

# **Ground & Urban Direction Finding Team Tasks**

**This Task Guide has been edited  
to include only the tasks for  
*Ground Team Member 2***



**24 May 2004**

Developed as part of the  
National Emergency Services Curriculum Project

**O-0104**  
**SETUP SHELTER**

**CONDITIONS**

You are a member of a ground team required to spend the night in the field. You have your field and base gear with you.

**OJECTIVES**

Setup a shelter considering the terrain and weather within 30 minutes.

**TRAINING AND EVALUATION**

**Training Outline**

1. Protecting yourself from the elements when remaining overnight in the wilderness should be a primary concern. The shelter should be placed and constructed to protect you from wind, water, and ground obstacles. Taking the time to ensure that you will have a relatively comfortable night's sleep will make you more alert and efficient for the next day's activities.

2. Shelter site preparation

a. Clear the entire area under the shelter to the bare ground. Remove any rocks, pebbles, branches or roots in the area. If they cannot be removed, find another site. Small bumps under your back at dusk will feel like boulders by dawn. Also check for wildlife such as snakes or insects that might already be there. This will prevent a nasty surprise in the middle of the night.

b. In order to preserve warmth, it is strongly suggested that you re-cover the shelter site with loose leaves, pine needles, etc. and cover with a tarp. A good layer of leaves will act as a mattress and insulation. Remember your body heat is being transferred to the earth while you are sleeping, not the other way around. Insulation will keep you warm and comfortable overnight.

c. Point the opening of the shelter away from or broadside to the wind when constructing it. This will prevent a 'ballooning' effect when the wind gusts. It will also prevent rain from being blown into the shelter opening and onto you.

d. Always suspect heavy rains overnight. Ensure that your shelter is on high ground, not in a dry wash or gully. Dig a four inch deep trench around the perimeter of your shelter with an additional runoff trench pointing down hill. Flowing water will go into the trench and around your shelter instead of under or through it.

**Additional Information**

More detailed information on this topic is available in Chapter 4 of the Ground Team Member & Leader Reference Text.

## Evaluation Preparation

**Setup:** Ensure the student has his base and field gear. If two students share a shelter, test them together. The students may use any item in his field gear, including this manual, while being tested.

**Brief Student:** Tell the student to choose a spot nearby and correctly set up their shelter.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
The individual:		
1. Identifies the wind direction in the shelter area	P	F
2. Builds an adequate trench around shelter	P	F
3. Ensures adequate drainage by choosing high ground or digging a trench	P	F
4. Builds shelter with opening away from wind	P	F
5. Completes all steps within 30 minutes (45 if a trench was dug)	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0202**  
**MEASURE DISTANCE WITH PACE COUNT**

**CONDITIONS**

Your team has been given a point to travel dismounted. You have been designated the pace person. You must ensure that the team travels the required distance and does not overshoot.

**OJECTIVES**

Successfully move the specified number of meters up along the route using your pace count +/- 50 meters.

**TRAINING AND EVALUATION**

**Training Outline**

1. A pace is equal to one natural step, about 30 inches long for an average adult male. In order to measure distance, you must know your pace count, which is the number of paces it takes you to cover 100 meters. You do this by measuring your pace over a pre-measured course.

a. The terrain of the course should be similar to the terrain you will be walking over on the mission. You will cover a lot more distance on a paved road than you will across rough terrain.

b. The course should be between 100 and 600 meters long, in even multiples of 100. (If the course is 600 meters long, divide your total paces by 6 to determine your 100 meter pacecount. If the course is 300 meters long, divide by 3, etc.)

2. To use your pace count:

a. Determine how far you have to travel in meters

b. Calculate how many paces this is.

1) For every hundred meters you must travel, add your pace count.

2) For the last fraction of a hundred meters, use a equal fraction of your pace count.

3) EXAMPLE: If your pacecount was 110 and the distance you had to travel was 325 meters:

$$\begin{array}{r} 110 \text{ paces (100 meters)} \\ 110 \text{ paces (100 meters)} \\ 110 \text{ paces (100 meters)} \\ + \quad 28 \text{ paces (25 meters is } 1/4 \text{ of 100 meters, so } 1/4 \text{ of your pacecount is about 28)} \\ \hline \mathbf{358 \text{ paces (325 meters)}} \end{array}$$

c. Adjust this pace count for the following factors (a shorter pace means more paces in 100 meters).

1) Slopes. Your pace will lengthen on a downslope and shorten on an upgrade. Keeping this in mind, if it normally takes you 120 paces to walk 100 meters, your pace count may increase to 130 or more when walking up a slope.

2) Winds. A head wind shortens the pace and a tail wind increases it.

3) Surfaces. Sand, gravel, mud, snow, and similar surface materials tend to shorten the pace.

4) Elements. Snow, rain, or ice cause the pace to reduced in length.

5) Clothing. Excess clothing and boots with poor traction affect the pace length.

6) Visibility. Poor visibility, such as fog, rain, or darkness, will shorten the pace.

d. Begin walking, and keep track of the distance you travel. Do not try to remember the count in your head; use a technique like one of the following:

1) Put a pebble in your pocket every time you have walked 100 meters according to your pace count.

2) Tie knots in a string.

3) Put marks in a notebook.

4) Pace counter string.

### **Additional Information**

More detailed information on this topic is available in Chapter 5 of the Ground Team Member & Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Clearly mark a route at least 500 meters long. It is best if this route has sections on different types of terrain. Put a numbered marked at the end point. Then put other numbered markers before and after the end point markers along the route. Keep the exact number and locations of these markers secret.

**Brief Student:** Put the student at the start point. Show him the route markings, and what the end markers looks like. Give him the distance to the end point, and tell him go that distance, get the number off the marker, and return with that number.

### **Evaluation**

#### Performance measures

#### Results

1. Correctly identifies the end marker, or another marker within 50 meters of the end marker. P F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0203**  
**NAVIGATE PAST AN OBSTACLE**

**CONDITIONS**

Given a compass. You are moving on foot following an azimuth and pace count. You encounter an obstacle that you must go around, while continuing to keep track of your azimuth and pace count.

**OBJECTIVE**

The team member "boxes" his steps around the obstacle, returns to the same azimuth, and continues to the destination point.

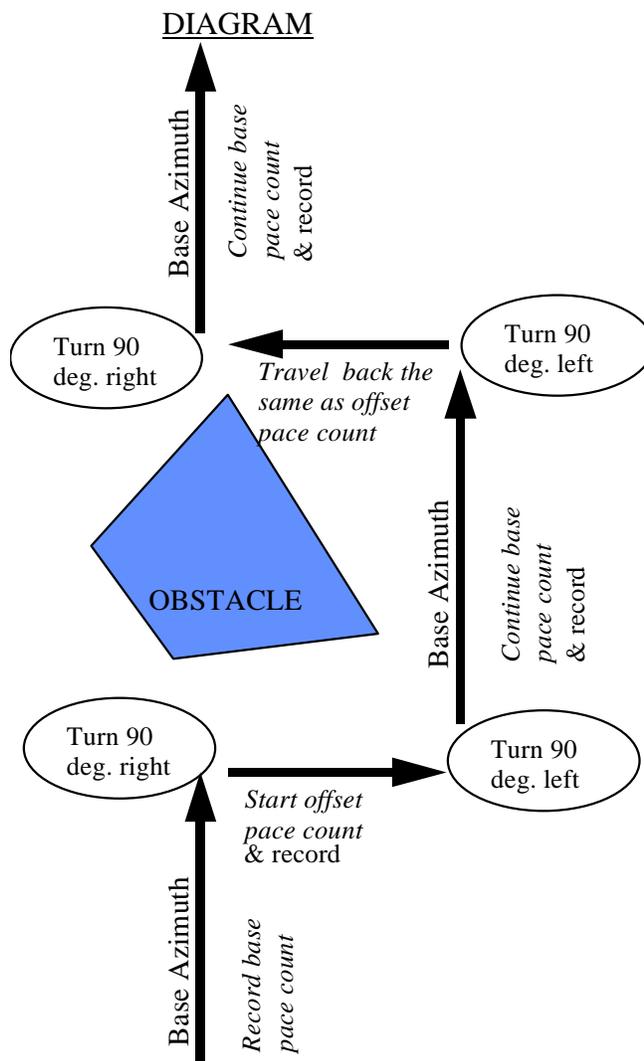
**TRAINING AND EVALUATION**

**Training Outline**

1. Spot the obstacle and halt.
2. Record pace count up to this point (hereafter called your traveling pace count)
3. Determine if it is easier to go right or left around the obstacle.
4. If you decide to go right (if you go left, switch all references to left and right):
  - a. Using the compass, turn 90 degrees to the right
  - b. Walk in that direction, starting a new pace count from zero (called the lateral pace count). Continue walking until you have moved far enough right to get around the obstacle.
  - c. Halt and record how far you've walked in this direction.
  - d. Turn left back to your original azimuth (the one you were on when you ran into the obstacle).
  - e. Look up the pace count you were at when you spotted the obstacle and halted (your traveling pace count).
  - f. Start walking along your original azimuth, adding your steps to your traveling pace count.
  - g. When you are clear of the obstacle on your left, halt and record your total traveling pace count.
  - h. Using the compass, turn left 90 degrees. Look up your lateral pace count (the number of steps you moved to the right of the obstacle).
  - i. Walk in this direction, starting a new pace count from zero. When you have walked the same distance as your recorded lateral pace count, halt. You should now be on the direct opposite side of the obstacle from where you started.
  - j. Turn right back to your original azimuth.

5. Look up your total traveling pace count.

6. Start walking along your original azimuth, adding your steps to your total traveling pace count. Continue on to your destination.



*Example of Bypassing an Obstacle*

### **Additional Information**

More detailed information on this topic is available in Chapter 5 of the Ground Team Member & Leader Reference Text.

## Evaluation Preparation

**Setup:** Set up a start and end point at least 400 meters apart in a wooded area. Clearly mark the destination point with a brightly colored coffee-can or similar marker hanging at eye level. Ensure there is point obstacle (pond, building, etc.) along the route of travel. Provide the ground team member with a compass, piece of paper, pencil, and the azimuth and distance to the destination. Ensure there is a point obstacle (pond, building, etc.) along the route of travel.

**Brief Team Leader:** Tell the team leader to move to the destination point. Warn him that there will be an obstacle along the way that must be navigated around.

## Evaluation

<u>Performance Measures</u>	<u>Results</u>	
1. Identifies the obstacle and halts and records pace count.	P	F
2. Turns 90 degrees right (left) and moves clear of the obstacle and records pace count.	P	F
3. Turns 90 degrees to the left (right) to the original azimuth and continues the original pace count until the obstacle is cleared while recording the pace count.	P	F
4. Turns 90 degrees to left (right) and moves the same distance moved in step 2.	P	F
5. Turns 90 degrees and continues from the original pace count. (sum of 1 + 3)	P	F
6. Locates the destination point.	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**IDENTIFY THE MAJOR TERRAIN FEATURES ON A MAP**

**CONDITIONS**

Given a objective topographical map

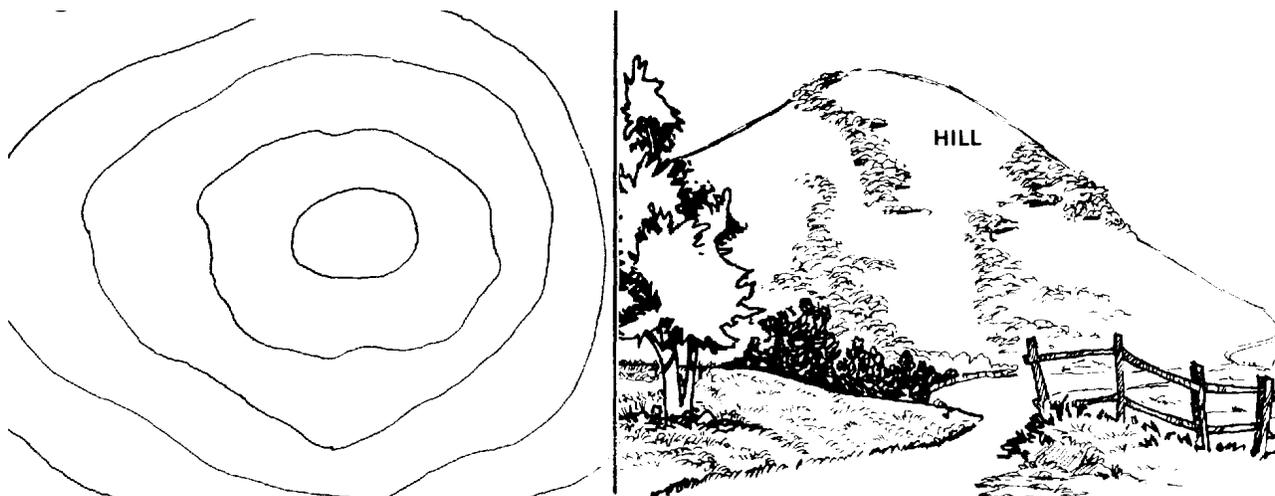
**OBJECTIVES**

Correctly identify the five major terrain features on the map.

**TRAINING AND EVALUATION**

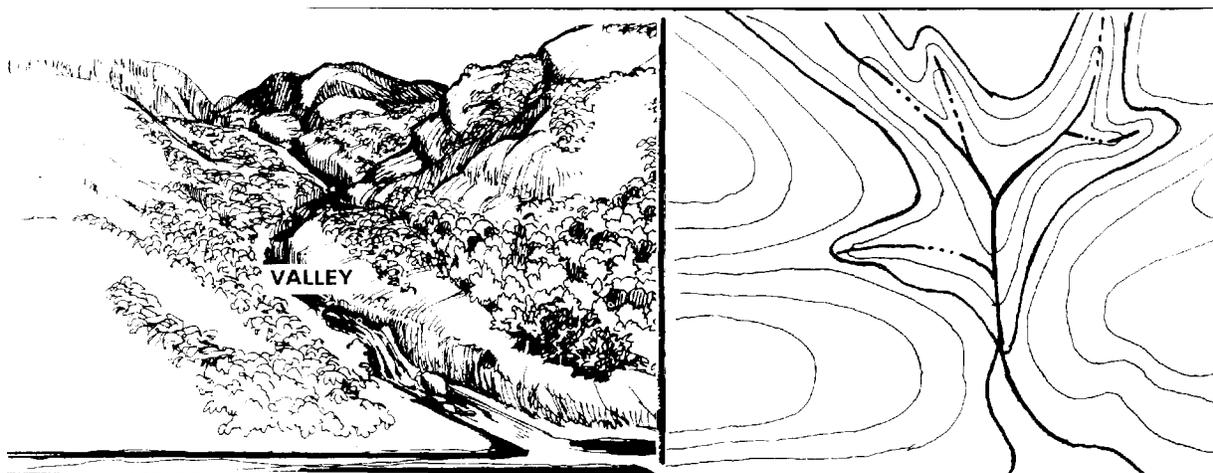
**Training Outline**

1. Hill -- A point or small area of high ground. From the hilltop, terrain slopes down in all directions. On the map a hill is depicted by contour lines forming concentric circles.

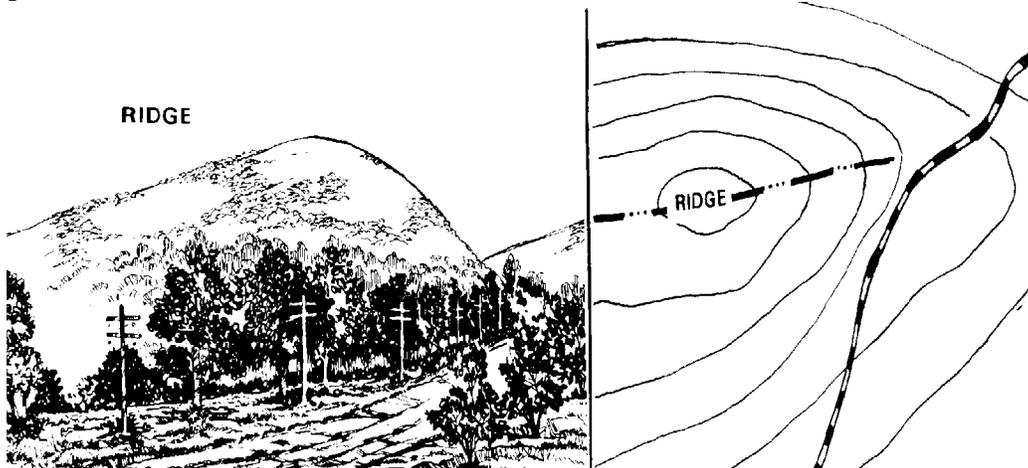


*A hilltop on the map (left) and in the wilderness (right)*

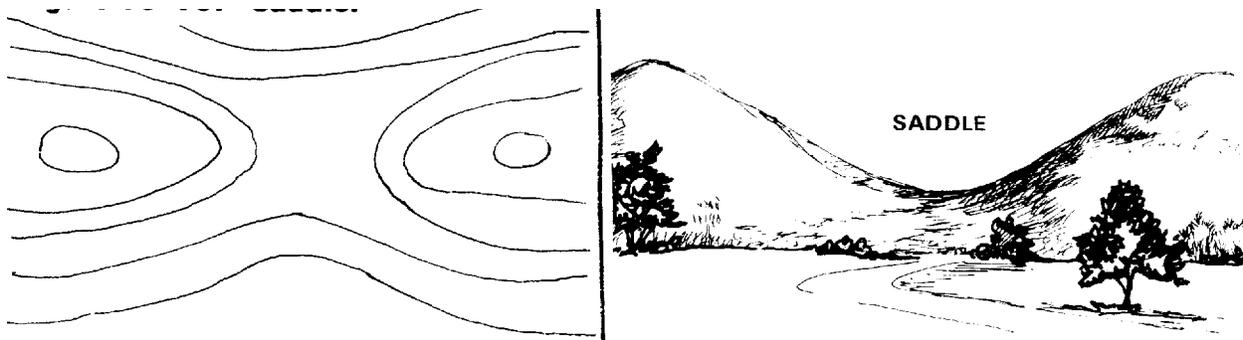
2. Valley -- Terrain goes up in three directions, and down in one, usually a river or a stream flows in it.



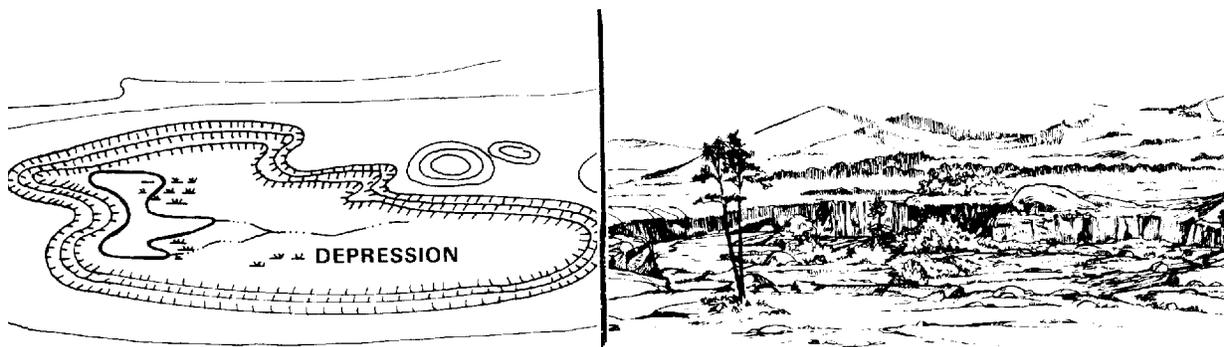
3. Ridge -- A line of high ground with height variations along its crest. The terrain slopes down in three directions and up in one.



4. Saddle -- A dip or low point, usually along the crest of a ridge. Terrain goes down in two directions and up in the other two.



5. Depression -- A low point or hole in the ground. Terrain goes up in all directions. Hash marks indicate decreasing elevation.



### Additional Information

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** On an appropriate topographical map, circle an example of each major terrain feature.

**Brief Student:** Tell the student to identify the circled items.

## Evaluation

### Performance measures

### Results

The student correctly identifies the following:

1. Hill	P	F
2. Valley	P	F
3. Ridge	P	F
4. Saddle	P	F
5. Depression	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0210**  
**IDENTIFY TOPOGRAPHIC SYMBOLS ON A MAP**

**CONDITIONS**

Given a objective topographical map

**OBJECTIVE**

Correctly identify the topographical symbols, colors, and marginal information on a map.

**TRAINING AND EVALUATION**

**Training Outline**

1. In order to navigate using a map, the ground team member must know how terrain features are depicted on a map.
2. Ideally, every feature on the Earth's surface can be shown on a map in its true shape and size. Unfortunately this is impossible due to the limitations on detail that can be legibly transferred to paper. The amount of detail that can be shown on a map varies as the scale of a map. Small scale map such as 1:24,000 USGS quadrangles will show considerably more detail then 1:500,000 aeronautical sectionals.
3. Symbols are used on topographical maps to show features and details. On most topographic map the following colors are used to classify these symbols.
  - a. Black -- manmade or cultural features such as buildings, roads, railroads, names and boundaries.
  - b. Blue is used for water or hydrographic features such as lakes, rivers, canals and swamps.
  - c. Brown -- used for relief or contour and to show relief features such as cuts, fills, sand dunes, and glaciers.
  - d. Green -- is used for woodland cover and vegetation such as scrub, vineyards, forests, etc.
  - e. Red -- emphasizes important roads and highways.
  - f. Purple -- used to show revisions from previous map editions.
4. The shape and size of an object on the map will indicate it's actual shape and size on the ground. A black solid square is a building and an irregular blue item is a lake or pond. Interpreting symbols is a matter of knowing what color it is and how that relates to the above list, and matching the symbol to the map's legend. The map's legend is table of symbols and what they represent. It is usually located on the bottom of the map sheet in the marginal information or it is published separately for the objective types of topographic maps in use.
5. The marginal information on a map shows the mapsheets relationship to the rest of the Earth. Marginal information includes:
  - a. The geographic location of the map.

- b. The name of the mapsheet and adjoining mapsheets.
- c. Agency preparing the map and date of printing.
- d. Scale of the map and bar scales for meters, yards, and miles.
- e. Contour interval of contour lines.
- f. Grid to magnetic north declination diagram, or simply the magnetic variation angle.

### **Additional Information**

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** On an appropriate topographical map, circle an example of each item of marginal information and an item shown on the map by color.

**Brief Student:** Tell the student to identify the circled items.

### **Evaluation**

<u>Performance measures</u>	<u>Results</u>	
1. Identifies the sheet name	P	F
2. Identifies the contour interval and lines	P	F
3. Identifies the G-M angle declination diagram	P	F
4. Identifies the legend	P	F
5. Identifies the bar scales	P	F
6. Identifies the adjoining sheets reference	P	F
7. Identifies man-made features	P	F
8. Identifies hydrographic (water) features	P	F
9. Identifies vegetation features	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0211**  
**DETERMINE ELEVATION ON A MAP**

**CONDITIONS**

Given a objective topographical map. Your team is has been ordered to move dismounted to a destination. Before beginning movement, you want to get an idea for the “ups and downs” of the terrain you will be traveling over. Or, your team is having problems contacting mission base, and you wish to find a high point to transmit form.

**OBJECTIVE**

Correctly identify the elevation of any point on the map +/- 1/2 the contour interval.

**TRAINING AND EVALUATION**

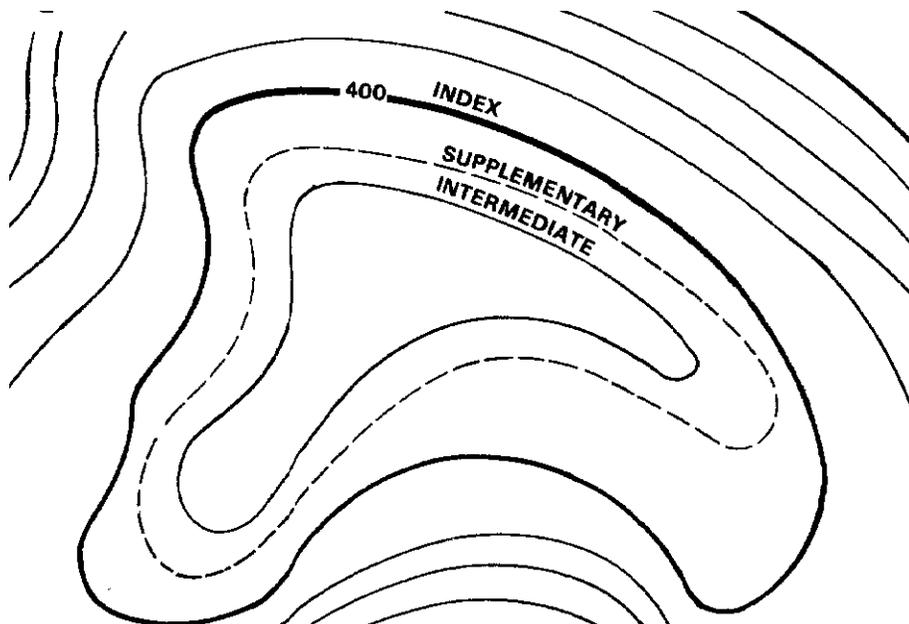
**Training Outline**

1. Topographical maps depict the elevation of the ground through the use of contour lines. A contour line represents an imaginary line on the ground, above or below sea level connecting points of equal elevation. Contour lines are normally brown. There a three types of contour lines:

a. Index Contour Lines are heavier than other lines, and are labeled with a number. This number is the elevation of that line, in feet, yards or meters. The top of the elevation number always points uphill.

b. Intermediate Contour Lines are the solid lines that fall between Index Contour Lines. These lines do not have the elevation listed on them, but represent increments of the *contour interval* (see 2, below).

c. Supplementary Contour Lines. These contour lines resemble dashes. They show sudden changes in elevation of at least one-half the contour interval.



*Index, Intermediate, and Supplementary contour lines. As indicated by the orientation of the “400,” the terrain slopes down towards the center of this area.*

2. Before you can read the contour lines, you must know the contour interval of the map. The contour interval will be printed in the marginal information, near the map legend. The contour interval is the number of feet, meters or yards that each intermediate contour line represents. (EXAMPLE: if the contour interval is 10 meters, then the Index Contour line marked with “100” is 100 meters above sea level, and each intermediate line above it is 10 more meters)

3. To determine the elevation of a point on the map:

a. Determine the contour interval of the map, and the unit of measure used (feet, meters or yards).

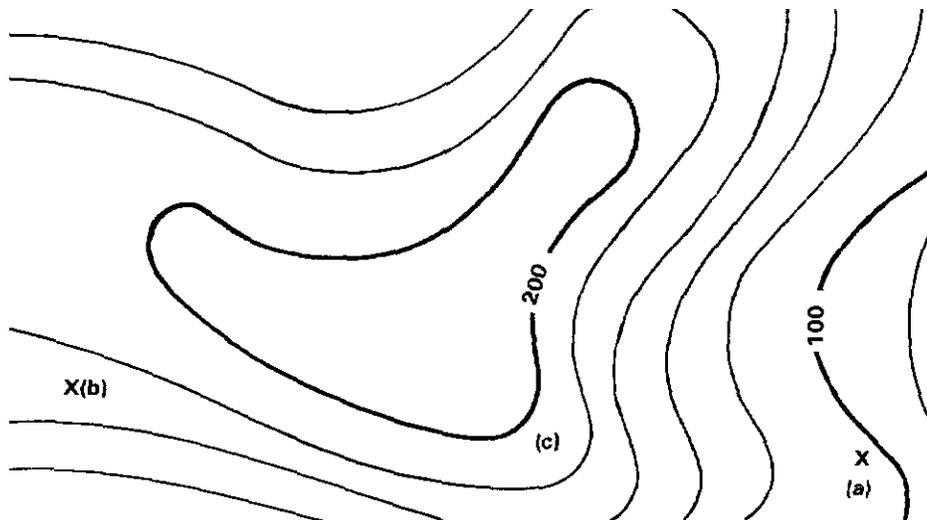
b. Find the numbered index contour line nearest the point.

c. Determine if you are going from lower elevation to higher, or vice versa. For example, if the point was somewhere between the “500” and the “600” Index contour lines, you know the terrain gets higher as it gets closer to the “600” line.

d. Start at the Index contour line below the point (in the above example, the “500” line) and count the number of Intermediate contour lines between the lower Index contour line and the point. For each intermediate line, add the contour interval.

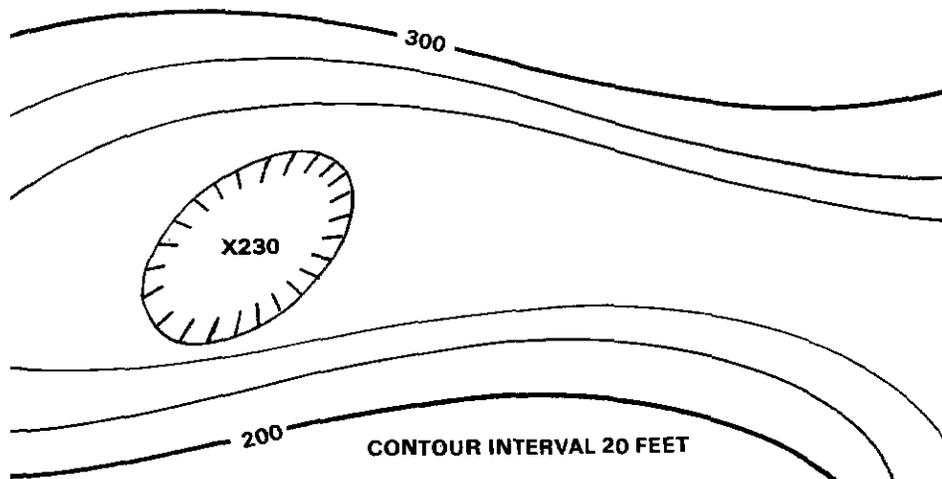
e. If the point is halfway between two contour lines, add half the contour interval.

f. If the point is a hilltop, determine the elevation of the contour line closest to the hilltop and add half the contour interval.



*EXAMPLE: If the above map has a contour interval of 20 meters, point (a) is slightly above 100 meters in elevation, point (b) is at approximately 170 meters, and point (c) is at approximately 190 meters.*

4. Depressions. Depressions (the opposite of a hilltop) are often marked with small hatchmarks on the contour line pointing inward towards the center of the depression. To determine the depth of the depression, determine the elevation of the innermost contour line of the depression and *subtract* half the contour interval.



Given the contour interval of 20 feet, the rim of the depression is at an elevation of 240 feet, and the center of the depression is at 230 feet.

### Additional Information

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

### Evaluation Preparation

**Setup:** On an appropriate topographical map, mark five points on the map, including one hilltop and one depression.

**Brief Team Leader:** Tell the team leader to determine the elevation of all five points.

### Evaluation

#### Performance measures

#### Results

1. Identifies the elevation of four of the five points +/- 1/2 the contour interval

P F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0212**  
**MEASURE DISTANCE ON A MAP**

**CONDITIONS**

Given a objective topographical or aeronautical map with bar scales, a piece of paper, pencil, and straight edge. You are away from mission base, mounted or dismounted, and must move to another location. You have plotted your position on the map, and the position to which you are to move. Now you want to determine the distance you will have to move.

**OBJECTIVES**

1. Determine the straight-line distance between two points with no more than five percent error, within 2 minutes.
2. Determine the road distance between two points with no more than 10 percent error, within 2 minutes.

**TRAINING AND EVALUATION**

**Training Outline**

1. Background information:

- a. Distance can be straight line (if you are walking cross country) or along a curved road or path.
- b. Distance for mounted travel should be determined in miles, since car odometers are graduated in miles. Distance for walking should be determined in meters, so you can use your pace count. There are 0.62 miles in a kilometer (1000 meters) and 1600 meters in a mile.
- c. All topographical maps are drawn to scale (1:24,000:, 1:62,500:, etc.). This means that a one millimeter of map distance equals 24,000 millimeters (24 meters) ground distance for a objective 1:24,000 USGS quadrangle.

2. Methods of Measuring Straight-line Distance:

- a. One method of determining ground distance from a map is to use a ruler to measure the distance between two map points and multiply that by the scale factor. However, this involves doing somewhat complicated multiplication in the field.
- b. A simpler way is to use the bar scales located at the bottom of the map. These scales are usually printed in meters, yards, and miles. By taking the ruler or the edge of a piece of paper and mark on it the straight-line distance between the two map points. Then put the ruler or piece of paper under the appropriate bar scale and read the ground distance in the appropriate units.

3. To find the road distance between two points on a map, place a tick mark on edge of the piece of paper and then place the tick mark at the first point. Align the paper with the road edge until you come to a curve, mark the paper and the map at the curve. Pivot the paper so that it continues to follow the road edge to the next curve. Repeat the process until you get to the second point, where you make the final tick mark on the paper. At this point you can take the paper to the appropriate bar scales and determine the ground distance between the first and last tick marks. This will be the road distance between the two points on the map.

## Additional Information

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** On an appropriate topographical map, mark two points on the map as A and B (these points should be 3,000 to 4,000 meters apart in ground distance). On a road or trail on the map, mark two points C and D at least 3,000 meters apart ground distance. Give the student the map, a pencil, a strip of paper, and a ruler.

**Brief Student:** Tell the student to determine the straight-line distance between points A and B to within a 5 percent error and the road distance from C to D to within a 10 percent error.

## Evaluation

### Performance measures

### Results

The individual calculates the Straight-line Distance:

- |  |   |   |
|--|---|---|
| 1. Measures the straight line distance using the straight edge             | P | F |
| 2. Determines the straight-line distance on the bar scale within 5 percent | P | F |
| 3. Completes the above within 2 minutes                                    | P | F |

The individual calculates the Road Distance:

- |  |   |   |
|--|---|---|
| 4. Measures the road distance using the piece of paper             | P | F |
| 5. Determines the road distance on the bar scale within 10 percent | P | F |
| 6. Completes the above within 2 minutes                            | P | F |

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0213**  
**CONVERT BETWEEN MAP AND COMPASS AZIMUTHS**

**CONDITIONS**

Given a gridded map and an aviation map, each with magnetic variation information.

**OBJECTIVES**

Perform each of the following within one minute each: convert a magnetic azimuth to a grid azimuth, convert a grid azimuth to a magnetic azimuth, convert a magnetic azimuth to a true azimuth, and convert a true azimuth to a magnetic azimuth.

**TRAINING AND EVALUATION**

**Training Outline**

1. In order work with a map and compass, you must understand the concept of *Magnetic Variation (sometimes called declination)*:

a. There are 360 degrees in a circle, with 0° (which is also 360°) pointing north, 90° pointing east, 180° pointing south, and 270° pointing west.

b. There are actually three different “norths”: true, grid, and magnetic. You must be able to work with all three.

1) True North is the direction along the earth’s toward the north pole. Lines of longitude are “true north” lines, since they converge at the north pole. Aviation charts are “True North” maps.

2) Grid North is used by maps that are not gridded in longitude (such a military UTM maps). Grid lines are straight and do not converge at the north pole, so grid north can be different from true north, especially as you get near either pole.

3) Magnetic North is direction along the earth’s surface toward the north MAGNETIC pole. This is NOT the same as the north pole -- the north magnetic pole drifts slowly each year, and is never exactly at the north pole. In Maryland, for example, magnetic north is 10° - 11° off of True North. This is important, because your compass will point to magnetic north, but your map will either be drawn to true north or Grid North.

2. Converting from map to compass headings:

a. To convert between Magnetic North and True North on a True North Map:

1) Find the Magnetic Variation (sometimes called declination on non-aviation maps).

a) On an aviation chart, there will be magenta lines running generally from north to south on the chart with degree markings on them (for example “10° W”). Choose the line halfway between the two points you have marked on the chart.

b) On other maps, look to the legend. It should note the magnetic variation, or declination, of the map.

2) Note the number of degrees and whether it labeled East or West

3) To convert True (map) azimuths to Magnetic (compass) azimuths, remember the saying “EAST IS LEAST, WEST IS BEST”.

a) If the Magnetic Variation is East, *subtract* the Magnetic Variation from the True azimuth.

b) If the Magnetic Variation is West, *add* the Magnetic Variation from the True azimuth.

4) To convert Magnetic (compass) azimuths to True (map) azimuths, do the opposite of above.

a) If the Magnetic Variation is East, *add* the Magnetic Variation from the True azimuth.

b) If the Magnetic Variation is West, *subtract* the Magnetic Variation from the True azimuth.

b. To convert between Magnetic North and Grid North on a Grid North Map:

1) Find the Magnetic Variation (sometimes called declination on non-aviation maps or the G-M Angle (Grid-Magnetic) on military maps. This should be in the legend, or in a small box near the legend.

2) Note the number of degrees and whether it labeled East or West

3) To convert Grid (map) azimuths to Magnetic (compass) azimuths:

a) If the Magnetic Variation is East, *subtract* the Magnetic Variation from the True azimuth.

b) If the Magnetic Variation is West, *add* the Magnetic Variation from the True azimuth.

4) To convert Magnetic (compass) azimuths to True (map) azimuths, do the opposite of above.

a) If the Magnetic Variation is East, *add* the Magnetic Variation from the True azimuth.

b) If the Magnetic Variation is West, *subtract* the Magnetic Variation from the True azimuth.

### **Additional Information**

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Provide the student with a gridded topographical map and an aviation map. Ensure each map contains magnetic variation information. Mark a spot on each map. Provide the student with paper and a pencil or pen.

**Brief Student:** Tell the student that he will have one minute for each of four conversions, and may use paper and pencil for the math. Show the student the marked spot on each map. Tell him that the first two conversions are on the gridded topographical map. Then give the student a magnetic azimuth and ask him to tell you the grid azimuth. Then give him a grid azimuth and ask him to tell you the magnetic azimuth. Now tell him to use the aviation chart. Give him a magnetic azimuth and ask him to tell you the true azimuth. Finally, give him a true azimuth and ask him to tell you the magnetic azimuth.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Correctly converts a magnetic to a grid azimuth within 1 minute.	P	F
2. Correctly converts a grid to a magnetic azimuth within 1 minute.	P	F
3. Correctly converts a magnetic to a true azimuth within 1 minute.	P	F
4. Correctly converts a true to a magnetic azimuth within 1 minute.	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0215**  
**DETERMINE AZIMUTHS ON A MAP USING TWO POINTS**

**CONDITIONS**

Given a protractor, pencil, straightedge, and a map. You are away from mission base, and must move to another location. You have plotted your position on the map, and the position you are to move to. Now you want to determine the direction to move. Or, you have shot a magnetic bearing to a landmark, and wish to plot this bearing on a map from your position in order to verify the landmark.

**OBJECTIVES**

Within 2 minutes, the team leader determines the azimuth from one point to another on the map and converts it to the magnetic azimuth. Within 2 minutes, the team member must convert a magnetic azimuth to a grid azimuth and plot it from a known point on a map.

**TRAINING AND EVALUATION**

**Training Outline**

1. This task is essential for using a compass and map together. In order to navigate, you must be able to convert a compass heading to a line on a map, and convert a line on a map to a compass heading. Before you train on this task, ensure you can perform task O-0213, Convert Between Map And Compass Azimuths.
2. To determine a magnetic azimuth between two points on a map
  - a. The objective (protractor) method:
    - 1) Plot both points on a map.
    - 2) Draw a line between the two points (and beyond the second point if necessary to ensure the line is longer than the radius of the protractor).
    - 3) Position a protractor with the center point over the first point (your location), and ensure that the “0°” mark on the protractor points is aligned with north on the map (called grid north)
    - 4) Read the number off the protractor that is on the line. This is the map (either True or Grid, depending on the map) azimuth.
    - 5) Convert the azimuth to a magnetic azimuth (see separate task O-0213).
  - b. Alternate method for measuring azimuths without a protractor. First draw the line between the points as described above, and then:
    - 1) With an orienteering (Silva) compass:
      - (a) Place the compass on the map with one of the baseplate side edges on the line you drew.

(b) While keeping the baseplate still, rotate the compass dial until the “N” on the dial points to grid (or true) north on the map.

(c) Read the number on the compass dial that is in line with “Read Bearing Here” arrow on the baseplate. This is your grid (or true) azimuth).

2. With a lensatic compass (this is less accurate than using a protractor or orienteering compass):

(a) Orient the map to magnetic north (see separate task O-0217)

(b) Place the compass on the map so that the straightedge on the left side of the compass on the line you drew (if your compass does not have a straightedge, use the sighting wire. This is less accurate).

(c) Read the number on the compass dial under the fixed black index line on the glass. This is your magnetic azimuth. If you need a true or grid azimuth, convert as needed (see separate task O-0213).

4. To plot an azimuth on a map.

a. Using a protractor:

1) Ensure you are working with a grid azimuth. If not, convert it (see separate task O-0213).

2) Mark the location you wish to plot the azimuth from on the map.

3) Place the center hole of the protractor on that point, with the 0 degree mark aligned with grid north on the map.

4) Place a mark by the point on the protractor corresponding with the grid azimuth.

5) With a straightedge, connect the two marks.

b. Using an orienteering compass.

1) Ensure you are working with a grid azimuth. If not, convert it (see separate task O-0213).

2) Rotate the compass dial until the azimuth you want to plot is in line with the “Read Bearing Here” line on the base plate.

3) Mark the location you wish to plot the azimuth from on the map.

4) Without rotating the compass dial. Place the center of the compass dial over that point, with the 0 degree (North) mark on the compass dial, oriented with true north.

5) Place a mark on the map at the end of the “Read Bearing Here” line.

6) With a straightedge, connect the two marks.

c. Using a lensatic compass (less accurate):

1. Orient the map to magnetic north (see separate task O-0216)
2. Ensure you are working with a magnetic azimuth. If not, convert it
- 3) Mark the location you wish to plot the azimuth from on the map.
- 4). Place one end of the straight edge on the side of the compass on the mark you made on the map.
- 5) Keeping the straight edge of the compass on the mark, rotate the compass until the index mark lines up with the magnetic azimuth you wish to plot.
- 6) Draw a line along the compass straight edge. (If your compass does not have a straightedge, you can use the sighting wire, but this is not very accurate).

### **Additional Information**

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Provide the individual with a protractor, a pencil, a straightedge, and a map with a two points marked on it. Show him which is the start point, and which is the point he wants to go to.

**Brief Team Leader:** Tell the ground team leader to tell you the magnetic azimuth from the start point to the finish point. Then give him a magnetic azimuth, and instruct him to plot that from the same start point on the map.

## Evaluation

### Performance Measures

### Results

NOTE: IF THE MAP IS A TRUE NORTH MAP, THE MEMBER SHOULD CONVERT TO AND FROM TRUE NORTH, OTHERWISE, THE MEMBER SHOULD CONVERT TO AND FROM GRID NORTH.

The individual determines a Magnetic Azimuth:

- |  |   |   |
|--|---|---|
| 1. Determines the correct true (or grid) azimuth from the start to the finish point +/- 2 degrees. | P | F |
| 2. Correctly converts it to a magnetic azimuth   | P | F |
| 3. Performs steps 1 and 2 within 2 minutes   | P | F |

The individual Plots a Magnetic Azimuth:

- |  |   |   |
|--|---|---|
| 4. Correctly converts it to a grid (or true) azimuth | P | F |
| 5. Plots it from the start point +/- 2 degrees       | P | F |
| 6. Performs steps 4 and 5 within 2 minutes           | P | F |

Student must receives a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

## **O-0216**

# **ORIENT A MAP TO THE GROUND USING TERRAIN ASSOCIATION**

## **CONDITIONS**

Given a objective topographical map in the daylight

## **OBJECTIVES**

Orient the map to North to within 30 degrees within 4 minutes.

## **TRAINING AND EVALUATION**

### **Training Outline**

1. In order to use your map for navigation, you must “orient” the map to the ground. A map is considered oriented when it is in a horizontal position with it's north and south corresponding to north and south on the ground. This allows you to easily see the terrain on the map as it corresponds to the terrain around you. Orienting the map can be quickly done without a compass if there are prominent terrain features nearby.

2. To orient the map:

a. Look at the map and the ground to find two or more terrain features common to both. Examples are hills, saddles, valleys, ridges or cultural features such as buildings or radio towers.

b. Rotates the map until the terrain features are aligned with the map. (For example, if there is a tower to your right and the mountain in front of you, rotate the map until the tower on the map is on the right and the mountain on the map is towards the top). By aligning the terrain features on the map with the same terrain features on the ground, the map is oriented.

c. Whenever possible, use three features, to ensure you do not accidentally orient the map 180 degrees out.

### **Additional Information**

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Choose an outdoor location with good visibility and readily identifiable terrain features. Provide a map of the area that lists those terrain features to the student.

**Brief Student:** Tell the student orient the map to the ground. Tell him to describe out loud all the steps he takes.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Identifies three prominent terrain features	P	F
2. Orients the map to north to within 30 degrees	P	F
3. Completes all steps within 4 minutes	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0217**  
**ORIENT A MAP TO NORTH USING A COMPASS**

**CONDITIONS**

Given a objective topographical map and a compass in the daylight

**OBJECTIVES**

Orient the map to North to within 10 degrees in less than 4 minutes.

**TRAINING AND EVALUATION**

**Training Outline**

1. You want to use your map for navigation. First, you must “orient” the map to the ground. A map is considered oriented when it is in a horizontal position with its north and south corresponding to north and south on the ground. This allows you to easily see the terrain on the map as it corresponds to the terrain around you. Orienting the map with a compass is more accurate than using terrain association, and can be done when there are no visible prominent terrain features.

2. To orient the map using a compass:

a. Hold the map horizontally or place on a flat surface (DO NOT USE THE HOOD OF A VEHICLE OR ANY OTHER METAL SURFACE -- IT MIGHT ATTRACT THE COMPASS NEEDLE)

b. Look at the map and define the north/south grid lines and magnetic variation (see task O-0213 - Convert Between Map And Compass Azimuths). Determine where magnetic north is on the map

c. Hold the compass in front of you such that the north seeking arrow is free to rotate. Rotate your body until the arrow is pointing directly in front of your body.

d. Rotate the map until magnetic north on the map is pointing the same direction as the compass arrow.

e. Verify the map’s orientation by checking the location of prominent terrain features.

**Additional Information**

More detailed information on this topic is available in Chapter 5 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Provide a map of the area and a compass to the student.

**Brief Student:** Tell the student to orient the map to magnetic north using the compass. Tell him to describe out loud all the steps he takes.

### Evaluation

<u>Performance measures</u>	<u>Results</u>	
The individual:		
1. Identifies the magnetic north on the map	P	F
2. Locates magnetic north per the compass	P	F
3. Orients the map to magnetic north within 10°	P	F
4. Checks map orientation with terrain association	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0401**  
**WORK WITH CANINE SEARCH TEAMS**

**CONDITIONS**

You are part of a ground team that has been assigned to work with a canine search team on a sortie.

**OBJECTIVES**

Position and conduct yourself to remain safe and avoid interfering with the dog team's work. You may provide radio communications support for the canine handler.

**TRAINING AND EVALUATION**

**Training Outline**

1. CAP will often work with canine search teams, including those of the police and volunteer agencies. Dogs are especially useful in missing persons searches. CAP ground teams must know how to work with the dog team without interfering with the dog's search abilities.
2. Search dogs fall into three categories: tracking, trailing and air-scenting.
  - a. There are specialized air-scent dogs for underwater, avalanche, cadaver, drug, and weapons searches. The rules for working with any specialized dog teams are the same. Air-scent dogs are deployed downwind of the search area and are trained to detect human scents traveling on the wind. These dogs may also work at times in the tracking or trailing mode. These dogs are usually the preferred resource.
  - b. Tracking dogs are trained to follow a specific scent and are not necessarily affected by other humans. An article of the missing person's clothing is held under the dogs nose until he 'gets the scent'. The dog is then capable of tracking that scent on the ground through the woods to the missing person. They can be confused by "additional scents" that mask the target scent. These dogs may also be confused by a broken track. For this reason that this type of dog is deployed early in the missing person search, i.e. before the target scent fades or the search area is filled with other search resources.
  - c. Trailing dogs are similar to tracking canines, but pick up scent that originates in a addition to the original track. A person brushes against items and leaves a trail of dead skin cells and other items fallen off from the body.
3. Search dogs and their handlers are highly trained search resources. The dogs are not always considered friendly or as pets.
4. Search dog teams have a approximate 50% to 80% probability of detection (POD) on any given sortie for a well trained dog. Good handlers will have a more accurate estimate of their team's POD.
5. The five rules for working with dog teams are:
  - a. Coordinate your team's actions with the dog handler.
  - b. Clear the upwind search area of any personnel and stay downwind of the dog and handler at all times. (especially important when working with air-scent dogs)

c. When searching or traveling with an air-scent team, keep a good distance behind the dog and handler (as defined by the handler) and allow them to work unimpeded.

d. When in doubt, follow the instructions of the dog handler.

e. Unless the handler specifically allows it, keep all personnel away from the search dogs in the field and at base camp. DO NOT ALLOW ANYBODY TO FEED OR PLAY WITH THE DOGS. KEEP ALL MOTOR VEHICLES AWAY FROM THE DOGS AS THE EXHAUST DEADENS THE SCENT AND SENSE OF SMELL. DO NOT SMOKE AROUND DOGS.

### Evaluation Preparation

**Setup:** None

**Brief Student:** Tell the student to describe the deployment and uses of an air-scent dog, tracking dog and trailing dog, and then list four rules for working with dog teams.

### Additional Information

More detailed information on this topic is available in Chapter 7 of the Ground Team Member & Leader Reference Text.

### Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Describes the deployment and uses of an air-scent dog	P	F
2. Describes the deployment and uses of a tracking dog	P	F
3. Describes the deployment and uses of a trailing dog	P	F
3. List four of the five rules for working with dog teams	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0416**  
**PLAN SEARCH LINE OPERATIONS**

**CONDITIONS**

You are leading a team in the field, and are assigned to grid search an area.

**OBJECTIVE**

Conduct an effective team grid search of the assigned area.

**TRAINING AND EVALUATION**

**Training Outline**

1. The ground search function is the most physically demanding and trying operation that a ground team must be prepared to conduct. This is where ground team leaders spend most of their training time and leadership ability. In order to effectively search an area, the team leader must make several decisions based on his assignment, the time available, and his team.

2. Team Leaders will usually be given a section of ground to search and a briefing on how thoroughly the area must be searched. The particulars of actually performing the operation are at the discretion of the team leader based on his evaluation of the terrain, visibility, and his team. The team leader needs to decide:

- a. What search pattern to use
- b. What search formation to use
- c. What interval to have between team members
- d. From what directions to sweep the search area.
- e. Where the team is to stop, turn, or regroup.
- f. Panic direction if a team member gets lost
- g. What hazards to avoid in the area

3. **SEARCH PATTERNS.** The terrain will usually dictate what search pattern is used to sweep an area. The most common ones are:

a. The creeping line - is the most commonly used pattern. The team starts in one corner of the search area, proceeds to the adjacent corner, offsets the line and proceeds across the search area.

b. The expanding rectangle - is used for small search areas where the target is believed to be and a high probability of detection is desired. To execute this pattern requires extremely good compass/mapwork, pace counting, and blazing abilities. The modified expanding rectangle is used when the search area is on one side of a linear feature such as a road or river. If a repeated search is made, the center position should be made diagonally from the first leg. This type of search pattern is often used after a clue is found.



b. Spacing team members such that when on line any given team member can barely see the team member two positions to his left or right gives approximately a 75-80% probability of detection.

c. Spacing team members such that when on line any given team member can barely see the team member three positions to his left or right gives approximately a 95% probability of detection.

Using these rules allows the team leader to expand or contract his team spacing as required to maintain the assigned POD through varying terrain.

6. **SEARCH DIRECTION.** An important decision is from what direction to head the team in order to cover the area. In flat terrain, almost any direction will do, so the team leader can choose the long axis of his search area to minimize turning points or choose to follow surrounding roads as guides. In hilly terrain, it is best to search along the contour of the ground. Trying to search up and down hill will unnecessarily fatigue team members. A search direction may already be assigned by the ground branch director, particularly if the area has been previously searched in another direction.

7. **HAZARDS.** Before starting a search the team leader must conduct at least a map study and if possible a quick inspection of the assigned area for terrain hazards. Team members should be briefed on all hazards they can expect to encounter to including: rock fields, cliffs, thick underbrush, mine shafts, etc.

8. **'PANIC' AZIMUTH.** The team leader must also pick the points or terrain features that determine where his team is to stop searching and turn in a different direction. Also determine a compass azimuth that will lead an individual out of the search area in a safe direction, preferably toward a linear feature. Team members are briefed on this 'panic azimuth' and told to follow it if they become lost.

### **Additional Information**

More detailed information on this topic is available in Chapters 7, 18 and 19 of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Provide the team leader with a map the search area. A topographical map is preferable, or a copy of one.

**Brief Team Leader:** The team leader is to develop a plan for searching the entire area based on having a ten man team an assigned POD. He will describe this plan in detail to the instructor. The team leader has ten minutes to prepare his plan.

### **Evaluation**

<u>Performance measures</u>	<u>Results</u>	
1. The team leader determines the correct search pattern	P	F
2. The team leader determines the correct search formation	P	F
3. The team leader determines the correct interval	P	F

- |   |   |   |
|---|---|---|
| 4. The team leader evaluates and finds safety hazards               | P | F |
| 5. The team leader defines end, turning points and search direction | P | F |
| 6. The team leader determines a panic azimuth                       | P | F |

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0417**  
**ORGANIZE A SEARCH LINE**

**CONDITIONS**

You are leading a team in the field, and are assigned to grid search an area. You have already planned how you will search the area.

**OBJECTIVE**

Organize the assigned team members into a search line and brief them on the search.

**TRAINING AND EVALUATION**

**Training Outline**

1. Before a team moves through the woods on a search, the team members must be organized into an effective unit rather than a bunch of individuals. The team leader must perform this organization and brief his people with the required knowledge to properly perform their jobs.
2. The team leader should perform the following actions:
  - a. Line team members up in the required search formation. Assign post numbers to each individual.
  - b. Assign team members to mark the search route. Usually one or both end members of the line (also usually the most experienced team members). Check to make sure marking materials are available, and instruct on what colors to use.
  - c. Assign team members to the roles of the base man (either compass bearer or terrain feature follower) and pace keeper (if required). Remember, the team leader is still responsible for determining the team's location. The compass and pace keepers are there as backups.
  - d. Assign a team member to be the communicator (if the team leader doesn't perform this function), and team members to carry first aid kits, rope, etc. Take into account the skills and carrying capacity of the team members.
  - e. Determine where the team leader will position himself. A team leader can be centered on and behind the team for maximum control, with the base man in order to direct the teams movement, or in front as a scout.
  - f. Brief the team on the following items:
    - 1) The chain of command for the team (who's in charge if the team leader is absent or injured).
    - 2) Search interval and pattern
    - 3) Turning and end points of travel
    - 4) Terrain hazards and panic azimuth
    - 5) Actions on clue find or target find.

- 6) Where the team leader will be located.
- 7) Specific clues to search for (remind the team what the target is).
- 8) Review signals to be used to control the line (commands, whistles, etc.).

### **Additional Information**

More detailed information on this topic is available in Chapter 7 of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Provide the team leader with a 5 to 7 people to act as a search team. Provide the team leader with a map of the area with the search area marked, including turning and stopping points.

**Brief Team Leader:** Brief the individual that he is the team's leader. Present him with or have him prepare a plan to search his assigned area. The team leader is to organize the people into a search formation and brief them on the assigned sortie.

### **Evaluation**

Performance measures	Results
1. The team leader lines people up and assigns post numbers	P F
2. The team leader assigns tasks to team members	P F
3. The team leader briefs on end and turning points	P F
4. The team leader briefs on safety hazards and panic azimuth	P F
5. The team leader briefs on his location during the search	P F
6. The team leader briefs on the chain-of-command	P F
7. The team leader briefs on specific search clues	P F
8. Reviews signals used to control the line.	P F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0418**  
**CONTROL A SEARCH LINE**

**CONDITIONS**

You are a ground team leader. You have planned and organized a search line, and are preparing to begin the search.

**OBJECTIVES**

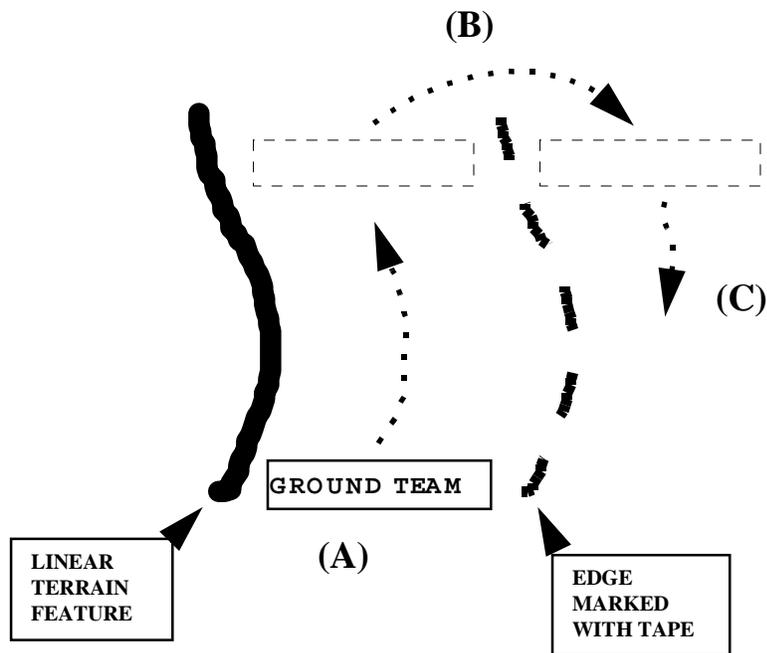
Conduct a proper search, maintaining proper direction, interval and speed, while keeping track of your position.

**TRAINING AND EVALUATION**

**Training Outline**

1. Proper control of a search line is essential to ensure proper coverage of the search area. It is the team leader's responsibility to ensure that all the terrain in the search area is searched to a given degree of thoroughness. The team leader does this by ensuring the team maintains the proper direction, interval and speed. Additionally, the team leader ensures that no terrain is missed between sweeps. Finally, the team leader must also ensure that safety of the team at all times.
2. To control the team:
  - a. Position yourself where you can best control the team. Normally this is centered on and behind the search line. Sometimes you might choose to travel in front of the search line, scouting out possible hazards. Occasionally, the you should travel along the search line to supervise all team members. Only on the smallest teams should the team leader be part of the search line. **THE TEAM LEADER IS NOT A SEARCHER.** While you should keep your eyes open, your primary duty is controlling the team, not scanning.
  - b. Normally uses whistle signals or voice commands ("Forward the Line", "Halt the Line, etc.), although radios can sometimes be used, especially on a long search line.
3. To maintain proper direction:
  - a. When navigating off a terrain feature or marked path. While you should have appointed a base man to follow the terrain feature or marked path, you must double check the base man occasionally with a map and compass. The team leader, not the base man, is ultimately responsible for the direction of the team.
  - c. If you are navigating by azimuth and distance, use your own compass to double check the base man. Periodically ask the pace man for the total distance traveled, and mark it on the map, using terrain association to see if it is correct.
4. To maintain proper interval: You should monitor you team for correct interval and make corrections as needed. As you walk the line, stand by each team member and see if you can see the number of other team members to either side specified by the interval.
5. To maintain proper speed:

- a. You should look for parts of the line that are moving too quickly and slow them down. If the whole line's speed needs adjusting, adjust the speed of the base man accordingly.
  - b. Watch the designated route marker - he is the most likely to fall behind. Slow the team if necessary to ensure a well-marked edge.
  - c. Occasionally stop the team for listening checks or whistle sound sweeps.
6. To ensure no terrain is missed between sweeps:
- a. Make sure the team member marking the edge of the search line is marking at the proper interval (you can see each mark from the last one).
  - b. When you make subsequent sweeps, let the same person who marked a line be the new base man. He will have the easiest time finding the marks since he left them.
  - c. If you have problems finding a mark, stop the line and send out scouts to find it. Once you do, ensure you haven't missed any terrain while looking for the mark. If so, back up and cover it.
  - d. Periodically check your pace man's count and locate your approximate location on the map.
  - e. Periodically check the map, and mark the areas you have covered.



*EXAMPLE: Guiding a team with terrain association. (A) On the initial sweep, the base of the team is to the team's left, guiding on the terrain feature. The right hand member of the team marks the edge with tape. (B) When the team reaches the end of the search are it turns around. (C) On second sweep coming back, the base is to the team's right, guiding on the marking tape left from the first sweep.*

- 7. To ensure team safety.

- a. Occasionally have the team “Count Off” with their numbers. This ensures you haven’t lost anyone.
- b. Monitor your team for fatigue or dehydration. Take breaks as needed.
- c. If you hit dangerous terrain, stop the team, recon area, and make a safe plan to search or avoid it.
- d. Ensure all team members know they can halt the team for any reason related to the search or safety.

### **Additional Information**

More detailed information on this topic is available in Chapter 7 of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Choose a wooded area at least 400 meters long with a linear terrain feature (stream, road, etc.). Line up a search team of at least 5 members. Predesignate a base man, pace man, and an edge marker. Provide a map of the area to the individual to be tested. Choose a magnetic azimuth through a different part of the woods.

**Brief Team Leader:** Tell the individual to take the team and search the area to one side of the linear terrain feature using a search interval of 2 men visible. Tell him to search a given distance along the feature, then turn around and search coming back one search line width farther from the terrain feature. When he completes that task, tell him to search along the magnetic azimuth for 400 meters. At some point along each search, have him stop the team and determine his position on the map +/- 100 meters.

### **Evaluation**

<u>Performance measures</u>		<u>Results</u>
1. Maintains control of the team at all times.	P	F
2. Uses appropriate voice or whistle signals	P	F
3. Maintains proper direction and control of base and pace men.	P	F
4. Ensures proper interval among team members.	P	F
5. Maintains proper speed.	P	F
6. Ensures edge marking is adequate	P	F
7. When asked, can determine the team’s location +/- 100 meters	P	F
8. Leaves no terrain un-searched between the sweeps	P	F
9. Maintains team safety at all times.	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

## O-0419

# PLAN AND ORGANIZE A HASTY SEARCH

## CONDITIONS

You are leading a team in the field, and are assigned to hasty search trails and linear features in an area.

## OBJECTIVES

Within 10 minutes, plan and organize an effective team hasty search of the assigned area.

## TRAINING AND EVALUATION

### Training Outline

1. Efficiency is important to cover a large search area quickly. It takes many searchers a long time to search one square mile, especially in a line search, and it is not wise to waste resources this way when many survivors are found by searching high probability areas. This could be because the search target is believed to be mobile and looking for help, or because the search target is believed to be located near a road or other terrain feature. The objective of a hasty search is to search areas of high probability in an area quickly to a moderate probability of detection. Areas of high probability include linear features like trails, roads, streams, and drainages, and point features like cliffs, boulder fields, caves, etc.

- a. Team movement during a hasty search is normally on trails and roads. Vehicles may be used on some roads, while team members walk on smaller trails.
- b. In order to cover more area, the team leader often will be required to operate the team in two to three-member sections remotely from your location. This requires additional care to keep all team members safe.
- c. Hasty search usually involves attraction tasks, such as yelling, horn blowing, lights at night, etc. (See the Conduct Attraction Techniques task O-0407.)
- d. Sometimes, the team will be told exactly what terrain features to search. Other times, the team will be given an area to cover, and the team leader chooses where to search.

2. To plan and organize a hasty search:

- a. **Determine what linear and point features to search** (unless this is specified) using a map. Take into account the past history of the area, preliminary information from investigations, and the possibility that you may be looking for someone that isn't lost, but just delayed: a "bastard" search.

- 1) Linear features within a search area include trails, ridge lines, drainages, and roads. These are normally places the search target might be walking (like roads), obstacles a plane might have crashed into (ridge lines), or places that allow visibility of surrounding terrain.

- 2) Point features are specific points of interest. They could also include isolated buildings, bridges, or other places the search target may have taken shelter. They could be high points from which a team can visually scan the area. Or they could be danger areas that might have caused the target to become lost or injured (cliffs and caves for missing persons, towers and mountain tops for airplanes).

3) Remember what your target is. A missing plane search will look at different terrain features than a missing persons search.

b. **Determine the hazards in the area** (see separate task -- Identify Natural Hazards - O-0101), so you can brief your team.

c. **Divide the team into sections** of two to three team members.

1) The ability to divide the team into sections is determined by the number of people and the ability to maintain communications with each section. The buddy system requires that no person be sent out alone, so the maximum number of sections is simply half the number of team members.. The team member may choose to make three person sections based on the assignment and the experience level of the team members.

2) Ideally each section will have radio communications with the team leader, but this is not an absolute requirement. Being in whistle range should be adequate for short periods of time.

3) Determine who will carry what team equipment, including the first aid kit, DF gear, and radios.

d. **Determine the rally point.** Where should sections go when they are done searching. It might be the start point, or it might be some other place in the area.

e. **Determine who searches what features.** Divide the work up evenly. Starting from the team's current location and trace routes for each team to the rally point. Decide if each team travels mounted or dismounted. Remember to allow more time for teams moving through rough terrain (such as "ridge running") than for teams traveling on well kept roads.

e. **Make a communications plan.** How do sections communicate -- radio or whistle? Ensure sections are always in at least whistle range of other sections. Determine check-in times and procedures with the team leader. This can be done with whistle signals.

f. **Determine lost procedures.** If there is a clearly definable terrain feature, such as a tower, that is visible from all directions, you could have lost team members move to that feature. If there is a linear terrain feature at or beyond a boundary of the search area (such as a river or highway), you could determine the azimuth to it, and have lost team members travel to it and then stop. At the very least, you could have lost personnel stationary on the trail they are on. In any case, have a plan.

g. **Brief your sections.** The briefing should include the results of all your planning. . Make each section knows exactly where to search. If maps are not available for all, drawing sketches is desirable. Brief the team on:

- 1) The chain of command for the team (who's in charge if the leader is absent or injured).
- 2) Who is in what section, and who carries what team gear.
- 3) Exactly what routes each section takes, and what they search.
- 4) The communications plan
- 5) Terrain hazards and lost procedures

- 6) Actions on clue find or target find.
- 7) Where the team leader will be located.
- 8) Specific clues to search for (remind the team what the target is).
- 9) Attraction techniques to use.

3. To conduct the hasty search, each section travels along its route, using proper scanning techniques. At point terrain features, the section stops and searches the point and it's surrounding area.

### **Additional Information**

More detailed information on this topic is available in Chapters 7, 18, and 19 of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Provide the team leader with a map with an area to search marked on it. The leader may use any item in his field gear, including this checklist. Prepare a list of team equipment.

**Brief Team Leader:** Tell the team leader that he has an 8 man team (including himself) and must develop a plan for a hasty search of the marked area. Brief the team leader on what the target of the search is. Give him the list of team equipment. Tell him to brief you on his plan in 15 minutes as if you were his team.

### **Evaluation**

#### Performance measures

#### Results

The team leader:

- |  |   |   |
|--|---|---|
| 1. Starts the briefing within 15 minutes.  | P | F |
| 2. Briefs the team on:   | P | F |
| a. The chain of command and duty assignments for the team (Who's in charge in lieu of the team leader? Who is in what section, and who carries what team gear?). |   |   |
| b. Exactly what routes each section takes, what to search, and attraction techniques to use.   |   |   |
| c. The communications plan   |   |   |
| d. Safety hazards and lost procedures  |   |   |
| e. Actions on clue find or target find.  |   |   |
| f. Where the team leader will be located.  |   |   |
| g. Specific clues to search for (remind the team what the target is).  |   |   |

- |  |   |   |
|--|---|---|
| 3. Correctly identified the terrain features that need searching and safety hazards  | P | F |
| 4. Made section assignments that:  | P | F |
| a. Let each section cover a logical number of features located along a logical route |   |   |
| b. Cover all terrain features identified in # 1 above                                |   |   |
| c. Make use of vehicles and personnel on foot as appropriate.                        |   |   |
| 5. Developed a logical communications plan and lost procedures.                      | P | F |
| 6. Used all available resources, including team gear and vehicles as appropriate     | P | F |

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0420**  
**PERFORM AN AIRFIELD SEARCH (RAMP CHECK)**

**CONDITIONS**

You are leading a ground team that has been tasked to search an airfield and have just arrived at the airfield.

**OBJECTIVES**

Take all steps necessary to determine if the missing aircraft is at this airport.

**TRAINING AND EVALUATION**

**Training Outline**

1. During a missing aircraft search, one of the first priorities of the mission is to investigate airfields in the surrounding area. This investigation is to determine if the missing aircraft may have landed, refueled, or stopped over to avoid weather. Missing planes can be found at the wrong airport for many reasons. The pilot might have landed successfully and gone about his business, not realizing that people are looking for him. Sometimes, aircraft crash near an airport they were trying to land at, or just took off from.

2. Your team may be tasked to search one or more airfields, or you may come across an airfield during a search. In either case, you should follow the following steps:

a. **Contact the Owner.** The first priority is to contact the airfield owner/operator or fixed base operator (FBO). This individual will permit you access to controlled airfields and will also be helpful in obtaining any records. If no FBO is present, you may proceed to search the airfield within the limits of safety and trespassing laws.

b. **Brief your people.** Make sure all your team members know what the missing aircraft looks like, and what it's tail number is. Remind them of possible search clues, including

1) The missing plane itself.

2) Any plane that comes close to the description (it's possible your briefing at mission base contained an error)

3) Any clues that a plane might have crashed near the airport, such as bad weather in the vicinity at the time the plane was lost, trees knocked down, people reporting hearing/seeing something strange, etc. See Task O-0408 - Identify Aircraft Search Clues for more details.

c. **Conduct the search.** Have your team conduct the following search actions (you may divide your team up as you see fit, making sure that inexperienced members are teamed with more experienced members):

1) **Check records.** Check any landing/take-off records at the airport for information on the missing aircraft. Also check any fuel purchase logs. Look for the tail number of the plane you are looking for.

2) **Conduct Interviews.** Interview people at the airport (See Task O-1101 - Conduct Witness Interview). Airport workers, maintenance personnel, or perhaps somebody just 'hanging around' may have seen the missing aircraft or know someone who might have seen it. All of these types of leads must be thoroughly

investigated. Continue to conduct interviews over time - people come and go at airfields all the time, and the person who saw the search target might not be there when you arrive.

3) **Check the flight line.** Have personnel walk down the flight line / tarmac and check the registration numbers on all aircraft parked on the airfield. Look into hangars and check numbers. Each of these should be conducted within regulations and local laws. If on a controlled airport, notify ground control and/or operations before entering operational areas like the ramps and hangars. Use good judgment in deciding to enter hangars or aircraft; you are not normally going to find a person in distress within a hangar or parked airplane, so waiting for law enforcement personnel, the aircraft owner, or the FBO to open it is totally reasonable.

e. **Leave a phone number.** If the search results are negative, leave the mission base phone number and a contact name (normally the incident commander) with the FBO. Request that he continue asking about the missing aircraft to people who come into the airport. Any information that he develops can then be forwarded directly to mission base. **Note: Do not leave the airfield until you receive permission from mission base.**

### **Additional Information**

More detailed information on this topic is available in Chapters 7, 18, and 19 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Prepare a diagram of an airfield (or conduct the test at an actual airfield). Prepare a description of a missing aircraft and its pilot as well as the incident commander's name and phone number. The team leader may use any equipment in his field gear (including this guide).

**Brief Team Leader:** Verbally brief the team leader on the missing aircraft. Tell him that he has a ground team consisting of himself, one other senior (GTM qualified) and 5 cadets (3 GTM, 2 Trainee). Tell the team leader to describe, in sequence how he will search the airport. Tell him that you will play the role of the FBO. After he has described the search, tell him he did not find the plane, and ask him what he would do now.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
The team leader:		
1. Contacts the FBO and identifies himself and mission	P	F
2. Briefs his team on the missing aircraft and personnel, and what to look for.	P	F
3. Describes how he would use his team to:		
a. Check for landing/takeoff/refueling logs.	P	F
b. Conduct interviews of people at the airport.	P	F
c. Search the flight line and hangers	P	F
4. Does not leave inexperienced team members to operate without supervision.	P	F
5. Requests and receives permission to depart from mission base.	P	F
6. Leaves mission base information with the FBO before departing	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0703**  
**EMPLOY GROUND TO AIR SIGNALS**

**CONDITIONS**

You are in the field and must communicate with an airplane without a radio or signal mirror. You have your field gear.

**OJECTIVES**

Identify the appropriate ground to air signal, correctly construct one signal using your field gear and available materials within 15 minutes, and correctly use body signals

**TRAINING AND EVALUATION**

**Training Outline**

1. Ground to air signals can be used by lost personnel and ground teams, whenever a radio is not available. The international ground to air signals are listed below. There are three types of signals. The five distress signals are used primarily by lost persons. The seven search team signals are primarily used by ground search teams. Finally, there are eleven body signals. All team members should memorize the five distress signals, and carry a reference for the others.

2. To use ground to air signals:

- a. Choose an open area visible from the air.
- b. If possible, draw attention to the area with campfires, smoke, etc.
- c. Construct the signals from any suitable materials, including signal panels, colored cloth (such as tarps or ponchos), logs, stones, or by digging trenches. The key is contrasting the signal with the background terrain.
- d. Signals should be at least ten feet tall. Each "leg" of the signal should be at least eighteen inches thick.
- e. The five distress signals are as follows (you can also use the international "S O S"):

 - REQUIRE ASSISTANCE

 - REQUIRE MEDICAL ASSISTANCE

 - NO OR NEGATIVE

 - YES OR AFFIRMATIVE

 - PROCEEDING IN THIS DIRECTION

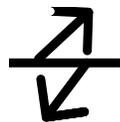
f. The seven ground search team signals are:

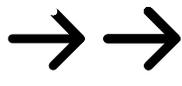
**LLL** - OPERATION COMPLETED

**LL** - WE HAVE FOUND ALL PERSONNEL

**++** - WE HAVE FOUND ONLY SOME PERSONNEL

**XX** - WE ARE NOT ABLE TO CONTINUE.  
RETURNING TO BASE

 - HAVE DIVIDED INTO TWO GROUPS (EACH  
PROCEEDING IN THE DIRECTION INDICATED

 - INFORMATION RECEIVED THAT AIRCRAFT  
IS IN THIS DIRECTION

**NN** - NOTHING FOUND, WILL CONTINUE SEARCH

3. Additionally, there are body signals, used once you are sure the aircraft is looking at you.



## Additional Information

More detailed information on this topic is available in Chapter 10 of the Ground Team Member & Leader Reference Text.

## Evaluation Preparation

**Setup:** Pick an area. Ensure there are enough materials readily available to construct signals. Ensure the student has his field gear. For the second and third steps of the tasks (ground search and body signals) below, the student may use any reference material he has in his field gear, including this manual.

### **Brief Student:**

1. Ask the student to draw each of the five distress signals from memory.
2. Then pick one of the ground search team signals and tell him that he has 15 minutes to construct that signal (do not tell him what the signal looks like; make him look that up in his reference material). Tell him that he can use any materials in the area, and any items in he field gear.
3. Finally have the student demonstrate the three body signals of your choice from the above list. Again, tell him that he may use any reference materials in his field gear.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. From memory, the individual correctly draws the signal for:		
a. REQUIRE ASSISTANCE	P	F
b. REQUIRE MEDICAL ASSISTANCE	P	F
c. NO OR NEGATIVE	P	F
d. YES OR AFFIRMATIVE	P	F
e. PROCEEDING IN THIS DIRECTION	P	F
2. The individual constructs a specified ground search team signal:		
a. At least 10' high, with each leg at least 18" thick	P	F
b. Providing adequate contrast with the surrounding terrain	P	F
c. Within 15 minutes.	P	F
3. The individual successfully uses three body signals chosen by the evaluator	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**O-0802**  
**PLAN AND ORGANIZE SITE SURVEILLANCE**

**CONDITIONS**

You are leading a team in the field, and are assigned to conduct surveillance of a site. All victims have been evacuated. Your team is the first site surveillance team to guard the site.

**OBJECTIVES**

Within 30 minutes of arrival (60 at night). Conduct a reconnaissance, establish a hasty perimeter, determine the final placement of all sentries, mark the perimeter, determine the locations of the command post, parking area and bivouac area, and brief the first relief.

**TRAINING AND EVALUATION**

**Training Outline**

1. Site surveillance is a critical CAP mission. The intent is to ensure that the wreckage of an airplane, possible crime scenes, or other disaster sites are not disturbed by any intruders until investigators (such as NTSB investigators) arrive or until another agency takes control of the scene. Additionally, site surveillance helps prevent injury caused by people wandering in to a potentially hazardous crash site that could contain jagged metal, highly flammable fuel and/or possible contaminated blood.

a. Conducting site surveillance requires a good deal of planning. The team leader must plan the posting of sentries and the positioning of vehicles, bivouac areas, and his own command post to ensure that the site is secure from all directions, that his operation presents a favorable and professional appearance to observers, and that his own team is safe from any hazards from the crash itself.

b. Site surveillance is a continuous mission; a team may be constantly “on duty” for 24 hours or longer. Because of this, a team leader must ensure his plan allows his team adequate rest time to ensure they can sustain operations until relieved.

b. The team leader must also remember that his primary objective is to ensure that no one, including his team, disturbs the wreckage. The only time a team may disturb the wreckage is if it presents a safety hazard that cannot be avoided any other way or if moving the wreckage would help preserve it (this second situation does not happen often).

2. When you arrive on the scene:

a. Determine if there is any other agency already on site. If so, get a full briefing from them and then relieve them once your sentries are posted.

b. Conduct a reconnaissance. Take all necessary precautions against bloodborne pathogens (BBP). For example, if you are the first agency on the scene, conduct the recon wearing full protective gear, if available. If another agency is on station, determine the BBP threat from them. During the reconnaissance, you are specifically looking for:

1) Any safety hazards, including jagged metal, fuel or blood. Remember to look overhead in the trees for pieces of the wreck that might fall and for any trees that have been dangerously weakened by the crash.

2) The most likely avenues of approach to the crash site that intruders might take, such as trails, roads or open terrain.

3) The outline of the crash, formed by the pieces of wreckage furthest from the center.

4) Places where sentries could have good visibility of the crash site and/or the surrounding terrain, focusing on likely avenues of approach.

c. Establish a hasty perimeter. Put sentries around the crash site, outside of all wreckage, and a safe distance from any hazards found in the reconnaissance.

d. Mark the perimeter. Use engineers or surveyor's tape. Put tape as close to waist level as possible.

e. Determine permanent sentry positions. Sentries can be stationary or roving. In addition to watching the crash site, sentries can also be used to direct traffic around the site, if near a road. Don't have too many sentries at once -- you need multiple shifts. Choose positions that minimize the number of sentries you need.

f. Determine where you will put:

1) Your command post. This should be located where you can best control the crash site and access to it.

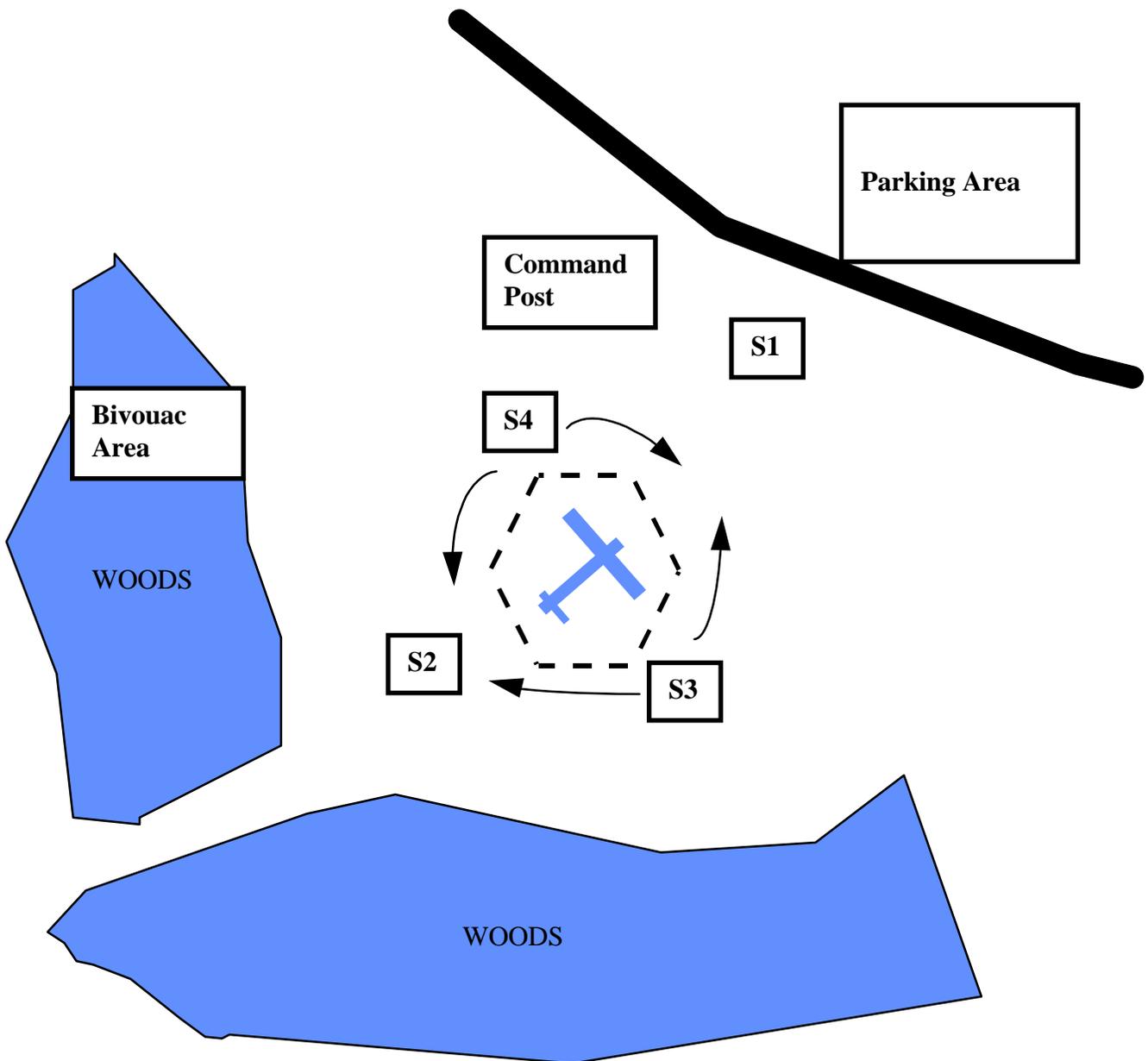
2) The bivouac area. This should be far enough away from the wreck to avoid destroying any evidence, out of the view of the public (if possible) and where you can easily call for team members as needed.

3) The parking area. If the crash is near a road, decide where to put your vehicles and where you will try to keep visitor's vehicle. Avoid crowding the crash site.

g. Divide your team into sentry shifts, or "reliefs". You will need at least two reliefs in the daytime, and three at night.

h. Pull your first relief personnel off the perimeter, brief them and post them in the permanent sentry posts (see separate task O-0803 -- Supervise a Site Surveillance Shift).

i. At no time should you disturb any piece of the wreckage unless it poses a safety threat. If you must disturb wreckage, mark its original location and photograph it if possible.



**Example of A Site Surveillance Plan** - The team leader determined that the two avenues of approach were the road (upper right) and the trail between the two pieces of woods (lower left). He posted four sentries. Sentry S1 faces the road, where he can intercept anyone coming from the road, while Sentry S2 faces the woods trail. Sentries S3 and S4 each rove along half of the marked perimeter. The dotted hexagon represents engineer tape, which circles the outmost pieces of the wreckage. The command post is set up near the road, and where the team leader can see everything that is going on. The bivouac area is in the woods to the left - nearby but out of view from the road. The parking area has been set up across the road, where it will not congest the crash site.

#### Additional Information

More detailed information on this topic is available in Chapter 15 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Mark a “crash site” or disaster site on a piece of terrain. you can use a signal panel, a car, or anything else you might have available. Use a few signs to mark associated hazards, such a , “Pool of Fuel”, “Unstable Tree”, etc.

**Brief Team Leader:** Tell the student that he is the team leader and has been assigned to secure this crash site. Tell him that all victims have been evacuated, and there is currently no one on site. Inform him that he may use any checklist, including this book, that he carries in his field gear. Tell him to perform all actions necessary to plan and organize the CSS. Tell him to you will play the role of all team members. Finally tell him that in 30 minutes (60 if a BBP protective suit is available and expected to be used) that he must brief you on his plan.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
The team leader:		
1. Conducts surveillance.	P	F
a. Taking BBP precautions (or simulating)		
b. Determines all safety hazards.		
c. Determines the most likely avenues of approach that bystanders/intruders would use.		
d. Determines the outline of the crash site.		
e. Determines terrain with good visibility of the site and the avenues of approach		
2. Directs part of his team to establish a hasty sentry perimeter safe from all hazards and outside the crash site outline.	P	F
3. Directs the marking of the perimeter with tape, as close to waist level as possible (simulated)	P	F
4. Determines final sentry positions	P	F
5. Determines the location of the command post, bivouac area, and parking area (if needed)	P	F
6. Divides his team into at least 2 shifts (day) or 3 shifts (night)	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**P-0201**  
**SIGN-IN GROUND SEARCH TEAM AT MISSION**

**CONDITIONS**

You are the leader of a ground team that has just arrived at mission base. You have completed a individual and vehicle accountability and safety inspection.

**OBJECTIVES**

Complete personnel and vehicle sign-in within 15 minutes of arriving at mission base.

**TRAINING AND EVALUATION**

**Training Outline**

1. Before a team can depart mission base to perform a sortie, the team leader is responsible for ensuring that all personnel are properly “signed-in” to the mission. This should be done immediately upon arrival at mission base. Signing-in gives the mission staff information on what vehicle and personnel resources are available, and it gives the ground operations staff specific information on team composition and capability. Legally, it also ensures that all personnel and vehicles on the mission are accounted for and are covered by the appropriate insurance regulations.

a. There are three forms used to sign-in a team - team leaders should have copies of these forms on-hand.

1) ICS Form 211, Check-In List - used to record all personnel or teams present at the mission, along with several other critical pieces of information. For this reason, it is essential that everyone writes legibly on the form.

2) ICS Form 218, Support Vehicle Inventory – used by the ground support unit of the logistics section to record all ground support vehicles (corporate and private) participating in the mission. This includes vehicles that only transport people to the mission base and aren’t expected to be used during the mission. This form is used primarily for insurance, reimbursement, and letting the mission staff know what assets are available.

3) CAPF-109, Vehicle Clearance Form - used to plan and brief all ground team sorties assigned during a mission.

b. Teams can actually begin the sign in process before arriving at mission base. A team leader can have his team fill out the paperwork at the meeting point, or while en route.

2. To sign in a team for a mission:

a. Have your team members complete an ICS Form 211. As they do this, ensure that:

1) Each member has on-hand a current CAP ID card and CAPF 101 for the job they will be doing. (normally, inspect this yourself. For large teams, delegate the inspection to your second-in-command.

2) Each member writes legibly, providing his appropriate information (listing Trainee status if applicable).

3) Emergency contact information should be on file, but may need to be provided. Ensure that someone is known who can actually be reached during the mission if something happens to you.

b. Have all drivers complete the ICS Form 218, providing the required information.

c. Fill out a CAPF 109. It is often good to do this as each person is logged onto the 211. This way, you can question them on their qualifications and check any qualification cards at the same time you're checking CAP ID's and 101 cards.

1) Only list personnel who will be part of your ground team. If you transported people to the mission who will be working mission staff, base operations, aircrew, etc., don't list them on the form. Also don't list people who don't have at least a Ground Team Member Trainee Rating - GES personnel cannot be part of a ground team.

2) Fill in all required information on your vehicles, communications resources. For each team member, indicate each person's name, list each member's ground operations specialties, and their personal equipment.

3) List all the items of team equipment your team has, and what vehicle it is located in. Have your drivers fill in the safety checklist for all team vehicles.

4) Turn one copy of the form in to the Ground Branch Director and make one for yourself.

5) During the mission, people will often be added or taken from your team and assignments may change. When this happens, you should immediately update the CAPF 109 with the Ground Branch Director.

### **Additional Information**

More detailed information on this topic is available in Chapter 13 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Ensure you have provided the team leader with an ICS Form 211, ICS form 218, CAPF 109, and a pen. Prepare a sheet containing all necessary information on two ground team vehicles (including equipment in each vehicle) and 6 team members (including name, age, senior/cadet status, what vehicles they are driving/riding in, and the qualifications they have). Ensure there is at least one person on the list with only a GES or other non-ground team rating. Prepare a second sheet describing two other team members from a different squadron.

### ***Brief Team Leader:***

1. Give the team leader the CAP Forms listed above, and the information on the vehicles and the six team members. Tell him that he has just arrived at mission base, and has inspected his vehicles and equipment, and that the handouts describe what assets and personnel his team have. Tell him that you will act as a team member just attached to his team. Tell him that he has 15 minutes to correctly:

- a. Have himself and you sign in on the ICS Form 211.
- b. Complete the ICS Form 218 for all vehicles.
- c. Complete the CAPF 109 for all team members.

2. After the team leader has completed this task, tell him that at the end of the day, one member of his team (choose a name), is assigned to work at mission base for the rest of the mission, and that two members from another squadron have been added to the team (give him the sheet describing the two team members). Tell the team leader to update the paperwork as needed.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
The Team Leader:		
1. Has all personnel sign-in on the ICS Form 211		
a. Verifies Current ID Card	P	F
b. Verifies Current 101 Card	P	F
2. Signs all vehicles in correctly on the ICS Form 218	P	F
3. Completely fills out CAPF 109 form (front and back)		
a. Does not list non-ground team personnel	P	F
b. Lists all team members (including the evaluator)	P	F
4. Completely Fills out headers on all forms	P	F
5. Ensures all form entries are legible.	P	F
6. Completes the above steps in 15 minutes.	P	F

7. As team members are added or subtracted from the team, lines them out or adds them to the CAPF 109.

P F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**P-0202**  
**PLAN AND BRIEF SORTIE**

**CONDITIONS**

You are the leader of a ground team that has just been given a sortie briefing.

**OBJECTIVES**

Within 5 minutes, issue a warning order to your team. Within 20 minutes, correctly issue an operations order.

**TRAINING AND EVALUATION**

**Training Outline**

1. The key to a successful mission is a usable plan. The team leader makes this plan for his unit. There are three types of orders. All of these are normally given verbally.

a. **The Warning Order** is designed to save time. It lets your team know what preparations to make while you are preparing your plan. That way, they're not waiting around for you to finish the plan before they do anything. It consists of four items of information:

1. Type of Sortie - what, roughly, is your team about to do (line search, witness interview, etc.)
2. Preparations to begin - for example "pack up the van, check out the distress beacon DF gear."
3. Earliest Time of Movement - when the team will leave. This lets them know how long they have for preparations.
4. Attachments and Detachments - if anyone is joining the team (for example another squadron, a police dog team, etc.) and if anyone is leaving your team.
5. Time and Place of Operations Order - When and where the team should gather for you to brief your operations order.

b. **The Operations Order** tells your team what you're about to do, and how to do it. Normally, it's given orally, and team members copy it down in their notebooks. The operations order uses five paragraphs, which are:

- 1) Paragraph 1 - Situation - information on the search target, other search elements in the area, and terrain and weather.
- 2) Paragraph 2 - Mission - exactly what your team is about to do. Written as a few quick sentences, answering the questions Who, what, where, when and why.
- 3) Paragraph 3 - Execution - exactly how your team will accomplish the mission, in detail.

a) This paragraph starts off with the *Ground Branch Director's Intent*, which is a statement of exactly what the GBD. wants you to accomplish. In a line search, for example, there's a big difference between "This is the best lead we have. I want you to go over that area with a fine tooth comb until

you reach 80% probability” and “The police are about to call off the search. Cover as much ground as you can in the next two hours.” Each of these intents will result in a very different plan.

b) The rest of the paragraph is the *Concept of Execution*, which covers how the team will move, what each person’s job is, what team equipment each should carry, how you will search, what you will do when you find the target, etc. Describe, in sequence, exactly what you plan to do.

4) Paragraph 4 - Service Support - how you will support yourselves in the field. What food you should take, where the nearest medical assistance is, whether you should plan on being in the search area overnight, what equipment checks and maintenance should the team do before it leaves.

5) Paragraph 5 - Command and Signal - everything about the communications plan, including frequencies, radio check-in times, key phone numbers, whistle signals, etc. Also reviews the chain of command for the team and the mission, and states where the team leader will be located during the mission.

c. **A Fragmentary Order** is simply an update to an operations order. For example, once you arrive at the search area, you may change your mind about how you plan to search it. There is no special format. Just use the operations order format, but only brief those items that change.

2. To ensure you come up with a workable plan, follow the Troop Leading Procedure listed below:

a. Receive the Mission. Get the sortie brief from the Ground Branch. Start thinking about what you want to do.

b. Issue a Warning Order - this gets your team started in preparing for the operations.

c. Make a Tentative Plan - sit down with a map, and start your plan.

d. Initiate Movement - if time is of the essence, start driving/walking to the search area.

e. Conduct Reconnaissance - when possible, look at the ground you will be walking. If not, use a map.

f. Complete the Plan

g. Issue the Operations Order

h. Supervise - and revise the plan as necessary with Fragmentary Orders.

3. The Warning Order Format:

### **WARNING ORDER**

- 1. Type of Sortie**
- 2. Preparations to begin**
- 3. Earliest Time of Movement**
- 4. Attachments and Detachments**
- 5. Time and Place of Operations Order**

4. The Operations Order Format: Use the following checklist to make sure you cover everything during your operations order brief. Make sure to use visual aids like maps and diagrams when you brief, if they will help your team to understand. The best place to brief is at the search area, where the team can see what the terrain looks like.

### **OPERATIONS ORDER**

**A. Situation:**

- 1. Target Information (from the Incident Action Plan)**
  - a. Type, N-number, color, markings**
  - b. Personnel (description, names, ages, habits, probable condition)**
  - c. Current Leads and Information**
- 2. Supporting Agencies/Organizations:**
  - a. CAP teams, aircraft in the area**
  - b. Other agencies**
  - c. Attached or detached personnel**
- 3. Terrain and weather (focus on hazards)**

**B. Mission: Who, what, when, where, why**

**C. Execution:**

- 1. Ground Operation Director's Intent**
- 2. Concept of the Operation**
  - a. Execution (schedule of events, including)**
    - 1) Movement to area (primary and alternate routes)**
    - 2) Ground search patterns and techniques of penetration**
    - 3) Probable search area coverage**
    - 4) Actions to take when target is found (aid, evacuation, and notification)**
  - b. Tasks to subordinate units (include team equipment each should carry)**
    - 1) Tasks to sub teams**
    - 2) Medic**
    - 3) Navigator**
    - 4) Log Keeper**
    - 5) Drivers**
    - 6) Distress Beacon - DF specialists**
    - 7) Equipment Assistants**
  - c. Coordinating Instructions**
    - 1) Actions in search area (including what to look for)**
    - 2) Actions on find**
    - 3) Legal procedures for victims**
    - 4) Automatic return time**
    - 5) Departure/meeting points and times**
    - 6) Rally point(s)**

- 7) Required equipment/uniform
- 3. How to deal with press/bystanders
- 4. Service Support:
  - a. Concept of support (General re-supply plan, what team must carry with them)
  - b. Supply
    - 1) Food and water
    - 2) Fuel and lubricants
    - 3) Personal items
    - 4) Medical Supplies
    - 5) Spare parts, batteries, etc.
  - c. Services
    - 1) Maintenance (Permission checks, breakdown procedures)
    - 2) Medical Support locations (team and base)
- 5. Command and Signal:
  - a. Signal
    - 1) Primary and alternate means of communication.
    - 2) Base call signs, frequencies and phone #
    - 3) Nearby units call signs and frequencies
    - 4) Relay call signs, frequencies, and location
    - 5) Communications schedule and frequencies for check in
    - 6) Air/Ground signals to be used
  - b. Command
    - 1) Chain of command (from Incident Commander down)
    - 2) Location of team leader.

#### **Additional Information**

More detailed information on this topic is available throughout the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Prepare a Mission Brief and a Ground Operations Sortie Brief for a team. Provide the team leader with maps of the sortie area. Have a timer. The leader should have his field gear.

**Brief Team Leader:** Brief the team leader of the sortie. Then tell him to issue a warning order to you in 5 minutes, and an begin an operations order briefing in 20 minutes. Tell him that he may use any part of his field gear, including this book.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
The Team leader:		
1. Issues a Warning Order containing the 4 critical elements (Sortie Type, Preparations, Earliest Time of Movement, and Place and Time of Operations Order.	P	F
2. Issues Warning Order within 5 minutes of the end of the mission Brief	P	F
3. Issues an Order in the 5 paragraph format, adequately covering:		
a. Situation	P	F
b. Mission - (Who, what, where, when and why).	P	F
c. Execution - (Ground Operation Director's Intent and Concept of Execution)	P	F
d. Service Support	P	F
e. Command and Signal	P	F
4. Starts Operations order within 20 minutes of the end of the mission brief	P	F
5. Uses appropriate visual aids (maps, etc.) during the operations order brief	P	F
6. Asks for questions	P	F
7. Has briefed a workable plan (evaluator's subjective decision)	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**P-0203**  
**CONDUCT REHEARSALS**

**CONDITIONS**

You are the leader of a ground team that has just been given a sortie briefing. You have completed your plan and briefed your team.

**OBJECTIVES**

Conduct a rehearsal of the key activities you expect to perform on your mission.

**TRAINING AND EVALUATION**

**Training Outline**

1. A rehearsal is the act or process of practicing an action in preparation for the actual performance of that action. Often, your team will be given tasks to perform that require rehearsal. For example, you may be ordered to perform a night line search, and your team has some members who have never done it before. So, before you get out in the woods, it's best to rehearse how you will perform that search - how you'll keep interval on the line, how you'll mark your path, how you'll maintain your direction of movement, etc.

a. Rehearsals are much better than just briefing a mission. The rehearsal leaves a lasting mental picture in everyone's mind of what's going to happen, and what part they play in it.

b. Rehearsals are also a great place to practice contingency, or "what if" drills. For instance, during a rehearsal you could ask a team member to demonstrate what he would do if he found a clue, found the victim, or became lost.

c. Team rehearsals take two major forms.

1) In a "full up" rehearsal, the team rehearses exactly what they'll do, using all their equipment, just as if they were actually doing it. So, before starting the night search listed above, the team leader would form his team members in a field or wooded area, and actually practice moving, searching and marking.

2) You can also hold a simulated or "sand table" rehearsal. In this case, you set up a model of the area, either by drawing in the dirt, or using a map or drawing. Then you talk your way through the operation, letting each person describe what actions they will take. You can use rocks or other markers to simulate each team member, and have them move them along the ground.

2. To perform a rehearsal:

a. Decide what to rehearse - this requires determining:

1) How much time you have available. If you must begin the sortie in 5 minutes, you won't have time to rehearse very much. If you have an hour, you can do a much more thorough job.

2) What parts of the operation require rehearsal. You want to rehearse the parts of the sortie that are complicated, or unfamiliar to your team. You especially want to rehearse the key events - the things that would "make or break" the operation. If the sortie is a line search, and your team is very proficient at line

searching, there's no reason to rehearse that. But if your team hasn't practiced what it would do if you found the victim, this would be a good time to go over that.

b. Decide what type of rehearsal - "full up" or simulated. This is mainly based on how much time you have. "Full up" rehearsals are preferable, but often impractical. At the very least, a ground team can conduct a verbal rehearsal of key events while driving to the sortie location (if not required to perform a mounted search en route).

c. Prepare the rehearsal area. For a "full up" rehearsal, this means choosing a place to rehearse. For a simulated, this means preparing the terrain model. As stated above, you can create a miniature version of the terrain on the ground, or use sketches or maps. The bigger the model, the better.

b. Conduct the rehearsal.

1) Overview. Remind the team what the sortie is. Then tell them what you're going to rehearse, and in what sequence.

2) Orientation. Orient the team to the terrain or model being used. For example "The terrain model represents the search area. North is to your right. This line I've drawn represents the highway. The large black rock is the Ranger Station." Always ask for questions, to make sure everyone understands.

3) Walk Through. Walk the team through the operation. Have them demonstrate and describe what actions they will take. Ask "what if" questions, such as "Smith, at this point you come across a 15 foot wide stream blocking your path. What will you do?". These make sure everyone understands the operation.

4) Summary of Changes. Often, you will make changes in your plan during the operation. For example, you might not want Jones to be your compass man, because it was obvious from the rehearsal that he's not proficient enough. If you make changes, make sure everyone understands them.

5) Ask for questions.

### **Additional Information**

More detailed information on this topic is available throughout the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** (This task is normally tested along with P-0202 - Plan and Brief Sortie. If you test it this way, simply have the team leader rehearse his planned sortie. Otherwise, use the following preparation instructions). Choose a type of sortie, such as line search, mounted search, crash site surveillance, ramp check, etc., and prepare an operations order for the sortie (see task P-0202). Choose the part of the task you want the team leader to rehearse, using task name(s) from the ground team member and leaders handbook. Right them down on a sheet of paper. Decide what kind of rehearsal you want the leader to do (full up or sandtable). Provide team members for the rehearsal. Pre brief the team members on the plan.

**Brief Team Leader:** Tell the team leader that he/she should conduct a rehearsal of the tasks you have chosen. Brief the team leader using the Operations Order Format from task P-0202. Tell him he may use anything he carries in his field gear, including this book. Explain the sortie to the team leader, and give him his team

members. Tell the team leader to complete all planning and preparation and begin the actual rehearsal in 45 minutes.

### **Evaluation**

<u>Performance measures</u>	<u>Results</u>	
During the rehearsal, the team leader:		
1. Provides adequate overview.	P	F
2. Orients the team to the terrain or model.	P	F
3. Walk the team through the operation. Has them demonstrate and describe what actions they will take.	P	F
4. Ask “what if” questions to ensure everyone understands.	P	F
5. Summarizes changes to the plan, that come out the rehearsal (if there are any).	P	F
6. Asks for questions.	P	F
7. Began the rehearsal within 45 minutes.	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**P-0204**  
**CONDUCT AN AFTER ACTION REVIEW**

**CONDITIONS**

You are the leader of a ground team that has just completed a sortie, either actual or training. Debrief and team refit are complete. You now wish to review the team's performance to determine future training requirements.

**OBJECTIVE**

Successfully conduct a review that fosters individual participation, and determines the team's training strengths and weaknesses with respect to the sortie conducted. Records the results of the review for use in planning future training.

**TRAINING AND EVALUATION**

**Training Outline**

1. The After Action Review, or review, is a group activity that allows all members of the group to work together to review a mission sortie or training event. The purpose is to determine those things the team does well (and should *sustain*) and those things the team needs to *improve* in.
2. The review is a group process. If the leader just stands up and tells everyone else what happened, and no one else talks, it is not a review -- it's just a lecture.
3. The review is more than just a group discussion. The leader facilitates the review by leading a discussion of the events and activities that focuses on the training objectives. The discussion should orient on what the team did, what the members did, and what the leaders did, relating these actions to the outcome of the mission and to training objectives (such as the tasks in this book). This discussion should also address the functionality of equipment used by the team. At the close, the review leader summarizes the discussion, covering strengths and weaknesses discussed during the review and what the team needs to do to fix the weaknesses.
4. The leader must make sure the discussion focuses on what the team did, not what higher headquarters or other units did. Remember, the purpose is to help train your unit -- not someone else's.
5. To successfully conduct a review, the leader must:
  - a. PLAN.
    - 1) Establish objectives for the review -- what do you want to accomplish? If your unit just completed a Crash Site Surveillance sortie, then your main objective would be to review the conduct of the surveillance. If you had more time, you might also wish to review how the team alerted and the drive to the site went. You decide on the objectives prior to the review, and keep the discussion within those objectives.
    - 2) Choose the review Site -- pick a place that is comfortable, with adequate light, and protection from the elements if possible. Reviews should not be conducted with the team standing in formation -- it will quickly turn in to a lecture.
    - 3) Select Training Aids -- determine what "props" you need. A map is always handy. A blackboard or white board can be used to draw pictures of how the team moved through an area, or to record the

results of the review. You should always have the appropriate publications on hand (ground team handbook, CAPM 50-15, etc.) that discuss the correct way of doing whatever the team just did.

## b. PREPARE

1) Review The Training Objectives And Objectives - Write down what the purpose of the exercise was. (For example "To practice hasty search and first aid"). Then look through your reference publications to make sure you know what the objectives are.

2) Review your notes and the team log- If you took any notes during the exercise or sortie, review them to refresh you memory as to what happened (or at least what you observed -- other team members may add things during the review that you never noticed).

3) Develop an outline -- decide on how you want to lead your team through the discussion. Base your outline on this one:

a) Introduction

b) Present the Mission - What was your team supposed to do. Use the sortie briefing.

c) Summary of Events -- What happened, chronologically, during the sortie?

d) Discussion of Key Issues -- the things that made the mission a success (or failure).

e) Analysis -- in terms of:

- **Command** -- Was direction from upper echelons apparent? Did command staff members assist teams in completing tasks as necessary?

- **Operations** -- Was the appropriate resource used for the task? If combined resources were necessary to complete the tasks assigned, was coordination of those resources effective? Did the mission assignments meet the original intent as briefed?

- **Planning** -- Were all resources assigned prepared for their tasks? Were team assignments made effectively?

- **Finance and Administration** -- Was documentation of team participation readily apparent? Were reimbursement procedures briefed, if applicable?

- **Logistics Support** -- Did the team have all of the necessary equipment to accomplish the missions assigned? Was the communications system utilized effective? If teams were in the field for an extended period, were items needed for refit of the team coordinated effectively?

f) Discussion of the Suggested Training to Sustain or Improve Team Skills.

g) Conclusion

## c. EXECUTE.

1. Make sure everyone is comfortable. If people are uncomfortable or distracted, they will not participate.

2. Lead the discussion with questions. For example, if you have noted that had problems maintaining a good search pattern during the sortie, don't just tell the team that. Instead, ask something like "What happened when we started our line search?" or "How well do you think our line search went?". Whenever possible, let the team members tell YOU how things went, not the other way around. The less you talk, the better.

3. Keep the group focused. If team members start talking about things not related to the sortie, or the training objectives, it is your job to bring them back on track.

4. Analyze what the group is saying. If something went wrong (or right) find out why. Discuss how you could have done things better. Determine what training could help your team to improve.

5. Do not embarrass anyone. Make sure everyone feels free to bring up problems without being ridiculed. This is a sensitive issue, since you want team members to discuss their own mistakes. Everyone must understand that the purpose of the review is to make the team better.

6. Ensure performance is graded. By the end of the review, team members must clearly understand what was good, bad and average about their performance. The art of the review is to get the team members to accurately grade their own performance. In some cases, however, you may need to tell the team how they did -- especially with newer members.

7. Record the major points of the review, especially what areas need improvement. Use this information to plan future training.

### **Additional Information**

More detailed information on this topic is available throughout the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** This task is graded by observing a team leader conduct a review after a training exercise or mission sortie. The team leader may use any materials he/she has on hand, including this book.

**Brief Team Leader:** Tell the team leader that he/she should conduct a review of the exercise or sortie just completed. Tell the team leader to complete all planning and preparation and begin the actual review in 45 minutes.

### **Evaluation**

<u>Performance measures</u>	<u>Results</u>	
During the review, the team leader		
1. Chooses a comfortable review site with adequate light and protection from the elements.	P	F
2. Uses training aids where appropriate.	P	F
2. Introduces him/herself and states the training objectives	P	F

- |  |   |   |
|--|---|---|
| 3. Leads the team through a discussion of:   |   |   |
| a. What the mission was.   | P | F |
| b. What happened during the sortie (in chronological order.  | P | F |
| c. What were the Key Issue/Events that made the mission a success (or failure).  | P | F |
| d. Analysis and Summary of team performance in terms of Command and Control, Intelligence and Search, Movement and Navigation, Recovery and Security, and Logistics and Personnel Support. | P | F |
| e. Suggested Training to Sustain or Improve Team Skills.   | P | F |
| 4. Leads the discussion with questions.  | P | F |
| 5. Keeps the group focused.  | P | F |
| 6. Relates performance to published objectives.  | P | F |
| 7. Records the results of the review   | P | F |

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.

**SPECIALTY QUALIFICATION TRAINING RECORD (SQTR)  
Ground Team Member – Level 2**

NAME (Last, First, MI)	CAPID	DATE ISSUED
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**Prerequisites**

Item	Date Completed
Complete requirements for GTM 3	

The above listed member has completed the required prerequisite training for the ground team member – level 2 specialty and is authorized to serve in that specialty while supervised on training or actual missions.

\_\_\_\_\_  
UNIT/WING/REGION COMMANDER OR  
AUTHORIZED DESIGNEE'S SIGNATURE

\_\_\_\_\_  
DATE

**Familiarization and Preparatory Training**  
No Additional Training Is Required

**Advanced Training**

Task	Evaluator's CAPID and Date Completed
Complete Task O-0104 Set up Shelter	
Complete Task O-0202 Measure Distance with Pace Count	
Complete Task O-0203 Navigate past an Obstacle	
Complete Task O-0209 Identify The Major Terrain Features On A Map	
Complete Task O-0210 Identify Topographic Symbols On A Map	
Complete Task O-0211 Determine Elevation On Map	
Complete Task O-0212 Measure Distance On A Map	
Complete Task O-0213 Convert Between Map And Compass Azimuths	
Complete Task O-0215 Determine Azimuths On A Map Using Two Points	
Complete Task O-0216 Orient A Map To The Ground Using Terrain Association	
Complete Task O-0217 Orient A Map To North Using A Compass	
Complete Task O-0420 Perform An Airfield Search (Ramp Check)	
Complete the appropriate portion of CAPT 117, <i>Emergency Services Continuing Education examinations</i>	

**Exercise Participation**

The above listed member satisfactorily participated as a ground team member – level 2 trainee under my direct supervision on mission number \_\_\_\_\_.

\_\_\_\_\_  
QUALIFIED SUPERVISOR'S SIGNATURE

\_\_\_\_\_  
DATE

The above listed member satisfactorily participated as a ground team member – level 2 trainee under my direct supervision on mission number \_\_\_\_\_.

\_\_\_\_\_  
QUALIFIED SUPERVISOR'S SIGNATURE

\_\_\_\_\_  
DATE

**Unit Certification and Recommendation**

The above listed member has completed the requirements for the ground team member – level 2 specialty qualification and is authorized to serve in that specialty on training or actual missions.

\_\_\_\_\_  
UNIT/WING/REGION COMMANDER OR  
AUTHORIZED DESIGNEE'S SIGNATURE

\_\_\_\_\_  
DATE