



# **BASIC VISUAL TRACKING**

## **ELECTIVE**

Australian

Air Training Corps

Cadet / Instructor Notes

1<sup>st</sup> Edition, 1<sup>st</sup> June 2001

**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**  
**(21 Periods which includes a bivouac)**

**VTE is for cadets who have completed Advanced Stage and is a non-assessed course. The VTE course is designed to enhance the skills and training in survival techniques that has already been achieved throughout the cadets other stages of training. VTE can also be used in FC and SV training where the identification of animal and human tracks may lead to the possibility of rescue and or the dangers of wild animals in the vicinity.**

**VTE 1 INTRODUCTION Period(s): 1**

- a. State the principles of tracking

**VTE 2 TYPES OF SIGN Period(s): 1**

- a. Explain Temporary and Permanent sign
- b. Describe Big and Small Top Sign
- c. Understand Large and Small Ground Sign

**VTE 3 TECHNIQUES FOR DETECTING SIGN Period(s): 1**

- a. Understand where to look for sign
- b. Understand how to look for sign
- c. Explain how the environment assists the tracker

**VTE 4 PRACTICAL Period(s): 1**

Construct three date/time boxes side by side.

**VTE 5 ANIMAL TRACKS Period(s): 1**

- a. Understand the difference in animal tracks.
- b. Explain the eating habits of carnivores and herbivores.
- c. Understand the animal habits and likely movement times

**VTE 6 PRACTICAL Period(s): 3**

- a. Demonstrate the techniques for making plaster moulds of animal tracks
- b. Cadets to use Plaster of Paris to search and make moulds of at least three different animal prints.

**VTE 7 INFORMATION GAINED FROM SIGN AND TRACKS  
Period(s): 2**

- a. Understand the following information from tracks and sign
  1. Age of track
  2. Direction of movement
  3. Number in the party
  4. Speed of the movement
  5. Confident or cautious movement
  6. Weapons or Equipment carried
  7. Male or Female
  8. Morale of the group
  9. Food eaten
  10. Any Deceptive measures used

**VTE 8 PRACTICAL Period(s): 2  
Scenarios are contained in Examination Data Base**

- a. Staff to lay out a set scenario in soft earth as listed for practical demonstrations.
- b. Cadets to move to the layout and from the tracks, glean out the series of events that took place.
- c. Repeat a. – b. three times.

**VTE 9 PRACTICAL Period(s): 4  
Scenarios are contained in Examination Data Base**

- a. Two cadets from each group to blaze a trail up to 300 metres long while other members practice techniques of sign detection.
- b. Cadets of each group to rotate until all members have tracked someone

**VTE 10 DECEPTIVE MEASURES Period(s): 1**

- a. Understand the measures used to hide tracks and trails:
  1. Dragging foliage behind
  2. Walking in streams and creeks
  3. Walking backwards
  4. Walking on rocks or hard surfaces

**VTE 10 DECEPTIVE MEASURES (cont)**

5. Stepping in one another's prints to confuse numbers
6. Wearing rags or foliage on footwear

**VTE 11 REVISION**

**Period(s): 3**

- a. Revise VTE 9 with cadets using deceptive measures to conceal tracks.

**VTE 12 CONCLUSION**

**Period(s): 1**

- a. Understand the need for continued personal practice
- b. Explain how the visual tracker can use his/her skills in FC
- c. Explain how the Visual Tracker can use his/her skills in SV

**ELECTIVE SERVICE TRAINING**

**BASIC VISUAL TRACKING (VTE)**

**VTE 1 INTRODUCTION TO VISUAL TRACKING**

**1 Period**

**VISUAL TRACKING**

**AIM.**

- 1001.** a. State the principles of tracking.  
b. Explain the types of signs used.  
c. Comprehend the techniques for detecting sign.  
d. Know the types of information gained from sign.

**EXPLANATION**

**1002.** Have you ever wondered how trackers, the ones that you read about, or see in movies, get their information from looking at the ground? In those books and movies the information given seems outrageously unbelievable. In similar circumstances the detective can follow the criminal, the native can follow ancient trails, the hunter can follow the animal or the scout can follow the enemy.

**1003.** In a combat situation, there is an enormous responsibility placed on the scout who leads his or her section into hostile territory.

**1004.** All the members of the section are relying on the skills of the scout to glean information from the surrounding ground and vegetation for early warning.

**VISUAL TRACKING**



**THE  
AIMS**

- 1. TO UNDERSTAND HOW NATURE ASSISTS THE VISUAL TRACKER.**
- 2. TO INTERRUPT SIGN BY ANIMALS AND HUMANS.**
- 3. TO UNDERSTAND THE PRINCIPLES OF GOOD TRACKING.**
- 4. TO KNOW THE METHODS OF SEARCHING FOR LOST SIGNS.**

**1005.** If hunting for wild life then the same principles apply, the difference is that the wild animal is less cunning but more attuned to their senses such as sight, sound or smell. The animal tracker has to take into account the prevailing weather conditions as well as the strength of the animal he or she is tracking.

**1006.** Over the next few days you will be taught the basic principles of tracking both animals and humans. You will come to understand that there is not much difference between the two and after practice you will become quite proficient at following your intended target.

**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**

**VTE 2 TYPES OF SIGNS**

**1 Period**

**TYPES OF SIGN**

**EXPLANATION.**

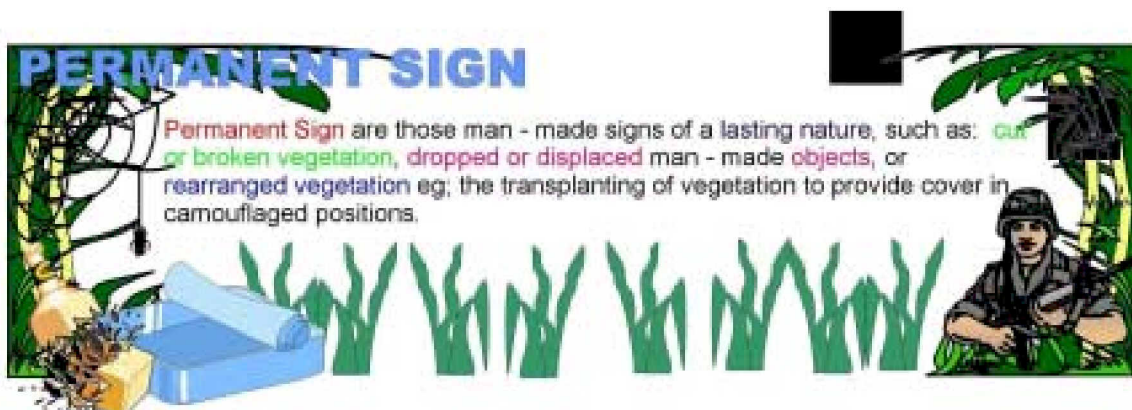
**2002.** Before anyone can track you must know what you are looking for, whether the sign is obvious, obscure or hidden. Types of sign most seen by the visual tracker are broken into several categories:

- a. Permanent Sign
- b. Temporary Sign
- c. Top Sign
- d. Ground Sign.

**PERMANENT SIGN**

**2003.** Permanent signs are those man made signs that are of a lasting nature such as:

- a. Cut or broken vegetation,
- b. Dropped or displaced man made objects,
- c. Rearranged vegetation.



## TEMPORARY SIGN

**2004.** Temporary Signs are the unavoidable marks left by movement. This includes:

- a. Marks on soil,
- b. Disturbed vegetation,
- c. Movement of growing vegetation, and
- d. Disturbances in insect and animal life.



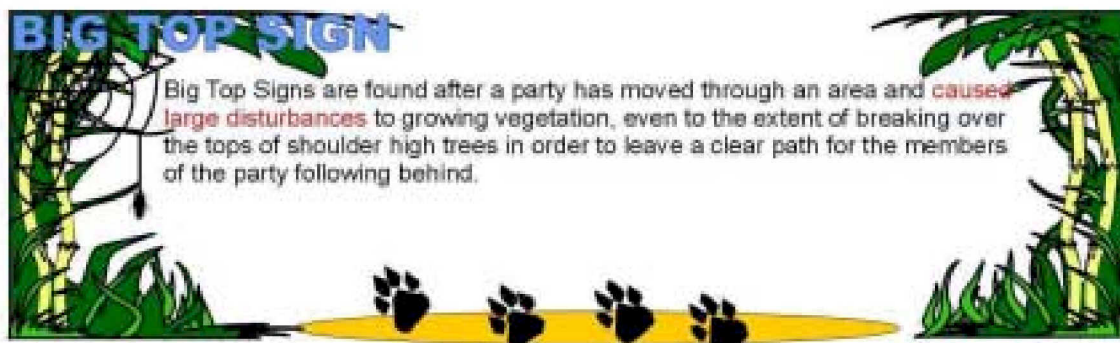
## TOP SIGN

**2005.** Top Signs are those signs, which are about knee height. As humans walk through undergrowth they cause disturbances to the growing vegetation by shaking branches, leaves or vines. Top sign can be placed into two classifications:

- a. BIG TOP SIGN
- b. SMALL TOP SIGN.

## BIG TOP SIGN

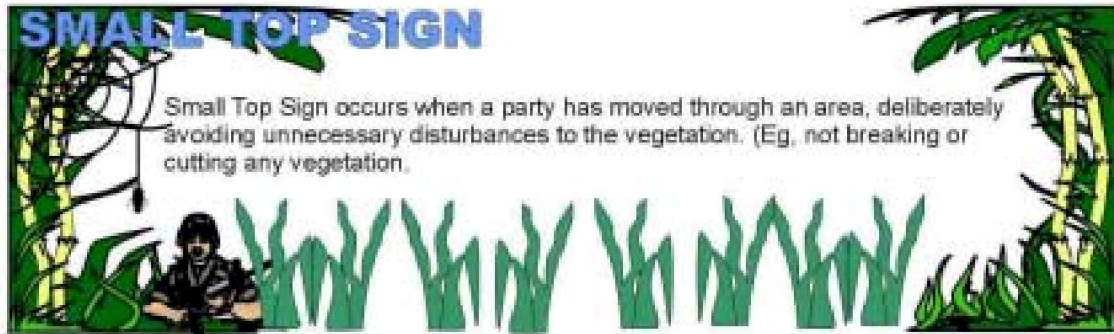
**2006.** Big Top Signs are found after a large party has moved through an area and caused large disturbances to growing vegetation, even to the extent of breaking over the tops of shoulder high trees in order to clear a path for the members of the party following behind.



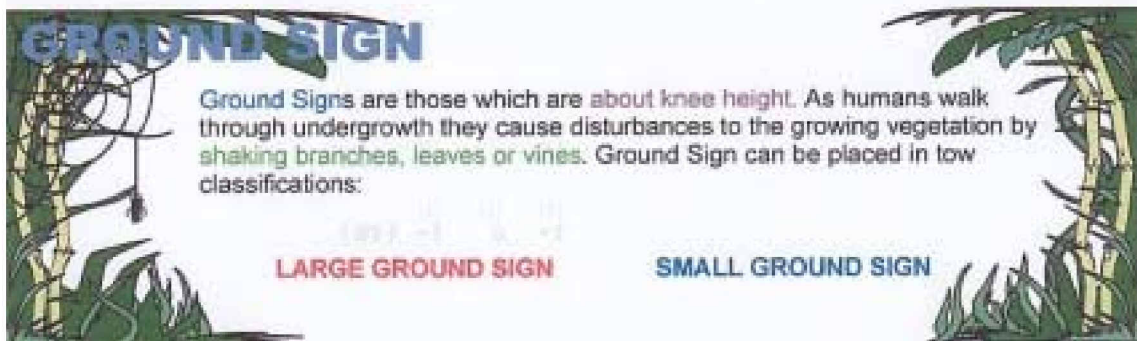


## SMALL TOP SIGN

**2007.** Small Top Sign occurs when a party has moved through an area, deliberately avoiding unnecessary disturbances to the vegetation, e.g. not breaking or cutting vegetation.



## GROUND SIGN



**2008.** Ground Sign occurs when humans have disturbed the vegetation below knee height as they pass through and over the area. Ground Sign has two classifications:

- a. Large ground sign
- b. Small ground sign.

## LARGE GROUND SIGN

**2009.** Large ground sign is that sign which is unmistakable after a large party has moved through an area and left behind a clear and distinctly marked path.



## SMALL GROUND SIGN

**2010.** Small Ground Signs are found after a small, lightly laden party has moved through an area, deliberately placing their feet carefully to ensure they cause as little disturbance to the ground and surrounding vegetation as possible.



**ELECTIVE SERVICE TRAINING**

**BASIC VISUAL TRACKING (VTE)**

**VTE 3 TECHNIQUES FOR DETECTING SIGN**

**1 Period**

**EXPLANATION**

**3001.** We have covered what kinds of signs are made by anyone passing through the bush. It is rare that anyone can move completely through an area without disturbing something and as a tracker, you know it is there and all you have to do is find it.

**HOW TO LOOK.**

**3002.** When searching for sign look to the ground 3 to 4 metres in front of you until the signs are picked up. At that distance move the eyes and head from side to side looking for anything that is unnatural or has disturbed the insect, animal life, undergrowth or ground.

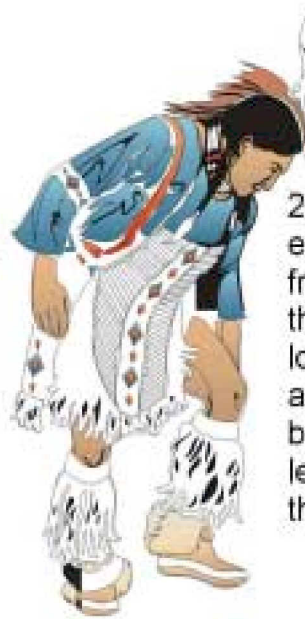
**3003.** Observation is best done close to the ground so that the sunlight or shadows can assist with enhancing the sign. Most importantly, look through the undergrowth not at it.

**3004.** When looking for movement, it is best to concentrate on one single area at a time allowing any movement to attract the eye.

**3005.** Once sign has been detected, stop, mark it, examine it and determine its value before continuing.

**3006. Remember,** when tracking, sign will not always be easy to see, even when the thing you are tracking is not being careful. Tracks or sign will sometimes be as clear as day and suddenly no sign at all.

**HOW TO LOOK**



1. Search the ground out to about 3 - 4 metres until a trail is picked up.
2. When searching, head and eyes must be kept moving from side to side, especially in the jungle. This will assist in looking through the vegetation and not at it. Observation is best made as close to ground level as possible, looking through the undergrowth.



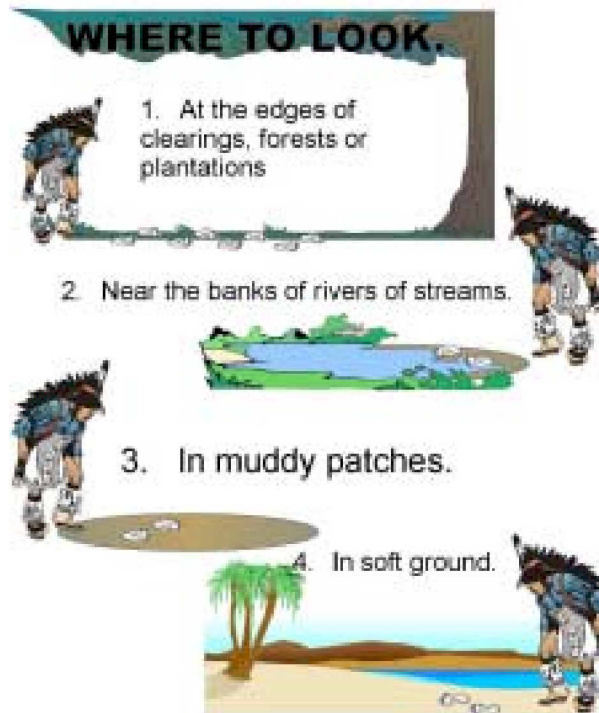
## WHERE TO LOOK

### EXPLANATION

**3007.** When tracking humans, a tracker must be always aware of the habits of the human in the bush. Humans will always take the easy route they will walk around obstacles rather than through them. They will walk on low flat ground rather than climb to higher ground. They will follow animal tracks or paths rather than travel through the bush.

**3008.** Keeping in mind the natural habits of humans the places to search for tracks and signs are:

- a. At the edges of clearings, forests or plantations.
- b. Near the banks of rivers, streams, dams or waterholes.
- c. In muddy patches.
- d. In any form of soft ground.



**3009.** All of the above help the tracker to a starting point for the detection of sign. Once detected the tracker must be on the lookout for any disturbances to the vegetation or insect/wildlife that will allow the tracker to follow the target.

### **OTHER AREAS THAT CAN ASSIST THE TRACKER.**

**3010. Plant Life:** Plant life can be of great assistance (but only for a short time). There are certain kinds of Fungi and ferns among others that will react to the touch of human hands by turning over, folding in on itself, changing colour or displacing moisture. These kinds of plants react in this way but only for a short time, within two hours they will resume their normal positions.

**3011. Mud and Soil Displacement:** A human, either bare foot or wearing boots will accumulate moisture from the ground onto their footwear, this in turn picks up dirt, mud, soil, leaves or grass. When the target is moving over harsh terrain such as rocks, fallen logs, trees, and sometimes hard packed trails, these deposits from their footwear are left behind and easy to follow.

**3012. Cobwebs:** Most spiders in the wild build webs at night and remove their web in daylight hours. Broken or disturbed cobwebs should always be the concern of the tracker. Not only does it indicate the height of the party, but also in many cases the rough time the party passed. Undisturbed cobwebs at the entrance to a cave or an animal den are a clear indication that the habitat is uninhabited and therefore safe.

**3013. Vegetation:** Large pieces of fallen bark, leaves, dead wood and small branches are always clear indicators of movement.

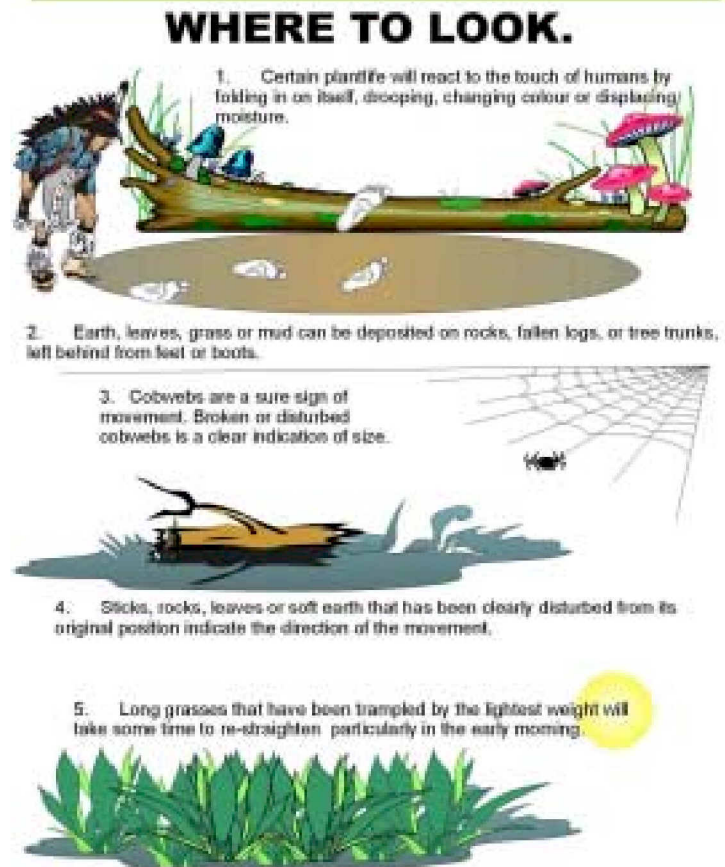
**3014. Bark** will gather dew during the night and if disturbed will show the dry patch underneath in comparison to the surrounding damp. Alternatively bark with dry side up may indicate that it has been kicked over.

**3015. Leaves** can also show movement and direction.

**3016. Dead wood** when crushed or broken will clearly show a different colour. Also the white ants (if any) will be moving in a frenzy to a darker area.

**3017. Small branches** that have been in position for more than two days will kill the grass beneath it. The disturbance of these branches will clearly show the impression of where it was and new position of the stick will show the direction the party was travelling.

**3018. Grasses:** Many types of green grass will bend but not break under most pressure. If this is done in the early morning, these grasses take longer to become upright than other grasses, which have not been disturbed. Some grasses will even wilt when a shadow is cast over them, however they resume their normal position very quickly.



**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**

**VTE 4 PRACTICAL**

**1 Period**

**BOX CONSTRUCTION**

**4001.** Construct three date/time boxes side by side as follows:

**Timber to construct three ‘Time boxes’.** These boxes are constructed side by side and should not be smaller than one metre square each. They are filled (no more than 12mm deep) with soft soil or sand.

**4002.** Conduct “time” scenarios as in examination database.

**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**

**VTE 5 ANIMAL TRACKS**

**1 Period**

**Recommended reading:** *“Tracks, Scats and other Traces” by Barbara Triggs. This is a field guide to all Australian Mammals; it also contains a comprehensive guide to identifying animals from skeletal remains.*

**EXPLANATION**

**5001.** We have covered where to look and many of the things that will give away movement. The movement of animal life is very similar.

**AIM**

- 5002.** a. Understand the difference in animal tracks.
- b. Explain the eating habits of carnivores and herbivores.
- c. Understand the animal habits and likely movement times

**DIFFERENCE IN ANIMAL TRACKS**

**5003.** Animal tracks vary and it is extremely difficult to outline all aspects of what makes animal tracks different. The signs made by animals can indicate their habits the same as in human tracking.


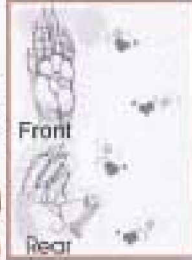


**Kangaroo/Wallaby tracks** are unique and unmistakable, although the drawing shows a thumb-like toe on the rear foot it is never seen as part of the track unless in the softest of mud. This small toe is higher up on the foot and is used for grooming. The presence of the front paws between the hind feet show the animal in a walking gait and this gait will always show the impression of the tail as it is used for a prop. The front paws of the female are always smaller than the male. The large front claw is a powerful weapon and can inflict a very serious wound. Scats are found in several shapes and sizes, even from the same animal. They can be found in and around their resting place and along tracks that they frequent.

**Quoll or Native Spotted Cat tracks** are distinct by the lack of a claw on the rear fifth toe. Although the front foot has five toes the inner is seldom seen unless in the softer earth. The gait of the quoll is one of leaping and walking. The quoll is a fierce and fast attacker and is not afraid to leap at it's prey even if it is as large as a man. Weighing on average four kilograms and measuring an average of 30cm long they are more than a match for true cats and even hunting dogs. The bite or scratch from a quoll can be infected very quickly and medical treatment must be sought as soon as possible. Scats are usually cylindrical and pointed at one end and will contain bits of bone fur and feathers. The scats have distinctive pungent strong unpleasant odour.

**5004.** The animals of the wild are constantly on the lookout for predators, they are easily startled and are more at ease in some areas more than others.

**5005.** Listed are a few that may be encountered, however, it is recommended that a book suggested above be purchased to assist the tracker.

	<p>Deer tracks, like the pig, have dew claws which are high up on the shin. However, the deer dew claws are much closer together, both these animals will leave the print showing the dew claws if the earth is soft enough. The split hoof will show the 'toes' close together as the deer walks but will spread as the animal builds up speed. Deer scats can be round, oval or cylindrical and are usually deposited in clumps. Sheep And goat scats can be mistaken for deer</p>	 <p>Dew Claws</p>
	<p>Possum tracks are almost identical, regardless of the species, all have five toes. The front paw usually has all five pointing forward, whilst the rear paw has the fifth toe similar to that of the human thumb. All toes have long, very sharp claws. Claw marks can be found on trees. Possums will live in the hollows of dead trees and also in nests not unlike birds. The ringtail possum spends a lot of time on the ground and if tracks are found it is likely to be of that species. Scats are usually cylindrical and found in clumps of three to six pellets they are found beneath their nests or at the base of trees and where they feed.</p>	 <p>Front Rear</p>

**EATING HABITS**

**5006.** Animals can be categorized into three types of feeders: Carnivores, Herbivores and Omnivores.

**5007.** Carnivores are meat eaters and are constantly on the move looking for its next meal. Foxes, Dogs, Cats, Tasmanian Devil, Numbat, Quoll, Marsupial Moles and Seals to name a few.

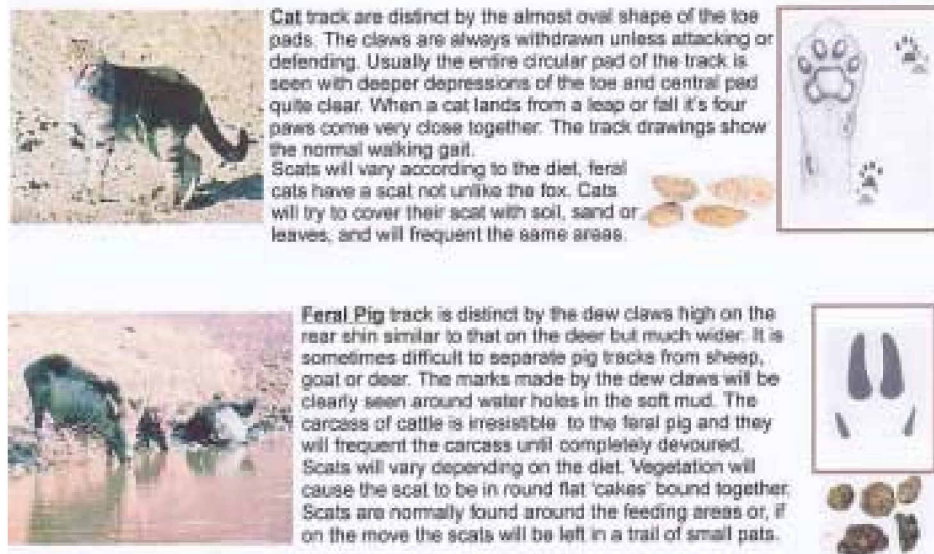
	<p><b>FOX</b> tracks can be mistaken for a small dog, by all but the experienced tracker. The two main differences are the two center claws which are much closer together than their dog counterpart. The sign made by a fox will show that the gait makes the lines of the tracks much closer together, almost in line. The hair around the pad usually does not always show in the track, leaving a clear 'inverted V' pad sign. Scats are usually tapered showing remnants such as bones, feathers etc.</p>	
	<p><b>Dingo/Dog</b> tracks are large and quite clear, the pad of the hind foot leaves a round and sometimes oval print. The front pad is always smaller than the rear. Unlike the fox the gait is more pronounced and the line of the tracks much wider. The claw marks of the center toes is wide (in comparison to the fox) Dingo scats will often be found deposited on elevated positions. Like rocks. The odor is strong and unpleasant.</p>	 <p>Front Rear Paws</p>



**5008.** Many species of birds are also carnivores like most birds of prey from Eagles to Seagulls. The teeth of a carnivore is noted by the long pointed 'eye teeth' or canines.

**5009.** These creatures are mostly not animals of habit and their sign is usually discovered by accident. They may not frequent waterholes on a regular basis as they get most of the moisture needed for survival through the blood of their victims.

**5010.** Herbivores are animals, which confine themselves to a diet of plant, nuts, berries and all manner of vegetation. Their teeth have no 'canines', but instead have large cheek teeth for crushing and grinding.



**5011.** Animals like Deer, Cattle, Horses, Donkeys, Rabbits, Kangaroos, Sheep and Goats just to name a few. These browsing animals are usually habitual in that they require a reasonable amount of water on a daily basis to assist in the digestion of the vegetation that they consume. Tracks and trails of herbivores can be found coming to and from water sources and are easily identified in the soft muddy edges of watering holes.

**5012.** Omnivores are animals that have a regular mixture of both animal meat and vegetation as a staple diet. The two most known omnivores are man and pigs.

**5013.** Animals that are identified as omnivores are Bears, Badgers, some members of the Possum family, Bandicoots, Bettongs, Potoroos, Rat-Kangaroos and many kinds of Rodents.

**5014.** Insect-eaters are referred to as Insectivores, and these are animals like the Echidna.

## **ANIMAL HABITS**

**5015.** Animal habits should never be taken as a certainty, as this is exactly what they may not do. Climatic conditions or environmental conditions may cause the animal to deviate from its normal routine without notice. What the animal did six days in a row may not be what it does on the seventh.

**5016.** However, most animals need water on a regular basis and that is a constant. When tracking animals as a survival need, patience will prevail.

**5017.** Most animals are very wary during drinking and feeding. They will be more on the lookout for predators just before their head goes down to eat, then they will be looking and listening more intently as they raise their heads to chew and swallow.

**5018.** Animals like the rabbit or fox are extremely alert at the entrance or exit of the burrow or den. Most animals will feed in the early morning whilst there is dew on the grass so as to get an intake of moisture with the meal. They will rest during the heat of the day and again be on the move at early afternoon.

**5019.** Pigs on the other hand will rest most of the day in a shaded 'den' and move to water in the early evening, having watered they will forage most of the night. A carcass of cattle or similar is irresistible to the wild pig which they can smell for several kilometres and they will habitually return each night to feed off it.

**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**

**VTE 6 PRACTICAL**

**3 Periods**

1. Demonstrate the techniques for making plaster moulds of animal tracks
2. Cadets to use Plaster of Paris to search and make moulds of at least three different animal prints.

**INSTRUCTIONS**

**6001.** The stores required for the moulding of tracks can be few or many depending how complicated one wishes to make the job. Listed below is the optimum stores needed and are as follows:

- a. Two cups of Plaster of Paris (minimum)
- b. One litre of water
- c. A stirring stick
- d. A rubber or pliable half litre container
- e. A disposal paper face mask
- f. A couple of egg rings or stiff cardboard rings approx 15mm wide
- g. 100mm square mosquito netting or wide gauze bandage
- h. A strip of white cloth 100mm wide by one meter long
- i. A half litre empty food tin with a pinched edge to make a pouring spout
- j. A large plastic drinking straw
- k. Two small vials of food coloring (preferred dark colours)

**Step 1:** Locate the tracks one needs to take a mould of in the areas that were taught. When found mark the area with the strip of white cloth tied to a tree or scrub within two metres of the sign.

**Step 2.** Move to the sign and mark a circle around the sign about 15cm from the print, this will be a reminder not to get so close as to distort the print you intend to mould by collapsing or crushing the sign with you weight.

**Step 3.** Use the plastic straw to blow away any leaves or light debris that is in the print or a sucking motion may be employed to draw debris out of the print. This is particularly handy where the print may show talons or claws and be filled with sand or dust. Remember this blowing action will not work on tracks that have been made in light, dry sand or dust.

**Important: Never breathe in using this method, as debris may be fatally inhaled.**

**Step 4.** Lay out the stores required to make the mould. Egg Ring or Cardboard Ring, Facemask, Plaster of Paris, Rubber mixing bowl, Water bottle, Stirring stick, Food tin (pouring jug) and Vial of food coloring.

**Step 5.**

1. Carefully place the egg ring or similar over the print, ensure you have at least 1cm clearance all around the print.
2. Place on the facemask,
3. Judge how much plaster will be needed to fill the print only and place it in the bowl,
4. Add water slowly and mix until you have a smooth consistency, continually raise the stirring stick and check to see if the plaster runs smoothly from the stick, plaster that sticks to the stick is too thick and will cause air bubbles when pouring,
5. Add several drops of food coloring and continue to stir it in until a consistent colour is throughout, transfer the plaster to the pouring jug,
6. For prints that are in soft sand or dust, the mixture must be very runny, for others that are in clay or hard packed earth the mixture still needs to be runny but not as much. Pour the contents of the coloured mixture into the print. In soft sand or dust, pour the contents on to the top of the stirring stick and allow the fluid to run down the stick and fill the print,
7. Empty the remainder onto the ground and mix a fresh batch that will fill the egg ring mould, this batch has no food coloring,
8. Pour the new batch on top of the coloured mix that is already in the print and fill to the top of the egg ring. If the print is large then insert a strip of the gauze into the fresh batch and it will strengthen the plaster when dried.
9. Gather up all equipment including and left over plaster and return to base camp.

**6002.** Moulds are best done first thing in the morning and left for the entire day. If the mixture is very runny, then the mold is best left until the following day.

**6003.** When retrieving the mould, never try to extract the mould from the ground, take a spade or entrenching tool and lift the mould and the surrounding soil in one piece. Carefully scrape away the surrounding soil/sand/dust or mud and lay it top down, in other words, with the egg ring down and leave for several more hours.

**6004.** When completely dry and hard the remainder of the soil/dust/sand or mud may be scraped away or even washed away, be particularly careful around claw or talon areas. The end result will be a coloured print on a white pedestal.

**6005.** These plaster prints can now be used by the instructor to demonstrate to students what prints look like in sandbox training aids.

**6006.** If available there is a product that will produce very good results and takes half the drying time. It is called Reprosil and is available from dental sections and is normally used for making gum impressions, however, it is a lot more expensive than Plaster of Paris.

**ELECTIVE SERVICE TRAINING**

**BASIC VISUAL TRACKING (VTE)**

**VTE 7 INFORMATION GAINED FROM SIGN & TRACKS**

**2 Periods**

**EXPLANATION**

**7001.** We now know where to look and what to look for. Now, what kind of information can be obtained from a sign? The experienced tracker must be able to not only detect sign, but also decipher the information that has been left behind. This information is vital to the commander, as it may be an early warning to possible danger.

**Information gained from Sign**

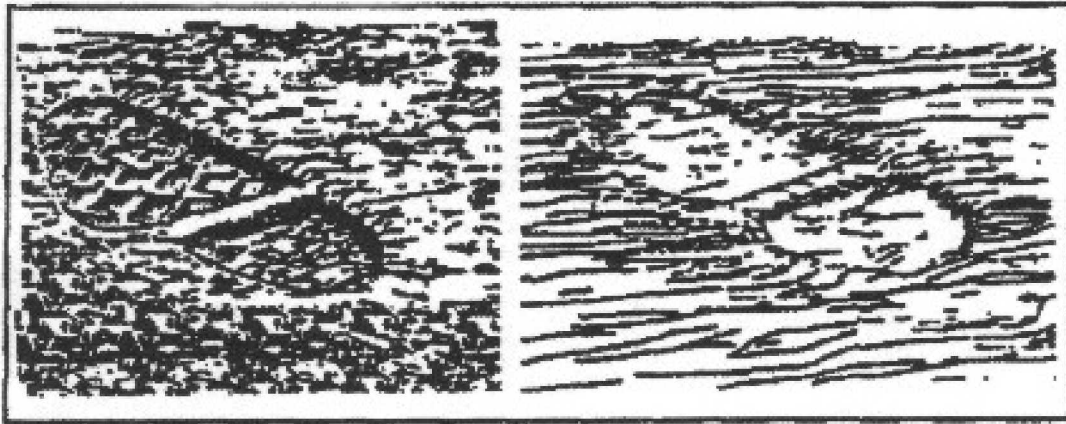
**7002.** There are various types of signs left which are useful in gaining information. They are:

- a. The age of the track.
- b. The direction of movement.
- c. The number in the party.
- d. The speed of movement.
- e. Confident or cautious movement.
- f. Weapons carried (under good conditions).
- g. Equipment carried.
- h. Male or female.
- i. Morale of the group.
- j. Food eaten.
- k. Any deception methods used.

**AGE OF TRACK**

**7003.** The age of a track is extremely difficult to determine without a great amount of practice. Tracks more than three days old are usually for information only and rarely for immediate action.

**7004. Rain** – Light rain will make small pockmarks in a track. This will be a clear indication that the movement was prior to the rain, thereby giving the tracker a good idea of when the sign was made.



*Weather effects on footprints*

Before and After.

**7005. Nocturnal Animals** – Prints from nocturnal animals superimposed over the track will show the track was made prior to the previous night, or early the night before. Grazing animal tracks such as; horses, cows or sheep superimposed will indicate the track was made during the evening or early morning and sometimes during daylight hours.

**7006. Mud** – The pressure applied to mud (depending on the weight) will force the moisture from the earth leaving a clear print in the mud. It takes several hours (depending on the moisture content) for that print to refill with the surrounding water.

**7007. Blood** – Blood will turn black after several hours. Fresh blood is red and will remain that colour for about an hour or two, blood three to four hours old will be a brownish red colour and can easily be confused with tree sap. Blood five to six hours old will turn blackish brown and depending on the amount may still be pliable. By the following day the blood will start to enter lize.

**7008. Broken twigs or branches** – The age of broken twigs or branches can be determined by making a similar break next to the sign. A fresh break is a greenish yellow in colour and will darken by the hour as the sap dries at the injury. It will take about four hours for a distinct colour change to be seen.

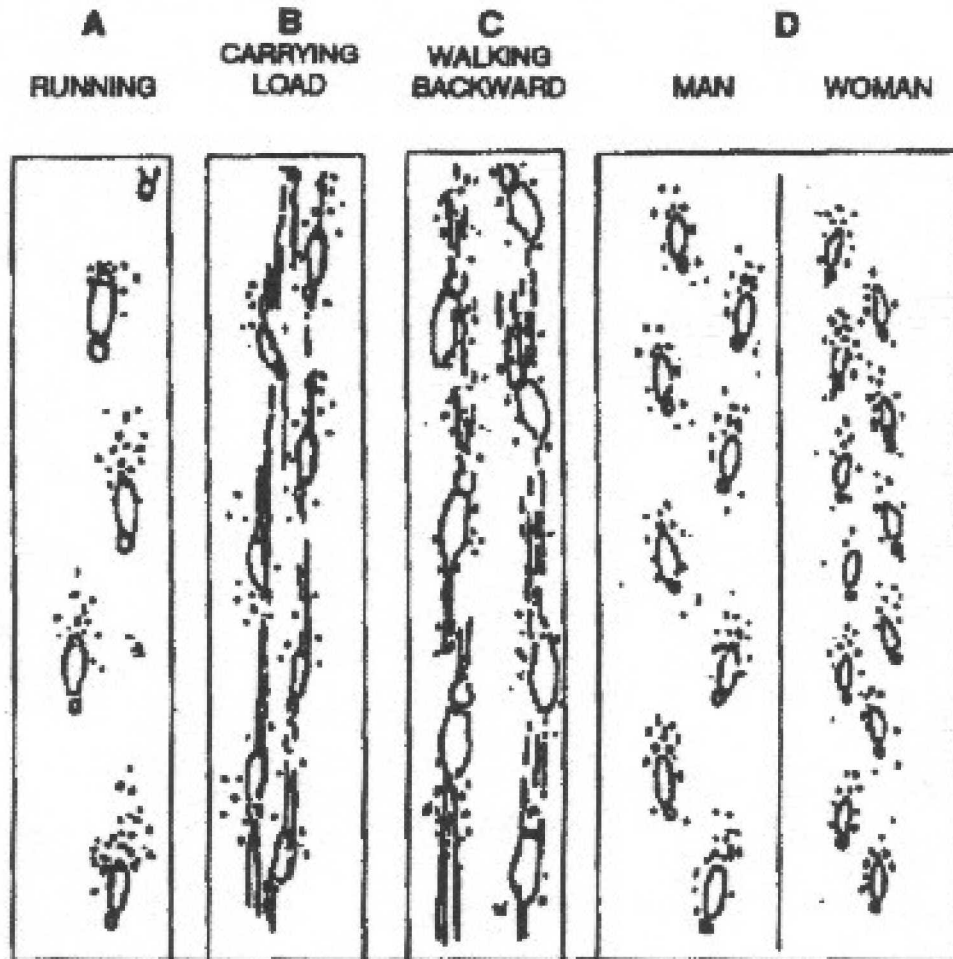
**7009. Moist Earth** – Moist earth deposited on rocks or other hard surface will change colour as the sun dries the moisture. Depending on the thickness of the deposit, it usually takes about two hours to dry a small deposit.

**7010. Morning Dew** – Grasses and weeds such as thistles or ferns which hold morning dew if turned upside down, will hold that dew on the leaf for at least two hours after other leaves have dried in the sun. The amount of moisture left on the leaf can reduce the time to within fifteen minutes of the disturbance.

**7011. Disturbed twigs or branches** – Twigs or branches that have laid in position for a long period of time will become the home of many insects, i.e. ants, beetles, centipedes, scorpions or wood roaches. A twig or branch that has been disturbed from this position will send the insects into a frenzy. Depending on the number, it will take a short period of time for these insects to vacate the area. Insects still exposed to the tracker, is a clear indication that the target is very close.

## DIRECTION OF MOVEMENT

**7012. Humans** – Humans when walking, will go heel first and roll onto the toe. If the ground is soft or loose the toe will dig in and scoop a small amount of earth forward. This will show the direction of movement. Alternatively, if the human is trying to cover their direction by walking backwards, there will be no loose earth in front of the toes and the toe and heel print will be deeper than the center of the print and the earth will be crushed backwards. Also the small scoop of earth will be at the heel end instead of at the toe.



**7013. Grasses** – Because a human comes down on their heel all vegetation is pushed forward, so even if a track is not clearly visible, vegetation pushed forward shows direction of movement.

**7014. Vines and Branches** – Vines and branches that are at a level that can be snagged on clothing or the person maybe dragged forward and snagged on itself, also showing the direction of movement.

**7015. Streams and Creeks** – Any print made in streams or creeks that have no current will show the direction of movement. The current, created by the target's turbulence, will deposit silt in the toe or the heel end of the track showing the direction that the target is going.

### **NUMBER IN THE PARTY**

**7016.** To correctly estimate the number of members in a party, simply measure a distance of one metre and draw a line at both ends dissecting the trail. Now count every print and partial print in the grid and divide by two. That will give a very accurate count unless the number is great and some prints are completely hidden by other prints.

### **SPEED OF MOVEMENT**

**7017.** The average pace of a party walking is approximately 65cm to 75cm. The print made by a person is clear and whole from heel to toe. The moment a track starts to expand in distance between prints it will be a clear indication that the party is starting to speed up.

**7018.** When the party begins to run so does the distance between paces expand, about this point the heel of the print becomes lighter than the toe and if the party is in a sprint then it is likely that only the forward part of the print will be seen.

**7019.** Also as the party speeds up so does the disturbance of the local vegetation and wildlife. Signs become clearer as no caution is given when running.

### **CONFIDENT OR CAUTIOUS**

**7020.** A confident party shows a clear print with very few stops and little care to the covering tracks. Paces are usually regular in size. In soft soil the heel and toe print will be a little deeper than the center of the print.

**7021.** A cautious party will take a much smaller pace with frequent stops or pauses. The prints may show a slight distortion as the party pivots to continually look around.

**7022.** The cautious party will continually change direction to avoid damage or disturbance to the fauna and flora.



### WEAPONS CARRIED

**7023.** In good conditions (soft earth etc) the type of weapons carried may be detected by the prints made by the weapon placed on the ground or the print of the firing position taken up by the party.

**7024.** When a party takes a rest stop, weapons may be placed on the ground butt first, (between the knees or leaning against a tree). A tracker with knowledge of weapons will be able to identify the weapon by the butt print.

**7025.** A machine gun for example will most probably be placed on the ground using the bipod legs leaving a telltale print. The print of a body lying on the ground with an elbow print one in front of the other will indicate a person with a rifle or carbine. Which ever elbow is in front will tell whether the party is right or left-handed.

### EQUIPMENT CARRIED

**7026.** Whilst the tracker cannot tell what is exactly carried individually from sign the indication is that because the prints are much deeper then the party is carrying something heavy. **Close and deep prints**, when a party is carrying a heavy load the closer together the prints become, the heavier the load the closer the prints. **Barefooted**, a person who is barefooted and carrying a heavy load will leave close and deep prints but, in addition, will also show the toe prints splayed apart. **Stops**, When a party is loaded with equipment their progress is slowed down by frequent rest stops. These stops may indicate the type of equipment carried as the load is placed on the ground during the rest.

### MALE OR FEMALE

**7027.** Male prints are normally larger and wider than their female counterpart. The toes of a male are more likely to be pointed slightly outward and left and right prints form two distinct lines side by side.

**7028.** Generally females have a much narrower and smaller foot and leave a lighter print. Female toes are generally pointed forward or predominately 'pigeon toed'. Female prints that are pointed outward and in two lines like a male, indicates that she has had some form of military training. Female prints that are pointing straightforward and the left and right are one behind the other indicate that she has been trained in 'deportment and etiquette'.

### MORALE OF THE GROUP

**7029.** High morale will be indicated by strong purposeful prints. In a combat situation a party with high morale will be very hard to detect as they are all 'switched on' and doing the correct thing whilst moving.

**MORALE OF THE GROUP (cont)**

**7030.** A party that has low morale will be taking smaller steps, lagging behind, dragging their feet and sometimes, even go so far as to be dragging their weapons or equipment. No care is taken to conceal the progress and pieces of equipment or clothing may be found discarded by the prints.

**FOOD EATEN**

**7031.** To determine what food is eaten the tracker must come across discarded rubbish or wrappers. Overnight stops will always be fruitful in determining what was eaten, whether it was hot or cold, military or civilian, fresh or preserved. Regardless of the discovery, the tracker can only glean the information that has been left by the party. Discovering faeces can be an indication of what food has been eaten.

**ANY DECEPTIVE MEASURES USED**

**7032.** A person or party that does not want to be discovered will use many and varied methods to hide their tracks or if that cannot be done, disguise their tracks to mislead the tracker.

- . Some methods of deception are:
  - . Walking backwards
  - . Retracing ones steps
  - . Walking up or down stream
  - . Taking to the trees
  - . Walking on rocks or hard ground
  - . Dragging a bush behind to remove prints
  - . Wearing rags or vegetation on the feet
  - . Walking in one another's prints to disguise numbers.
  
- . These methods are covered in more detail in VTE10.

**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**

**VTE 8 PRACTICAL**

**2 Periods + 1 Day for practical scenarios**

1. Staff to lay out a set scenario in soft earth as listed for practical demonstrations.
2. Cadets to move to the layout and from the tracks, glean out the series of events that took place.
3. Conduct practical scenarios as per examination database.

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**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**

**VTE 9 PRACTICAL**

**4 Periods**

1. Two cadets from each group to blaze a trail up to 300 metres long while other members practice techniques of sign detection.
2. Cadets of each group to rotate until all members have tracked someone
3. Conduct practical scenarios as set out in examination database.

**ELECTIVE SERVICE TRAINING**  
**BASIC VISUAL TRACKING (VTE)**  
**VTE 10 DECEPTIVE MEASURES**

**1 Period**

**UNDERSTAND THE VARIOUS METHODS OF DECEPTION**

**10001.** Some methods of deception are:

- . Walking backwards
- . Retracing ones steps
- . Walking up or down stream
- . Taking to the trees
- . Walking on rocks or hard ground
- . Dragging a bush behind to remove prints
- . Wearing rags or vegetation on the feet
- . Walking in one another's prints to disguise numbers.

**10002. Walking backwards.** This method is used in conjunction with high activity areas. The target will walk backwards from a central point or RV to confuse the tracker at the start point. Caution must be used as the tracker will often just glance over tracks and not become aware of the deception until it is too late. Careful examination of the individual print will show that the toe and heel impression will be slightly deeper than normal walking, the length of pace will be shorter and finally, the tell-tale drag marks at the heel is almost impossible to avoid. As walking backwards is not a natural act the tracks may also show a wobble gait as the target tries to maintain balance.

**10003. Retracing ones steps.** Walking backwards is often used when target realizes that the tracker is close behind. Retracing ones steps will bring the target back to a point where an ambush may be set or the target wishes to go to the trees or simply deviate from their course to give the target more time to escape. The tracker may come to the last sign made and find the target has just vanished. Before conducting a Box Search, the tracker must examine the print carefully and glean whether the target has used this deceptive method. It should be noted that the same telltale sign as walking backwards would give away the target with one exception. Unless the target is extremely careful he/she will overprint or ghost their own sign, the drag marks will show at both the toe (walking forward) and at the heel (walking backward).

**10004. Walking up/down stream.** If the creek or stream has a current then it is likely the bottom will be gravel or rock making it extremely difficult to determine which way the target went. In this case a comprehensive search of the banks, both up and down stream must be carried out. The tracker will be looking for collapsed banks and water residue up on what would normally be a dry edge.

**10004. Walking up/down stream. (cont)** In creeks and stagnant streams it may be impossible to see the bottom however, if the water has good visibility then the target cannot hide the silt that will be stirred up and moved in a 'home made' current. As the bottom silt/sand is caught in the target's wake it will deposit itself in the print, there will be a heavier build up in the toe end if walking forward or the heel end if walking backward.

**10005. Taking to the trees.** A target will only take to the trees if they are lightly laden and guess that they may be followed. This type of trail is extremely hard to follow; the tracker should look for the sign of bark disturbances either from hands, boots or equipment. Examine the connecting tree branches and mark the ground where it is possible to go from tree to tree. Searches must be made all round the tree and out past the branches for about two metres. The tracker must keep in mind: "They have to come down eventually".

**10006. Walking on hard ground or rocks.** This is the age-old method of covering ones tracks however, as explained previously, deposits from boots or feet can be left behind. Many rocks may be covered with moss; any kind of pressure will damage the plant and certainly force out the moisture that may be stored there. Moss has a very small and weak root system and is easily dislodged; these signs should also be looked for. Inevitably, if the target continues to 'rock hop' then eventually the trail will disappear.

**10007. Dragging bush behind to cover sign.** Whilst this method is talked about in movies and books, in reality, it only removes much of the information and not the fact that someone or something actually passed there. Regardless, the dragging of foliage leaves its own sign as the friction from passing over the ground dislodges parts of the brush that may not normally be in that position.

**10008. Wearing rags or vegetation on one's feet.** As for the same reason in the above paragraph, this method will remove some of the information but not the fact that someone or something has passed there. In fact, the rags tied to one's feet will accumulate more of the surrounding dust/sand or mud and be carried further than if one had normal footwear or bare feet. Like vegetation used in the camouflage of a soldier, vegetation used to deceive the tracker must be constantly changed with the habitat so as not to be out of place.

**10009. Walking in one another's prints to cover the number of the party.** This method speaks for itself and if done correctly, will achieve its purpose. Again, this method will remove some of the information but not the fact that someone moved there.

VTE-30

**ELECTIVE SERVICE TRAINING  
BASIC VISUAL TRACKING (VTE)**

**VTE 11 REVISION**

**3 Periods**

1. Revise VTE 9 with cadets using deceptive measures to conceal tracks.

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**ELECTIVE SERVICE TRAINING  
BASIC VISUAL TRACKING (VTE)**

**VTE 12 CONCLUSION**

**1 Period**

1. Understand the need for continued personal practice
2. Explain how the visual tracker can use their skills in FC
3. Explain how the Visual Tracker can use their skills in SV