.

10.41 Horseshoes and shoeing material should be on hand. The logistics of the problem may be overcome by getting the riders to bring the requisites with them.

10.42 The employment of mounted search teams has a great deal to offer in those areas where competent riders and suitable mounts are available and the terrain suits their employment. Horses require a large amount of water so this should be taken into account in the planning phase.

10.43 Horse mounted searches are not suitable for searching in detail because the observer is high from the ground and mounting and dismounting to look under bushes, in holes and depressions slows progress.

SEARCHING WITH DOGS

10.44 A well trained dog and handler can be an effective aid to the search, provided that they are used correctly. To obtain the maximum value from dogs, it is essential to have an understanding of the conditions best suited for their employment.

10.45 Dogs, like other animals, are subject to outside influences which have a direct bearing on their behaviour. Therefore, the performance of any dog, no matter how highly trained is not constant and it cannot be expected to work effectively under every type of condition. This is often not fully appreciated and instances have occurred where the use of dogs has been refused, simply because the person responsible for the search was ignorant of the capabilities and limitations of this resource.

10.46 The effectiveness of the dog is directly proportional to the capability of the handler.

10.47 TRACKING CONDITIONS

The ability of a dog to track depends entirely upon its sense of smell. All matter gives off scent to some degree. It consists of minute particles which tend to fall to the ground at varying distances from the source. The combination of all these scents makes up a scent picture which the dog follows.

10.48 Composite scents consist of natural and artificial scent. This picture varies with the individual, depending on race, diet and habits. Added body odour is the scent given off by the wearers clothes, hair oil and toothpaste, equipment, footwear and those released by the brushing and breaking of vegetation and the crushing of small insects.

10.49 The ability of the dog to follow a track depends on the distribution, quantity and age of a scent. It is therefore critical to ensure, where possible, that the search area is not contaminated unnecessarily prior to the arrival of the dog team.

10.50 FACTORS FAVOURING A SUCCESSFUL DOG SEARCH

a. **Time** - This is of prime importance. A fresh scent is easier for a dog to track.

b. **Vegetation** - High undergrowth restricts the dissemination of scent.

c. **Time of Day** - Night and early morning is best as evaporation is less rapid.

d. **Personal Hygiene** - A person, because of circumstances or carelessness, who is unclean gives off a greater amount of body odour.

e. **Food and Equipment** - Obviously strong smelling foodstuffs eaten by the missing person increases the scent picture, eg. curry powder or spicy food.

f **Running** - A person running gives off more scent than a person walking.

g. **Start Point** - Most tracker dogs do not need a piece of clothing belonging to the missing person to enable them to find and follow a scent, but if available, this should be preserved.

h **Weather** - A mild overcast day favours tracking as it limits evaporation of scent.

10.51 FACTORS UNFAVOURABLE FOR TRACKING

The following factors adversely limit the dog's effectiveness:

a. **Temperature** - High (dry) temperature will quickly reduce the scent due to evaporation.

b. **Wind** - A strong wind rapidly disperses the scent

c. **Ground Surface** - Dry, bare ground, adversely affects tracking.

d. **Manure** - Heavily manured land may disguise the scent.

e **Water** - Substantial running water courses can be an obstacle for tracking dogs.

f **Scene Contamination** - Searchers and vehicles will contaminate the area by leaving a fresh scent or lifting the scent with the tyres.

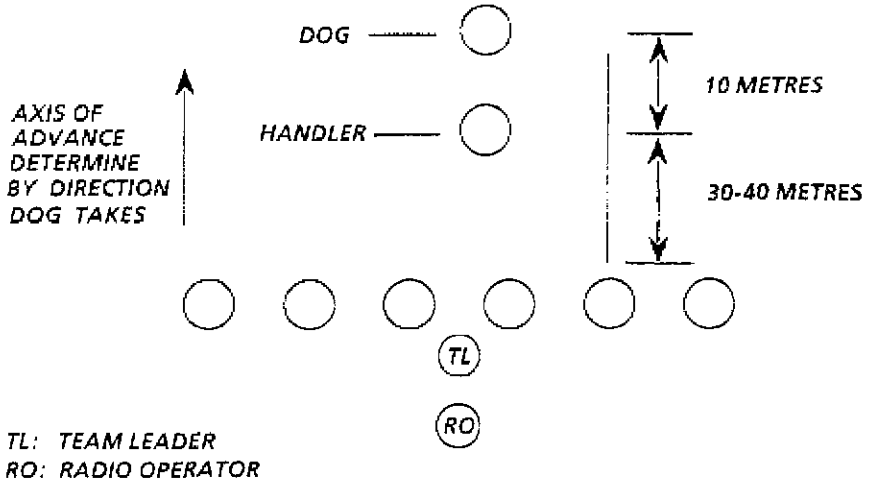


Figure 10:7

e. **Fieldcraft** - The Team Leader must be skilled in living, navigating and operating in the field. This can only be gained through training and experience. In addition to the above-mentioned skills, Team Leaders must be trained in the duties and responsibilities of their role.

RESPONSIBILITIES OF SEARCH TEAM LEADERS

12.19 Apart from the responsibility which the Team Leader has to the team, there are responsibilities to the Field Search Controller. These responsibilities include:

a. Control of the team to ensure that the area allocated has been searched completely and thoroughly. When this is not possible, the Field Search Commander must be advised.

b. Co-ordination of the team efforts with those in adjacent areas to ensure that the search is completed to the adjoining boundary and with any other specialist search group which may be operating in the area such as dogs or horses.

c. Safety of the team. At no time should searchers be placed at unacceptable risk where they may become injured or lost.

DUTIES OF A TEAM LEADER IN SEARCH OPERATIONS

12.20 PRIOR TO SEARCH

On arrival at the Field Search Headquarters, the Team Leader should report to the Field Search Controller and register the team. Registration must include providing a list of names of all the team. The team waits until orders are issued. The deputy team leader should be checking team equipment, obtaining any additional or specialised equipment and ensuring that the team is fed if this is appropriate.

12.21 In preparation for departure, the Team Leader should check that certain tasks have been carried out. A suggested check list of these tasks is to be found at Annex A to this chapter.

DUTIES DURING THE CONDUCT OF THE SEARCH

12.22 Once the search is underway, the Team Leader's duties are to:

a. note all information of value including:

(1) features on the ground which are not marked on maps;

(2) locations of possible helipads;

(3) road conditions and access; and

(4) names of persons encountered;

b. meet all radio schedules,

c. control the rate of advance of the team;

d. control the direction of the team;

e. preserve tracks or signs believed to be made by the missing person;

f. maintain liaison with other teams in adjacent search areas;

g. rest the team at appropriate times and rotate special tasks or heavy loads amongst team members; and

h. notify the Field Search Controller if the person or important clues are found.

DUTIES AT THE COMPLETION OF A SEARCH

12.23 The Team Leader's duties do not cease once the lost person is found or if the team is withdrawn at the completion of a task. There are a number of duties which must be performed relating to the Field Search Controller, the leader's organisation and the team. These duties are:

a. **Duties to Field Search Controller:**

(1) Report on the completed task to the Field Search Controller after a thorough debrief of the team has been conducted.

(2) Where further search tasks are allocated, the Team Leader obtains the necessary information from the Field Search Controller to brief the team.

b **Duties to Team** - On returning to Field Search Headquarters, the Team Leader, must:

(1) check-in all team members and assess their physical condition;

(2) organise food and drink;

(3) check team equipment;

(4) close down the radio; and

(5) hold the team in the assigned area pending further instructions.

Should a further task be assigned, the leader must:

(6) brief the team in accordance with the orders; and

(7) make the necessary preparation to carry out the task.

In the event that no further tasks are assigned, the Team Leader:

(8) advises the team of the return arrangements and timings; and

(9) delegates team tasks for return to the home base;

HUMAN TRACKERS

10.52 The art of tracking a person through bush is fast vanishing, however, it should not be overlooked as a means of finding a missing person. In parts of Australia, there are indigenous people who have maintained this art and there are others who have developed these skills. Many successful searches for missing persons have been attributed to a tracker's skill.

10.53 If a suitable tracker is available, consideration should be given to his or her employment as valuable time can be saved by going directly to the missing person rather than conducting a slow methodical search. This does not mean that if a tracker is available, there is no need for search teams.

10.54 Trackers are not infallible and tracking over rocky ground or through swamp may not be possible. Where the tracker has lost the spoor or cannot proceed, the search team takes over until the missing person or his spoor is relocated. The tracker and the search team can and must work in harmony, but the team must ensure that they do not obliterate the spoor which the tracker is following.

10.55 Trackers use visual tracking techniques, the requirements for which are good eyesight, memory, practical intelligence, fitness and an understanding of nature.

10.56 **AIDS TO TRACKING**

Some of the smaller signs which are used to follow a track are as follows:

a. Footprints - It should be known what type of footwear the missing person is wearing so that there will not be confusion with a track made by search team members.

b. Direction of grass, leaves or sticks, kicked up by the feet will indicate the direction of the missing person

c Unnatural formation of foliage or dead grass, especially spear grass, will indicate that a person has pushed them aside, disturbing the natural appearance of vegetation.

d. Sap exuding from cuts or bruises on protruding roots - The bark is usually very easily broken and some sap may appear.

e. Dry leaf surfaces on the ground after rain, lack of dew on vegetation.

f. Change of colour - This occurs when the foliage has been disturbed and the lighter underside of the leaves is turned up. This colour will contrast sharply against the normal shiny surface. On the ground, the colour pattern of the leaves will be distinguished by the dark shadows cast by turned up leaves, and by the dark undersides contrasting with the brown colour of the other dry leaves.

g. Dirt smudges on rocks, logs and leaves - The missing person's footwear may be damp and dirt will adhere to them smudging and dropping off in fragments, or it may be that mud on boots has dried and fallen off.

h. Broken cobwebs up to human height.

i. Moss scraped from trees.

j. Disturbance of animal or insect life.

k. Disturbance of water where the missing person has climbed out of creeks or stepped into puddles.

RESOURCES ASSOCIATED WITH WATER SEARCHES

10 57 Searchers should pay particular attention to shore lines and banks of rivers and streams in an effort to locate clues (footprints etc.) and avoid contamination of the scene.

10.58 **BOATS**

Where searches are conducted near waterways, such as large dams, lakes or rivers, it may be desirable to use small boats to search along banks and shorelines.

10.59 In very shallow water or in swamp country, it may be more suitable to use canoes

10.60 Teams and equipment may often be transported to and from tasks by boat rather than by vehicle or on foot.

10.61 **UNDERWATER DIVING TEAMS**

In the event of a requirement for an underwater search operation, a qualified diving team approved by the respective Combating Authority, should be called and be informed of the exact nature of the task, conditions, altitude, estimated depth of water and contamination of water (if any).

CONCLUSION

10.62 All the methods discussed have advantages and disadvantages, so investigate what options are available and use the resources to suit the situation Terrain and weather will always have an effect on the choice. Do not use resources purely because they are available.

CHAPTER ELEVEN

SAFETY

GENERAL

11.01 This chapter deals with the prevention of accidents and personal injury. Safety is an essential aspect of every search operation, and as such, all participants have a responsibility. It includes such factors as adequate and appropriate equipment and clothing, proper preparation of team members and skilled leadership.

SKILLED LEADERSHIP

11.02 The Team Leader has the primary responsibility for the sound preparation of the search team, the safe execution of the activity and the safe return to the search base.

EQUIPMENT

11.03 The Team Leader should ensure that all team members are properly equipped. Members should, prior to each search, check their personal gear and team equipment.

OPERATIONAL SAFETY

11.04 The Team Leader must keep firm control of the team, ensuring:

a. a written list of names is carried and frequent checks are made to confirm all are accounted for;

b. members are aware of the search orders;

c. all are aware of field signals;

d members are observant and always maintain contact with their team;

e. not less than four members make up the team;

f. the capabilities and pace of all members is considered; and

g. that appropriate care is taken, having regard to the prevailing conditions.

11.05 In the interest of safety, all team members must obey orders given to them by the leader.

TEAM VEHICLE

11.06 All road laws are to be obeyed and vehicle capability respected. Vehicles and trailers are to be maintained in a roadworthy condition. A visual check should be made prior to departure for an operation.

11.07 The driver is responsible for the safety of the vehicle and its occupants.

11.08 Extra care should be taken in mountainous/bush areas when using narrow tracks, and vehicles must be driven with extreme caution. The vehicle must be appropriate for the conditions.

ACCIDENTS

11.09 In the event of an accident (either on roads or in the bush), it is the leader's responsibility to decide an appropriate course of action. The Team Leader should take into consideration prevailing conditions, team experience, fitness, morale, supplies and communications when making decisions.

TRAINING SAFETY

11.10 It is desirable that all members be trained in essential skills and be physically capable of undertaking the activity.

11.11 Training must include all safety factors. With experience, searchers will develop 'safety sense'. How they train is how they will perform. Breaches of safety must never be tolerated.

11.12 All members have a responsibility for safety. In the event of a dangerous situation developing, all activity must cease until the problem is resolved. Remember, the accident will not always happen to somebody else.

11.13 Personal injury from unsafe practices is a threat to searchers and may jeopardise the operation. Training programs must include lectures and information on correct lifting procedures. Team members are not encouraged to show physical strength but instructed to work in pairs.

11.14 Night search training should be carried out in safe areas, with checks made beforehand as to the extent of hazards in the training area.

CHAPTER TWELVE

SEARCH TRAINING

GENERAL

12.01 Whilst the ability to 'see' in the bush is probably the most important skill for a member of a search team, there are a number of other skills in which the searcher must be trained if they are to operate successfully. In addition, individuals must train together to increase their effectiveness as a team. The Team Leader is responsible for training the team to ensure that they will be capable of searching effectively. Much of this training only comes with regular practise and cannot be gained in one annual search exercise.

INDIVIDUAL SKILLS

12.02 Each search team member must receive training in:

a. map reading and navigation;

b. radio operating procedures;

c basic first aid;

d. fieldcraft: and

e. observation.

12.03 MAP READING AND NAVIGATION

Training is to be in accordance with the Australian Emergency Manual - Map Reading.

12.04 RADIO OPERATING PROCEDURES

Training is to be in accordance with the Australian Emergency Manual - Communications.

12.05 FIRST AID

Adequate training in first aid is available through organisations such as the St. John Ambulance, Red Cross, or other recognised institutions. Searchers should be encouraged to be first aid qualified.

12.06 FIELDCRAFT

Fieldcraft is a broad subject which is difficult to define in its entirety. It is also a series of practical skills which can only be taught in the field and not in a lecture room environment. The aspects of fieldcraft which are important to the searcher are:

a. **Searching Ground by Eye -** This is best practised in a field setting. The Team Leader explains that the particular area is broken into bands of foreground, middle distance and distance. Once the concept is understood, practise is arranged by pre-positioning several items at various distances in a given arc. The team members are then brought to a designated vantage point and attempt to locate all of the objects by eye. This is repeated until proficiency is obtained.

b. **Judging Distance** - In general field work, including searches, there is a need to be able to judge distances for map reading and navigation and for the provision of reports. Judging distance in the field is difficult across dead ground, water and at times of different light conditions, ie dawn and dusk. The skill can only be acquired by practise The Team Leader should train the team in this skill by measuring distances on the ground or from the map from a given vantage point then invite the team to judge the distance by eye and repeat the process until proficiency is obtained.

c. **Basic Tracking** - The ability to track an individual through the bush is not one which comes easily. It requires years of practise and it is unlikely that the average member will ever gain anything but a basic level of proficiency. There are a number of simple tracking techniques which should be known, for example, watching for human tracks which causes a change of colour in the grass and bush when walked through. This skill may be practised by setting tracks and having team members follow them.

d. **Living in the Bush** - Only through practise can this be achieved. The construction of simple shelters, finding water and constructing fires for warmth and cooking should be periodically taught and practised. Hygiene in the field should also be taught.

12.07 **OBSERVATION SKILLS**

The ability to 'see' rather than just look, may need to be taught when operating in the unfamiliar bush environment, and observing changes and noting details are skills which must be developed in most people. To understand why things are seen, it must be explained that several factors are involved which aid this process, they are:

a. **Shape** - regular shapes do not occur in nature.

b. **Shine** - rarely do natural things shine.

c. **Shadow** - unusual shadows will often reveal what may appear to be hidden.

d. **Movement** - immediately attracts the eye.

e. **Colour** - differences to the natural background are obvious to the trained eye.

f. **Spacing** - regular spacing does not occur in nature.

These factors are best demonstrated in a bush environment, and with a better understanding of them, the searcher will become a better observer.

12.08 To enhance individuals ability to observe, two exercises can be conducted as follows:

a Place a number of objects on a table, or on the ground and note what they are. Invite the team to view these objects for a set period, eg. 2 minutes, then cover them and ask each member to list the objects. By increasing the number of objects or reducing the time for observation in subsequent attempts, generally observation skills will be improved.

b. A variation on the same theme is to repeat the above exercise using 20 items, but in this instance, either remove one or move its position for a subsequent viewing. Then ask the team members to note the change that has taken place. Greater difficulty can be introduced by moving or removing a greater number of articles.

FORMATION TRAINING

12.09 The Team Leader requires a good knowledge of all the formations likely to be used.

12.10 If there are inexperienced members within the team, it is essential the search formation and methods to be used are taught prior to field activities. Open areas such as a football ovals or parks are suitable to train in the various formations prior to practise in a simulated field search activity.

TEAM SKILLS

12.11 To ensure success, it is necessary to train as a team. Proficiency will not be achieved on one annual exercise even if all the individual training has been undertaken

12.12 Assuming that all individual training has been completed, the following is a suggested program of team training which should be undertaken:

a. Search formations - on clear ground.

b. Search formations - in a bush setting.

c. Navigation and control - in search formations in a bush setting

d. Searching to find clues and objects - in relatively easy country.

e. Searching - in more difficult country.

f. Combined searches - using dog teams, trackers, horse mounted teams. The same exercises as listed above can be conducted in vehicles if that is appropriate to the terrain in the locality.

CONCLUSION

12.13 Searching is a specialist technique which requires training. Such training cannot be achieved during one annual search exercise if proficiency is to be gained and maintained. It must be remembered that in most searches, a life or lives are at stake and an inefficient search with a poorly trained team may cost life or at the least prolong the operation.

TRAINING SEARCH TEAM LEADERS

12.14 The search Team Leader is the vital link between the Field Search Controller and the search team. The leader must be highly trained and motivated with the experience and background knowledge which is necessary to successfully lead the team in the field. This can only be gained by constant training under realistic conditions.

DESIRABLE QUALITIES

12.15 Land searches are people intensive It is essential therefore, that the Team Leader has the knowledge, experience and personality to effectively lead and control the team. The leader must be an effective manager, must be aware of the capabilities of the team, have an understanding of each member's limitations and have their general well being in mind. There is a need for adequate rest, food and shelter during operations and the Team Leader must ensure that this is provided

12.16 The Team Leader must above all have three qualities, all of which are found to some extent in all individuals, but must be at the fore in a Team Leader. They are;

a. leadership,

b. dedication, and

c. knowledge.

12.17 These qualities are not always displayed together. For a short period, leadership alone can carry the job through, but a leader without dedication to both the task and the members will cease to be an effective leader in an extended operation, whilst knowledge of search procedures and proper utilisation of resources will enhance the operation.

12.18 SKILLS

Apart from the personal qualities of the Team Leader, there are a number of skills which must be learned and constantly maintained in order to remain effective. The main skills are:

a. **Orders** - The ability to give clear, concise and detailed orders is not a skill which comes easily to all people. The skill must be learned and practised at every opportunity. Without clear and concise orders, the search team has little chance of success.

b. **Map Reading and Navigation** - The ability to read a map and navigate in a variety of terrain situations is a skill which can only be gained on the ground and maintained with regular practise. The ideal situation is one in which all members of a team can read maps and navigate. The responsibility to search the correct piece of ground, is that of the Team Leader

c. **Use of Radios** - Radio will usually play a major role in search operations It is through radio that the search is controlled, updated information is received, assistance and support is obtained, and success signals are transmitted. Often terrain has an undesirable effect on radio communications and the Team Leader must not only know how to use the radio and pass messages on it, but to use the terrain to the best effect.

d. **Casualty Handling** - If the person found is injured or even unconscious, there is a need to administer first aid and evacuate the casualty from the area. The Team Leader must have a sound knowledge of first aid and casualty handling.

c. **Duties to the Leader's Organisation:**

(1) The leader's organisation must be advised that the task is completed and be given a report on the operation.

(2) Before the team departs, the Team Leader must ensure that all equipment is refurbished ready for another operation by:

(a) checking all stores used;

(b) placing radios on charge;

(c) returning maps;

(d) refuelling vehicles; and

(e) returning special equipment.

DELEGATION OF DUTIES

12.24 The list of duties which have been explained in this section are extensive and if carried out by the Team Leader alone, can take considerable time. The Team Leader may delegate tasks to the deputy in order that concurrent action can occur. Delegation of duties does not remove the responsibility, and the leader must ensure that they are completed.

ANNEX A TO
CHAPTER TWELVE

SEARCH TEAM LEADERS CHECK LIST

Tick as completed

ALL NAMES RECORDED . . . . . .

ALL MEMBERS SUITABLY DRESSED . . . . . .

EQUIPMENT CHECKED . . . . . .

MAP . . . . . .

COMPASS . . . . . .

RADIO FREQUENCY . . . . . .

CALL SIGNS . . . . . .

RADIO CHECK . . . . . .

RADIO SCHEDULE . . . . . .

SEARCH AREA - KNOWN . . . . . .

SEARCH ORDERS DELIVERED . . . . . .

ACTION IF LOST . . . . . .

FIELD SIGNALS CONFIRMED . . . . . .

CHECKED OUT FROM FIELD SEARCH H Q