

# TASK BOOK

## Ground Team Leader



24 May 2004  
Extracted: 28 Aug 2008

Trainee: \_\_\_\_\_ Unit: \_\_\_\_\_

**SPECIALTY QUALIFICATION TRAINING RECORD (SQTR)**  
**Ground Team Leader**

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

Item	Date Completed
Qualified Ground Team Member (level 3, 2, or 1)	
At least 18 years of age	

The above listed member has completed the required prerequisite training for the ground team leader 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-0005 Insect team members	
Complete Task O-0006 Inspect team equipment	
Complete Task O-0007 Direct team refit after sortie	
Complete Task O-0104 Set up Shelter	
Complete Task O-0204 Locate a point on a Map using Latitude and Longitude	
Complete Task O-0205 Locate a point on a map using the CAP Grid System	
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 a map	
Complete Task O-0212 Measure distance on a map	
Complete Task O-0213 Convert between map and compass azimuths	
Complete Task O-0214 Determine and plot an azimuth on a map	
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-0218 Locate own position on a map using terrain association	
Complete Task O-0220 Move from point to point in a vehicle using a map	
Complete Task O-0301 Determine Distress Beacon Bearing	
Complete Task O-0302 Locate a Distress Beacon	
Complete Task O-0303 Deactivate a distress beacon	
Complete Task O-0304 Triangulate on a distress beacon signal	
Complete Task O-0416 Plan Search Line Operations	
Complete Task O-0417 Organize a Search Line	
Complete Task O-0418 Control a Search Line	
Complete Task O-0419 Plan and Organize a Hasty Search	
Complete Task O-0420 Perform an Airfield Search (Ramp check)	
Complete Task O-0421 Direct team actions on locating a clue	
Complete Task O-0422 Direct team actions on find	
Complete Task O-0605 Extinguish a small Fire	
Complete Task O-0802 Plan and organize site surveillance	
Complete Task O-0803 Supervise a site surveillance shift	
Complete Task O-0804 Sign over a site	
Complete Task O-1001 Direct team actions at meeting point	
Complete Task O-1002 Establish a helicopter landing zone	
Complete Task O-1101 Conduct Witness Interview	
Complete Task P-0201 Sign-in a Team at Mission Base	
Complete Task P-0202 Plan and brief sortie	
Complete Task P-0203 Conduct rehearsals	
Complete Task P-0204 Conduct after action review	
Complete Task L-0101 Inspect a vehicle	
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 leader trainee under my direct supervision on mission number \_\_\_\_\_.

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

\_\_\_\_\_  
DATE

The above listed member satisfactorily participated as a ground team leader 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 leader 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

# TASK BOOK

## Ground Team Leader



### Prerequisites

Qualified Ground Team Member (Level 3, 2, or 1)  
At least 18 years of age

# TASK BOOK

## Ground Team Leader



### Familiarization and Preparatory Training Tasks

No Additional Training is required.

# TASK BOOK

## Ground Team Leader



Advanced Training

**O-0005**  
**INSPECT TEAM MEMBERS**

**CONDITIONS**

You are a team leader, and your team is about to depart for a sortie.

**OBJECTIVE**

Inspect your team members for appearance, safety, and mission readiness.

**TRAINING AND EVALUATION**

**Training Outline**

1. It is the team leader's responsibility to ensure his personnel are equipped to perform their job safely and effectively. Although gear purchase is an individual's responsibility, the team leader has the authority to restrict any team member from participating because of uniform or equipment problems. A team member missing critical items, or with unserviceable equipment, might be unsafe, become a burden to his team, or an embarrassment to the Civil Air Patrol.

a. Inspections in the field cannot be as lengthy as a full gear layout (see tasks O-0001 and O-0010). Instead the leader should only inspect those critical items necessary for the performance of the mission, the member's safety, and his appearance.

b. Asking a team member if he is carrying a meal is not an inspection. The leader should ask to see the thing he is inspecting. This eliminates misunderstandings, or memory errors

2. The best way to inspect a unit is to line them up, and announce what items you are going to inspect. That way, they can get the items out before you get to them, which speeds the process up

3. As you inspect, you check each item for *serviceability*. Having a flashlight is good. Having a *working* flashlight much better. Don't assume that compasses point to north, that canteens are full, or that medication is not four years old and stale. Check these things.

4. Utilize the published minimum equipment list to complete the following inspection checklist:

a. Safety -

1) Adequate clothing, food and water. (remember to check orange vests for ground teams and appropriate uniforms for UDF team members)

2) Documentation for any allergies or medical problems? Any medication he needs.

3) Adequate survival equipment in case he gets lost.

4) Is the member overloaded?

5) Is the member sick or fatigued?

b. Mission readiness.

1) The equipment needed for this mission (for example, a flashlight and extra batteries for night work, or marking tape for line searches).

2) Is all equipment secured on the person, without excess straps hanging off? Is the person's load balanced for hiking?

3) Current CAP ID Card, CAPF 101, first aid card, communications certification, State Driver's license and CAP driver's license (if applicable).

c. Appearance.

1) Is the member in a complete, clean and serviceable uniform?

2) Has he shaved, washed, etc.?

5. If you find problems, you have to decide how to deal with them. For example, you might be able to find a meal for a team member who doesn't have one. You might not let the team member with an unsightly uniform man a crash site surveillance post in full view of the public, but perhaps he could monitor the radio in the vehicle. But if it is a safety issue, it is your responsibility not to let the team member participate where he could be injured.

### Additional Information

More detailed information on this topic is available in Chapter 2 of the Ground Team Member and Leader Reference Text.

### Evaluation Preparation

**Setup:** Provide one member in uniform with appropriate equipment. Ensure there are at least 5 discrepancies from the above categories in the member's uniform or equipment (at least three should be in the equipment).

**Brief Team Leader:** Tell the team leader to inspect the member, and tell you what problems he finds. Tell him what sort of sortie the member is about to participate in. After the team leader notes the discrepancies, ask him if he would take this team member on the sortie.

### Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. The team leader identifies 4 of the five uniform/equipment discrepancies	P	F
2. The team leader correctly determines if the team member can participate in the sortie, and if any corrective actions are needed.	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-0006**  
**INSPECT TEAM EQUIPMENT**

**CONDITIONS**

You are a team leader, and your team is about to depart for a sortie.

**OBJECTIVE**

Inspect your team equipment for appearance, safety, and mission readiness.

**TRAINING AND EVALUATION**

**Training Outline**

1. Prior to departing for mission base, you should inspect your team's equipment. This inspection is conducted to ensure that all required team equipment is present and functioning properly. This is especially important for team gear:

a. Utilize the team equipment list provided by your wing to assess your team's equipment capability.

b. As you perform the inspection, check for the *serviceability* of items. Make sure items work by testing them. If the distress beacon Direction Finder has no batteries, it is worthless. Make sure you check team radios to make sure they can transmit and receive.

2. To perform an inspection,

a) Announce what you are inspecting, and have your team get the items out ahead of time. For example, if you have two vehicles and you are checking fire extinguishers, have the drivers pull the extinguishers out and show them to you.

b) Make sure you see the items yourself. Don't just ask someone if they have something. They could make a mistake, or not know that someone else has taken or broken the item.

c) Determine what equipment is mission critical, and pay special attention to it. For example: maps of the search area, the distress beacon DF for aircraft searches, etc.

d) Inspect for accountability and serviceability - do you have it, and does it work.

e) Use the following checklist, or your wing's equipment list.

## **GROUND TEAM EQUIPMENT LIST**

### **MANDATORY EQUIPMENT**

Vehicle- Mounted FM transceiver  
Handheld FM transceiver  
Signal Panels, (2'x6'), 6  
Water, 5 gallons  
Blood Borne Pathogen Kit (s)  
Shovel/E-Tool  
Camera with film (instant preferred, 35mm acceptable)

### **MISSION KIT**

CAPF-78, 5  
CAPF-106, 25  
CAPF-109, 10  
ICSF 214, 10  
Road Map  
Aeronautical Sectional Chart  
Ground and UDF Team Task Guide

### **DISTRESS BEACON-DF KIT**

Direction Finding Unit With Antennas  
1/4 Wave Vehicle Antenna  
Rubber Or Telescoping Antenna  
Spare Batteries, Tools To Install Them

### **CRASH SITE SURVEILLANCE KIT**

Staple Gun with Spares  
Warning Placards, 20  
Binoculars  
Instant Camera  
Barrier Tape, 500 meters

### **FIRST AID KIT**

Backpack-Type Bag  
4"X4" Gauze Pads, Wrapped, 25  
Eye Pads, Wrapped, 5  
Trauma/Combine Dressings, 10  
Triangular Bandages, 10  
Kling Roll Bandage, 3 And 6", 10  
Handi-Wipes/Alcohol Pads  
Latex Gloves  
Antiseptic Swabs, 20  
Adhesive Tape, 1" X 10 yd, 2  
Adhesive Tape, 2" X 10 yd, 2  
Triage Tags, 10 (opt.)  
Notepad, Pencil  
Cold Packs, 4 (opt.)  
Hot Packs, 4 (opt.)  
BP Cuff, Stethoscope (opt.)  
Bandage Scissors (opt.)  
Forceps (opt.)  
Utility Scissors  
Penlight

### **ADVANCED EQUIPMENT**

Litter, stokes or folding  
Spotlight, vehicle  
Cyalume Lightsticks  
Global Positioning System  
Tape Recorder  
Public Address System  
Radiological Monitoring Kit  
Night Vision Devices  
Nylon Rope, 1/2"x100'  
Generator/light Set

## **URBAN DF TEAM EQUIPMENT LIST**

Vehicle-Mounted FM transceiver, Handheld FM transceiver, or Cellular Phone  
Signal Panels, (2'x6'), 6 (Optional)  
Camera with film (instant preferred, 35mm acceptable, Optional)  
Appropriate local Maps and Charts  
Ground and UDFT Task Guide  
Flashlight with spare batteries  
Spare Notepad with pens/pencils  
Direction Finding Unit With Antennas  
1/4 Wave Vehicle Antenna  
Rubber Or Telescoping Antenna  
Spare Batteries for DF unit and Tools To Install Them  
Global Positioning System (Optional)

3. If mission essential items are missing or broken, try to borrow one from another team or purchase new equipment immediately. If the lack of the item might hinder the mission, let the Ground Branch know.

### **Additional Information**

More detailed information on this topic is available in Chapter 2 of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Inventory a team vehicle, and determine what is missing and unserviceable. Provide the team member with a vehicle loaded with team equipment, and the gear checklist. Provide a driver who knows where everything is located.

**Brief Team Leader:** Tell the team leader to inspect the team equipment and determine what is missing or unserviceable.

### **Evaluation**

<u>Performance measures</u>	<u>Results</u>	
1. The team leader determines what items are missing	P	F
2. The team member checks all items, especially electrical items, for serviceability	P	F
3. The team member determines what items are unserviceable	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.

**DIRECT TEAM REFIT AFTER SORTIE**

**CONDITIONS**

You are a ground team leader of a team that has just completed a sortie and returned to mission base.

**OBJECTIVES**

Correctly identify and explain the steps taken to prepare yourself for the next sortie or mission, using the “4 R’s”:

**TRAINING AND EVALUATION**

**Training Outline**

1. The minute a sortie is completed, the team must begin preparing for the next sortie. This means taking care of team equipment, individual equipment, and team members’ personal needs. There is a great temptation after a hard day in the field to not worry about your equipment for a while. But on a mission, you must be prepared to leave on another sortie at a moment’s notice. As team leader, you must direct refit actions, and inspect to ensure these actions are completed.

2. As soon as you complete a sortie or mission, while you are going to debrief, you should direct your team to begin refit according to the “4 R’s”. Each person refits their individual gear. You should assign individuals to refit items of team gear. Give specific tasks to specific people - don’t assume “somebody will do it”.

a. **REPLENISH** - Replacing lost or used up items.

1) Team Equipment: After a sortie, ensure you still have all required equipment. Use your copy of the Ground Team Resource form to inventory team gear. If something is missing, see if another team has a spare. Refill water cans, check batteries, fuel vehicles, replace medical supplies, etc. Make a list of those items you need to purchase or acquire.

2) Individual equipment - Each person checks their own equipment, fills canteens, puts a new meal in their field gear etc. They should inform you of items they have lost, or cannot replenish.

b. **REPAIR** - inspecting items for serviceability and making what field repairs you can.

1) Team Equipment - check any item you used. Clean vehicle windows and headlights.

2) Individual Equipment. This includes repairing rips in clothing, patching holes in ponchos or tents with duct tape, etc. Remove mud from boots, and polish them to maintain water resistance.

c. **REPACK** - after the above steps, repack your team and individual gear so you can move out at a moment’s notice. Don’t be caught with your equipment spread throughout the house (or your tent at mission base) when the call to move occurs.

d. **REST** - AFTER you have inspected your team to make sure refit is complete, ensure they are resting. The next sortie or mission could happen at night. Keep track of where your team members are, so you can assemble them quickly when needed.

### **Additional Information**

More detailed information on this topic is available in Chapter 2 of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Prepare a Ground Team Resource Form to represent a fictional 8 person, 2 vehicle ground team. Give it to the team leader.

**Brief Team Leader:** Tell the team leader that he has just returned from a search sortie with this team. Ask the team leader brief you on his plan for refit. Then ask him what he would do when the refit tasks are complete.

### **Evaluation**

#### Performance measures

#### Results

The individual:

- |  |   |   |
|--|---|---|
| 1. Describes, in order, how to REPLENISH, REPAIR, REPACK and REST after a sortie.  | P | F |
| 2. Gives responsibility for specific items of team equipment to specific personnel | P | F |
| 3. States and describes what he will inspect before beginning the REST activity.   | 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-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.

**LOCATE A POINT ON A MAP USING LATITUDE AND LONGITUDE**

**CONDITIONS**

Given an aeronautical chart, road map, or topographical map with latitude and longitude lines. You are away from mission base, mounted or dismounted, and must locate your location on map in order to report your location to mission base, an aircraft or another ground element using latitude and longitude. Or, you are coordinating with another search element (ground or air) who has told you his location using the latitude and longitude. You want to plot this point on your map.

**OBJECTIVES**

Within 1 minute, the team member announces the correct latitude and longitude of the marked point (using the smallest gradations of latitude and longitude printed on the map), using correct terminology, and, within 1 minute, can plot a point on the map given the latitude and longitude orally.

**TRAINING AND EVALUATION**

**Training Outline**

1. Latitude and longitude are the objective position measurements used on aeronautical charts. Many road maps and topographical maps also are gridded using this system.
  - a. Lines of longitude run north-south on the map. Lines of latitude run east-west.
  - b. Both latitude and longitude are measured in degrees, minutes and seconds. One minute is 1/60th of a degree, and one second is 1/60th of a minute. In the continental US, latitude numbers are read from south to north (bottom to top), and longitude numbers are read from east to west (right to left)
  - c. Each line of latitude is labeled as either North (if it is above the equator) or South (if it is below the equator). Each line of longitude is labeled as East (if it is east of a longitude line called the Prime Meridian) or West (if it is west of the Prime Meridian)
  - d. To read a lat-long coordinates the symbol “°” means degrees, an apostrophe ( “ ‘ ”) means minutes, and a double apostrophe ( “ “ ”) means seconds. Always read the latitude before the longitude.
  - e. Example: 32° 33’ 44” N, 45° 12’ 52” E means “32 degrees, 33 minutes, and 44 seconds North Latitude, 45 degrees 12 minutes and 52 seconds East Longitude”
  - f. On larger scale maps, or when pinpoint accuracy is not required, seconds are not used. For example, 45° 12’ N, 22° 36’ W is read as “45 degrees, 12 minutes North Latitude, 22 degrees 36 minutes West Longitude.”
2. To find the lat-long designation of a known point on the map
  - a. Find the latitude:
    - 1) Find the numbers of the latitude degree lines to the immediate north and south of the point. Write down the lower of the two. (For example, if the point is between 45° and 46° North latitude, write down

“45°”. Also write down if that latitude line is labeled as “North” or “South” (above the equator it will always be “North”).

2) From latitude line chosen above, count up the number of minutes that the point is from the line using the tick marks on the edge of the map (or in the grids if the map is gridded) until you reach the last minute marking before your point. Write down the number of minutes.

3) From the last minute mark, count up the number of seconds to your point (if the map is of a large scale, such as an aviation chart, it will not have marks for seconds. Either stop with the minute measurement, or estimate seconds). Write down the number of seconds.

b. Find the longitude.

1) Find the numbers of the longitude degree lines to the immediate east and west of the point. Write down the lower of the two. (For example, if the point is between 22° and 23° West longitude, write down “22°”). Also write down if that longitude line is labeled as “East” or “West” (in the western hemisphere it will always be “West”).

2) From longitude line chosen above, count left the number of minutes that the point is from the line using the tick marks on the edge of the map (or in the grids if the map is gridded) until you reach the last minute marking before your point. Write down the number of minutes.

3) From the last minute mark, count left the number of seconds to your point (if the map is of a large scale, such as an aviation chart, it will not have marks for seconds. Either stop with the minute measurement, or estimate seconds). Write down the number of seconds.

c. NOTE: If the map is not marked with minutes or seconds, you will have to estimate. Remember, there are 60 minutes in a degree and 60 seconds in a minute. So, if the point is halfway between two degrees, it is at the 30 minute point. If it is one quarter the distance from one degree to another, it is at the 15 minute point. Use the same logic to determine seconds if the map is only graduated in degrees and minutes.

c. Make sure the lat-long coordinate you have written down is in the format Degrees°, Minutes', Seconds" (North or South) Latitude, Degrees°, Minutes', Seconds" (East or West) Longitude,

3. To plot a point given the lat-long coordinate:

a. Find the correct latitude line and count up the correct number of minutes and seconds (below the equator you would count down, not up).

b. Find the correct longitude line and count left the correct number of minutes and seconds (in the eastern hemisphere you would count right, not left).

c. Mark the point.

### **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:** Mark a point on a map or chart gridded with latitude and longitude, and give the map to the student. . Tell him whether or not she must report seconds, or just degrees and minutes (depends on the scale of the map). Pick a different grid location from the point and write down the latitude and longitude coordinates. Ensure you have a timer. Because this task is timed, it is necessary to make sure that the student and work area is prepared for testing. The map should be open and complete. If copies of maps are used, they should include all references normally available on the full map to take the exam.

**Brief Student:** Ask the student if s/he is prepared. Tell the student to tell you the latitude and longitude of the point. Then orally give him the latitude and longitude you wrote down and tell him to show you where that point is on the map.

## Evaluation

### Performance Measures

### Results

Determining the grid of a known point. The student:

- |  |   |   |
|--|---|---|
| 1. Announces the correct latitude degrees, minutes and seconds within tolerance (see below)  | P | F |
| 2. Announces the correct latitude designation "North" or South"                              | P | F |
| 3. Announces the correct longitude degrees, minutes and seconds within tolerance (see below) | P | F |
| 4. Announces the correct longitude designation "East" or "West"                              | P | F |
| 5. Performs the above steps within 1 minute of time  | P | F |

*NOTE: The minimum accuracy for this task is to be within 30 seconds of the correct answer for a map graduated in minutes. If the map is large enough scale to be graduated in seconds, then the needed accuracy should be increased. For dismounted work, a ground team with proper maps should be able to plot positions within 10 seconds.*

The individual determines the location of a designated grid:

- |   |   |   |
|---|---|---|
| 6. Plots a point on the map within 1 minute using the correct latitude and longitude degrees, minutes and seconds within tolerance (see accuracy note above). | 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.

**LOCATE A POINT ON A MAP USING THE CAP GRID SYSTEM**

**CONDITIONS**

Given an aeronautical chart, road map, or topographical map gridded with the CAP grid system. You are away from mission base, mounted or dismounted, and must plot your location on a CAP gridded map in order to report it, an aircraft or another ground element. Or, you are coordinating with another search element (ground or air) who has told you his location using the CAP grid system. You want to plot this point on your map.

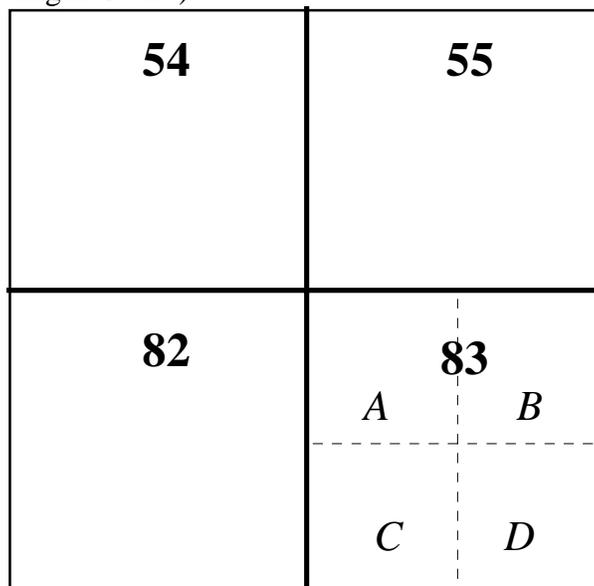
**OBJECTIVES**

Within 1 minute, the team member announces the CAP grid and sub-grid that the point is located in, using correct terminology, and can plot a point on the map given the CAP grid coordinates orally.

**TRAINING AND EVALUATION**

**Training Outline**

1. The CAP grid system is designed for use on aeronautical charts, but can be adapted to any map with latitude/longitude markings around the edge.
2. A grid is a 15 minute latitude by 15 minute longitude box. This is done by dividing the 30 minute by 30 minute boxes already on the aeronautical chart into fourths. Each grid is identified with a number. (For example “I am located in Grid 54”).
3. To locate a position more precisely, mentally divide each grid into four quadrants. The Northwest quadrant is “A”, the Northeast is “B”, the Southwest is “C”, and the Southeast is “D”. Say the quadrant letter after the grid number (for example, “I am in grid 54 B”).



*Example of CAP grids (54,55,82 and 83) and lettered quadrants (83A, 83B, 83C, and 83D)*

4. To find the grid designation of a known point on the map

- a. Find the grid number the point is in.
  - b. Determine which quadrant of the grid the point is in (A, B, C, or D)
5. To plot a point given a grid number and quadrant letter:
- a. Find the appropriate grid on the map (the grid numbers increase as you look left to right and top to bottom on the map).
  - b. Mark the point in the appropriate lettered quadrant of that grid.

**Additional Information**

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

**Evaluation Preparation**

**Setup:** Mark a point on a CAP gridded map or chart and give the map to the student. Pick a different grid location from the point and write down the grid and quadrant. Ensure you have a timer.

**Brief Student:** Tell the student to tell you the CAP grid and quadrant designation of the point. Then orally give him the grid and quadrant of the point you wrote down and tell him to show you where that point is on the map.

**Evaluation**

<u>Performance Measures</u>	<u>Results</u>	
The individual determines the grid of a known point:		
1. Announces the correct grid number and quadrant within 1 minute	P	F
The individual determines the location of a designated grid:		
2. Finds the correct numbered grid and quadrant 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.

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

**CONDITIONS**

Given a objective topographical map

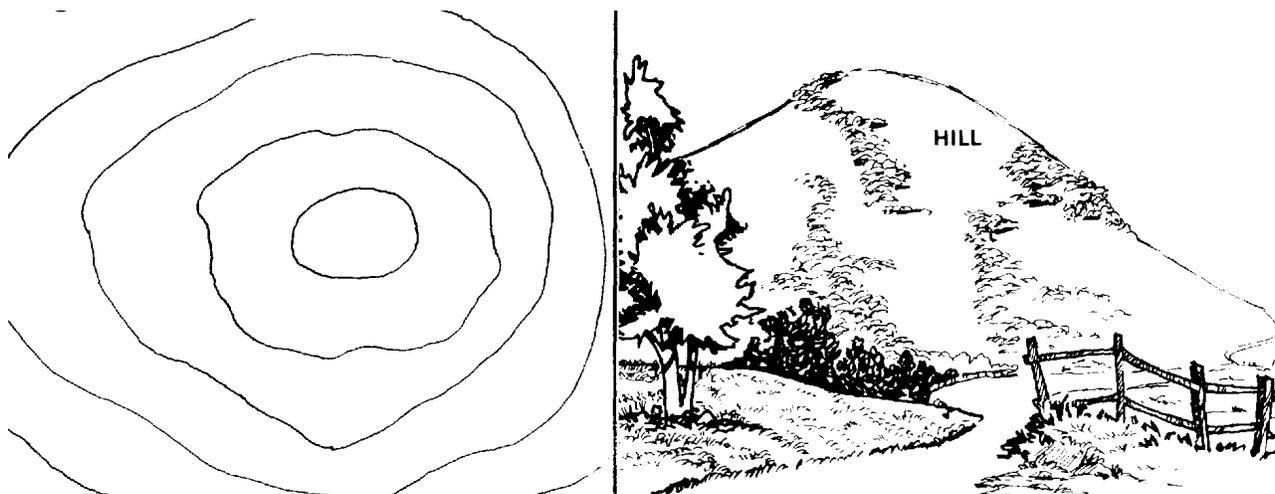
**OBJECTIVES**

Correctly identify the five major terrain features on the map.

**TRAINING AND EVALUATION**

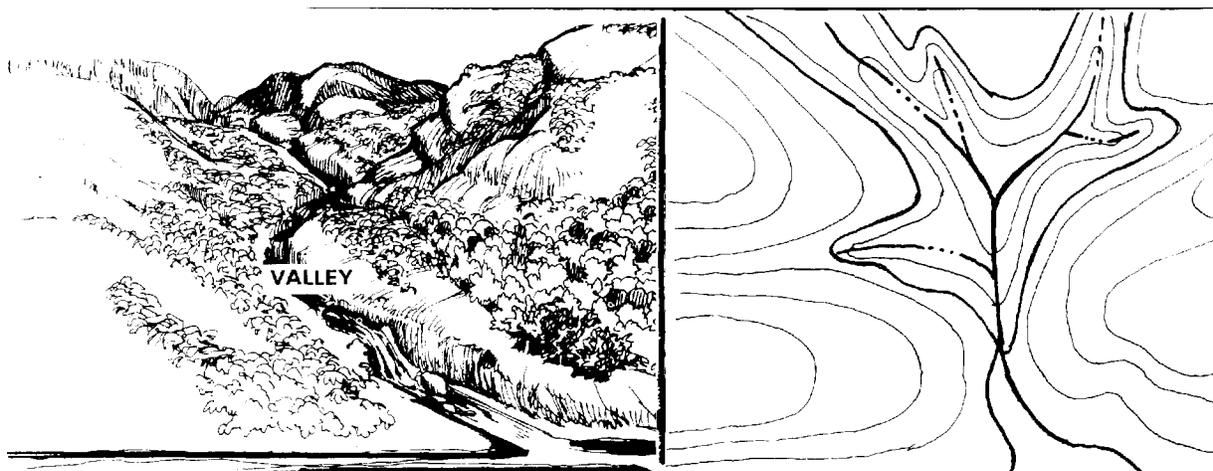
**Training Outline**

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.

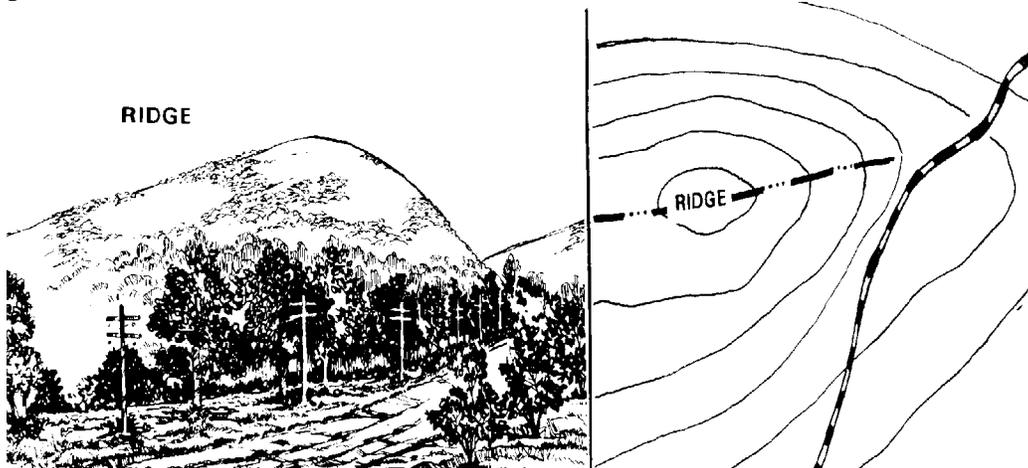


*A hilltop on the map (left) and in the wilderness (right)*

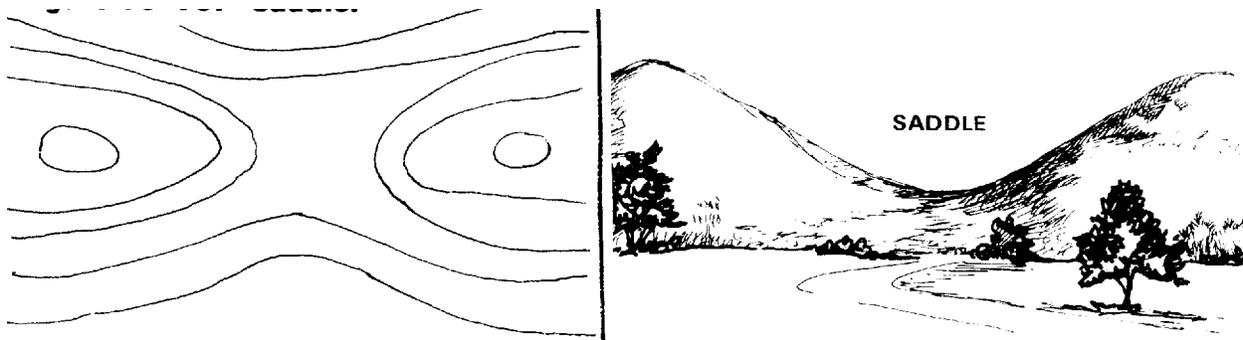
2. Valley -- Terrain goes up in three directions, and down in one, usually a river or a stream flows in it.



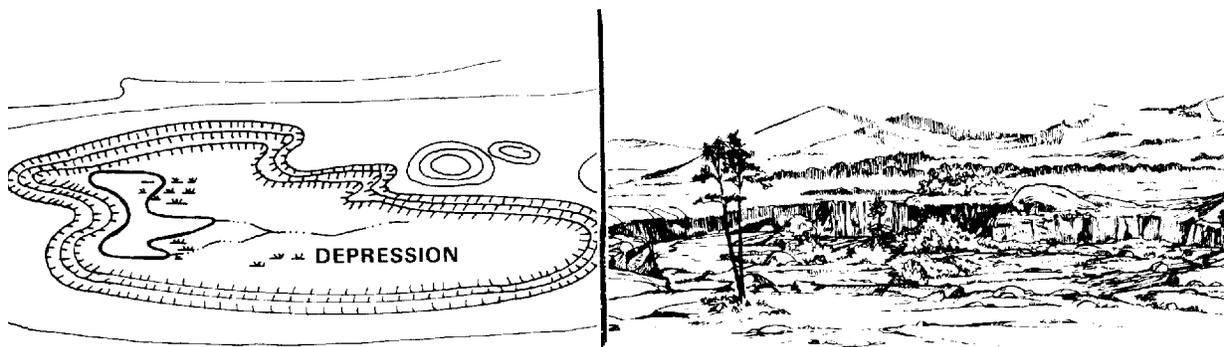
3. Ridge -- A line of high ground with height variations along its crest. The terrain slopes down in three directions and up in one.



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**

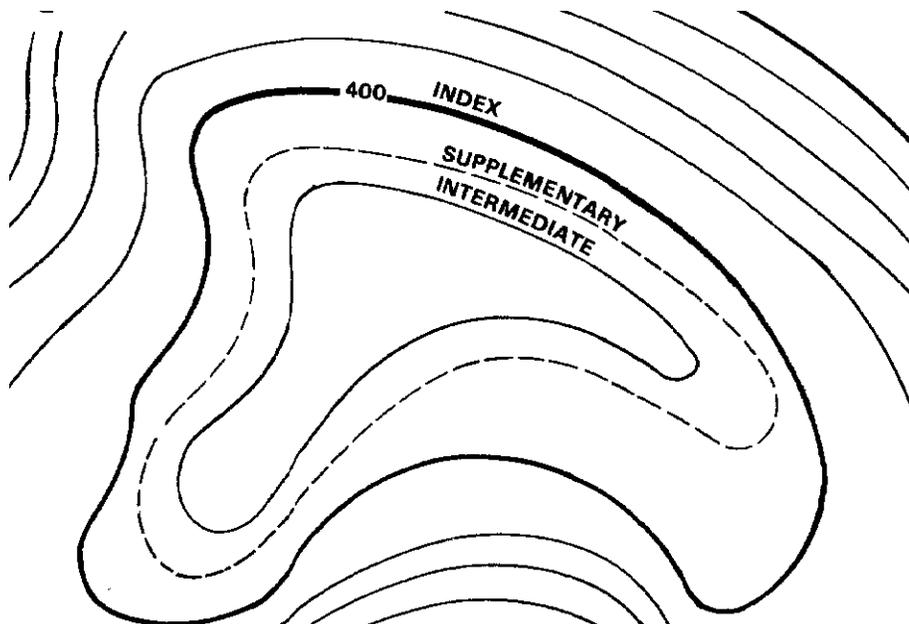
**Training Outline**

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).

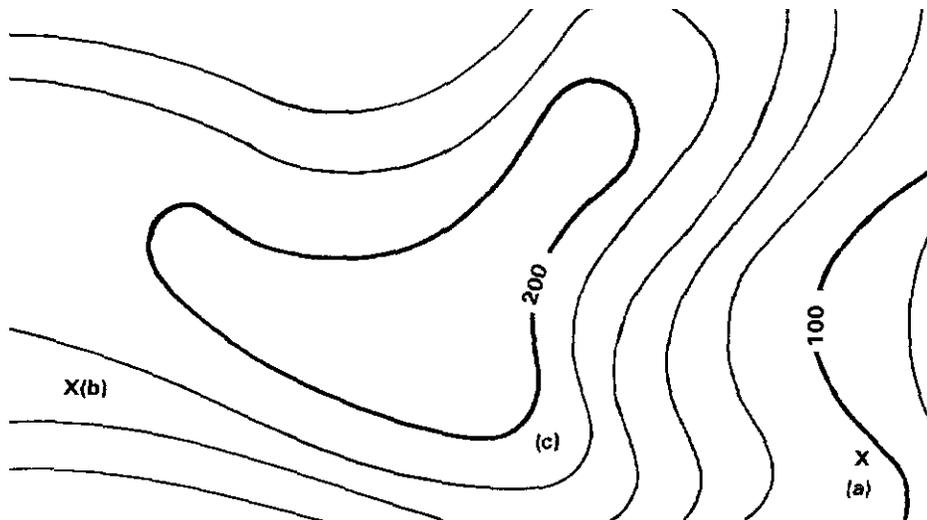
b. Find the numbered index contour line nearest the point.

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.

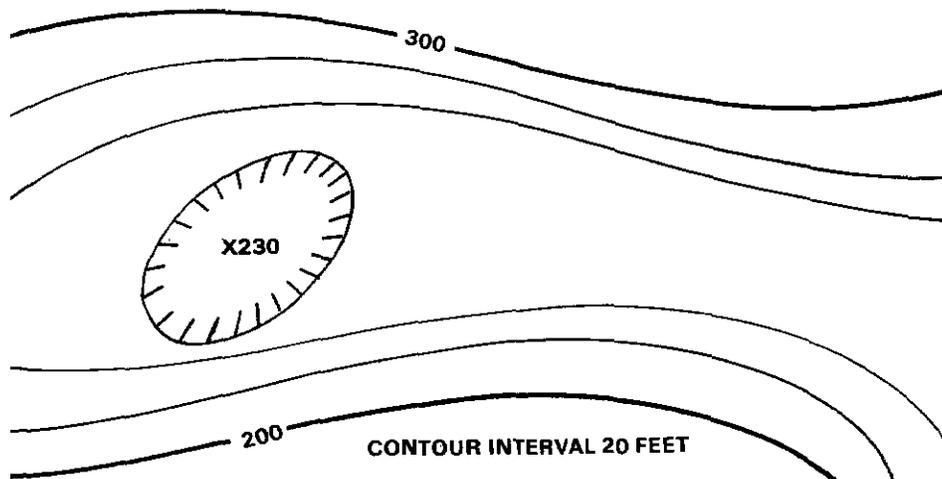
e. If the point is halfway between two contour lines, add half the contour interval.

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-0214**  
**PLOT AN AZIMUTH ON A MAP**

**CONDITIONS**

Given a map, pencil, a straight edge, a known point and a grid azimuth.

**OBJECTIVE**

Within 2 minutes, plot the azimuth from the given point on a map.

**TRAINING AND EVALUATION**

**Training Outline**

1. In some situations, a team might be given an azimuth to plot. A good example would be if another ground team has determined a bearing to a distress beacon from their location. Plotting this azimuth on your map could help with the search.
2. To plot an azimuth.
  - a. Plot the point on the map.
  - b. Ensure that the azimuth is a grid, not a magnetic azimuth. If it is magnetic, convert to a grid azimuth.
  - c. Place the protractor on the point with the “0” degree mark oriented to grid north. Place a pencil mark at the degree mark on protractor corresponding to the azimuth.
  - d. With a straightedge, draw a line from the first point (the position) through the mark you just made.

**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 a map, mark a point. Give the student the map, a pencil, a straightedge, and a protractor.

**Brief Team Leader:** Verbally give the team leader a grid azimuth. Tell the team leader to plot the azimuth from the point marked on the map within 2 minutes.

**Evaluation**

Performance measures

Results

- |   |   |   |
|---|---|---|
| 1. Draws a line from the point along the correct azimuth +/- 2 degrees 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-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-0218**  
**LOCATE OWN POSITION ON A MAP USING TERRAIN ASSOCIATION**

**CONDITIONS**

In the field during daylight, while at an unknown location on the ground, given a objective topographic map, protractor, and a known point on the ground.

**OBJECTIVE**

Point out your position within a 100 meter tolerance within 5 minutes.

**TRAINING AND EVALUATION**

**Training Outline**

1. Determine the four cardinal directions.
2. Determine the type of terrain feature on which you are located. (see task O-0209, Identify the Major Terrain Features on the Map.)
3. Determine what type of terrain features surround your position.
4. Orient the Map. (see task O-0216 - Orient a Map to the Ground Using Terrain Association).
5. Relate the terrain features on the ground to the ones shown on the map.
6. Point out your position 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:** Select a relatively open area that has prominent terrain features shown on the map. Provide a map, pencil, paper, protractor and compass to the student.

**Brief Student:** Tell the student to locate his position on the map.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Determines 4 cardinal directions	P	F
2. Identifies the terrain feature on which he is located	P	F
3. Identifies terrain features around location	P	F
4. Orients map to ground	P	F
5. Relates the terrain features on the ground to those of the map.	P	F
6. Identifies own location on Map (+/- 100 meters)	P	F
7. Performs all steps within 5 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-0220**

# **MOVE FROM POINT TO POINT IN A VEHICLE USING A MAP**

## **CONDITIONS**

Given a vehicle with driver, state road map, topographical map, and compass.

## **OBJECTIVES**

Successfully navigate to three designated points and return to the start point within 1 hour.

## **TRAINING AND EVALUATION**

### **Training Outline**

1. Virtually every sortie begins with driving to some point. Additionally, entire hasty searches must be done mounted (in a vehicle). Because of this, team leaders must become proficient at mounted navigation.
2. To find a point by mounted navigation
  - a. On the map, determine the route you will take (see task O-0209 - Identify Topographical Symbols on a Map)
  - b. Choose checkpoints along the way. These should be easily recognizable features along your route, such as bridges or road intersections. Every point where you will turn should be a checkpoint.
  - c. Measure the distance between each checkpoint (see task O-0211 - Measure Distance on a Map) and write it down.
  - d. Move to the point:
    - 1) Don't try to navigate and drive. Let someone else drive so you can concentrate on the map.
    - 2) Use the odometer to measure the distance between points. That way you'll know when checkpoints are coming up, or if you passed them by accident.
    - 3) Rely on terrain association whenever possible (see task O-0217 - Locate Own Position by Terrain Association). The metal in your vehicle will make compasses unreliable.
    - 4) If you must use a compass. Get out of the vehicle and move at least 10 yards away from it. This keeps the metal in the vehicle from affecting the compass (See task O-0201 - Use a Compass).
    - 5) Don't speed, stop abruptly, block traffic or break any traffic laws. Make sure to park clear of the road when stopping, and be careful when exiting the vehicle when traffic is driving by.

### **Additional Information**

More detailed information on this topic is available in Chapters 3, 5 and 7 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Pick at least three points, approximately 5 to 10 miles apart. At each point, place a marker, clearly visible from the road, with a number on it. Choose points that are located on the topographical map, but are not marked on the objective state road map. Provide the team leader with a vehicle and driver, a compass, a state road map marked with all three points (their approximate locations) and a topographical map marked with all three exact locations.

**Brief Team Leader:** Tell the team leader what the signs at each point look like. Tell the team leader to travel to each point, record the number on the sign, and then return to you within 1 hour. (You may allow more time if the route chose requires driving at slow speeds).

NOTE: If you are testing a group of people, pick more than three points, and have each person go to different combinations of points.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Successfully finds all three points, and reports the numbers	P	F
2. Returns within 1 hour	P	F
3. Does not perform any unsafe action (such as speeding), or direct the driver to perform any un-safe action.	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-0301**  
**DETERMINE DISTRESS BEACON BEARING**

**CONDITIONS**

You are a member of a ground team searching for an distress beacon that is at least 1/2 a mile away. You have been given the task of operating the detection finding (DF) equipment.

**OJECTIVES**

Indicate the direction to the distress beacon +/- 10 degrees within 10 minutes.

**TRAINING AND EVALUATION**

**Training Outline**

1. The majority of CAP search missions are electronic searches for distress beacons. Correct use of DF equipment is critical to these searches. The first step to locating distress beacon is to determine the general direction to the location of the distress beacon. (NOTE: This section was written using the popular L-tronics LH-16 l-per as the DF unit. Technical procedures should be adapted by units with other equipment).

2. To determine the bearing to a distress beacon:

a. Assemble the LH-16 on the antenna mast assembly and hold vertically in front of you, such that you can see the receiver controls.

b. Turn the unit on, turn the volume and sensitivity full up, set the MODE knob to DF. Set the FREQUENCY KNOB to the appropriate frequency (121.775 for practice distress beacons, 121.5 and 243 (military distress beacons or harmonic transmitted by basic distress beacons) for actual distress beacons, many military aircraft carry civilian distress beacons; civilian distress beacons by law transmit on both frequencies.). Listen for the distress beacon signal. If you have no signal, move to some other location where you do.

c. Once you have the signal, swing the antenna slowly through a full circle around you and determine where the needle centers. If it centers more than twice, analyze your location to determine if you might be dealing with more than one signal, reflections or interference from power lines, etc. Remember all directions where the needle centers.

d. Switch to the REC mode and determine where the signal strength is greatest (needle deflected farthest to the right, signal direction is off the left antenna mast). The strongest signal direction should be in one of the same directions that the needle centered in the DF mode.

e. Switch back to the DF mode and locate where the needle centers in the direction where the REC mode receives a maximum signal. While one person keeps the unit aligned on the signal, another stands behind him and takes a compass bearing (see task O-0201 - Use a Compass.)

f. As you get closer to the signal, decrease the sensitivity to avoid overloading the receiver.

## Additional Information

More detailed information on this topic is available in Chapter 6 of the Ground Team Member & Leader Reference Text.

## Evaluation Preparation

**Setup:** Set up a practice beacon transmitting on 121.775 MHz at least one half mile away from the test site. Take a set of DF equipment, and ensure that one can get a good strong signal to the practice beacon (verify the direction off a map). With a compass, determine the magnetic bearing to the practice beacon. Disassemble the DF equipment and give it to the student.

**Brief Student:** Tell the student to assemble the DF gear, determine the direction to the practice beacon, and point it out to you. When he points, check the bearing with a compass.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Correctly put the DF equipment into operation.	P	F
2. Uses DF and REC (as applicable) to determine the direction to the practice beacon.	P	F
3. Points out the direction to the practice beacon +/- 10 degrees.	P	F
4. Completes all steps within 10 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-0302**  
**LOCATE A DISTRESS BEACON**

**CONDITIONS**

You are a member of a ground team searching for a distress beacon (ELT/EPIRB). You have been given the task of operating the detection finding (DF) equipment. You have used the direction finding (DF) technique to close in on the signal, and now you know the distress beacon is nearby.

**OJECTIVES**

Within 30 minutes, use signal strength techniques to locate a practice beacon located within 200 meters of your location. (This is for a wooded area. More time should be allotted for an urban or airport environment).

**TRAINING AND EVALUATION**

**Training Outline**

1. Once the team has moved close to the distress beacon using the DF technique, that technique may become less effective. You know you are close when the signal is loud even with the sensitivity turned down. At this point signal strength techniques may be used easily. There are two techniques - normal signal strength and body blocking. These techniques can be used with DF equipment, or any portable radio or scanner that can pick up the distress beacon frequency (121.775 for practice, 121.5 and 243 for civilian and military distress beacons respectively).

2. To locate the distress beacon:

a. Assemble the DF gear or radio and tune to the appropriate frequency. Use a short antenna (such as a “rubber duck” flexible antenna). Ensure you can hear the signal of the distress beacon. Adjust the sensitivity and volume so that you can barely hear the signal.

b. Body Blocking. To determine a bearing to the distress beacon, place the receiver at waist level and rotate in a circle until weakest signal is heard. At this point the target distress beacon should be directly behind you, since your body is blocking the signal from the distress beacon.

c. Signal Strength. If you are sure the distress beacon is located nearby (for example, if you are at an airfield and you are sure it is in one of the planes) simple walk through the area.. As the signal strength increases rapidly, you are getting closer to the distress beacon. Decrease the sensitivity (or increase squelch), reduce the antenna height or slightly offset the receiver frequency as you get closer to permit body-blocking.

**Additional Information**

More detailed information on this topic is available in Chapter 6 of the Ground Team Member & Leader Reference Text.

## Evaluation Preparation

**Setup:** Hide a practice beacon transmitting on the practice frequency approximately 200 meters from the test site. Take a set of DF equipment, and ensure that one can get a good strong signal to the practice beacon. Disassemble the DF equipment and give it to the student. The evaluator should be prepared to document the time it takes each student to locate the practice beacon. If multiple students have difficulty locating the practice beacon within the time allotted, the evaluator may need to re-evaluate students or the time allotted based on location.

**Brief Student:** Tell the student to locate the practice beacon within 30 minutes (add more time if the practice beacon is in an urban or airport environment).

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
Within 30 minutes the individual:		
1. Correctly puts the DF equipment into operation.	P	F
2. Locates the distress beacon/practice beacon within 30 minutes (more may be needed for urban/airport searches)	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-0303**  
**DEACTIVATE A DISTRESS BEACON**

**CONDITIONS**

You are part of a ground team that has found a distress beacon. Either there were no victims, or the victims have been taken care of, and the site is considered safe.

**OBJECTIVES**

Take the proper steps to deactivate the distress beacon.

**TRAINING AND EVALUATION**

**Training Outline**

1. It is essential to turn off any distress beacon (ELTs, EPIRBs, PLBs, or other transmitters. A transmitting distress beacon can mask other distress signals. The vast majority of distress beacon finds are non-distress situations, where an distress beacon has gone off accidentally. In a distress situation, the primary responsibility is to help any victims. Additionally, no one should put themselves in danger to deactivate an distress beacon.
2. Once the distress beacon has been found the following procedures should be followed (only a, c, e and f apply in distress situations):
  - a. Immediately report the find to mission base.
  - b. Attempt to locate the aircraft/boat owner in order to gain access to the distress beacon.
  - c. If the owner is unavailable, contact the FBO or harbor master and local law enforcement officials to permit access to the aircraft or boat.
  - d. Locate and deactivate the distress beacon, monitoring 121.5 Mhz to insure the signal ceases. If possible disconnect the battery. Distress Beacons are normally located in the tail section of small planes. Large commercial planes sometimes have a small access door on the fuselage to access an on/off switch to the distress beacon. **ALWAYS MAKE SURE THE SIGNAL HAS STOPPED - YOU MIGHT HAVE THE WRONG DISTRESS BEACON.**
  - e. Leave a distress beacon deactivation sticker, so that the owner knows that his distress beacon has been deactivated if not present when silenced. If you don't have a sticker, leave a note where the pilot will find it.
  - f. Immediately inform the incident commander and pass on the following information:
    - 1) Manufacturer, make, model and serial # of the distress beacon.
    - 2) Battery type and expiration date.
    - 3) Time of deactivation.
    - 4) Aircraft or boat ID # (if appropriate)
    - 5) Any other pertinent information.
  - g. If the distress beacon cannot be deactivated, disconnect the antenna or construct an 'antenna tent' with aluminum foil so that the signal will no longer interfere with SARSAT. While this process is going on, the team leader should contact the incident commander to keep him informed and to receive further instructions.

**Additional Information**

More detailed information on this topic is available in Chapter 6 of the Ground Team Member and Leader Reference Text.

### Evaluation Preparation

**Setup:** Provide the team member with a distress beacon or a mockup with a power switch, battery and data plate. Have a distress beacon deactivation sticker available, but don't provide it unless the team member mentions it.

**Brief Team Leader:** Tell the team leader that he has located an active distress beacon in a locked airplane at an airport. Ask the team member what steps he or she would take to deactivate it. When the team member states that he/she would try to find the owner, ask the team member what he/she would do if the owner is not available. After this, give the team member the distress beacon and ask him to demonstrate what he/she would do. Finally, ask what the team member would do if the distress beacon could not be deactivated.

### Evaluation

<u>Performance measures</u>	<u>Results</u>	
The team member states he or she would:		
1. Immediately report the find to mission base.	P	F
2. Attempt to find owner	P	F
3. If owner is not available, attempt to locate FBO, marina operator or law enforcement.	P	F
4. Turns off distress beacon and disconnects battery (actually demonstrates this) .	P	F
5. Monitor 121.5 to ensure distress beacon is deactivated.	P	F
6. Leave a distress beacon sticker or note behind	P	F
7. Inform the mission coordinator: (actually gather this information off the distress beacon)	P	F
a. Manufacturer, make, model and serial # of the distress beacon.		
b. Battery type and expiration date.		
c. Time of deactivation.		
d. Aircraft or boat ID # (if applicable)		
e. Any other pertinent information.		
8. If the distress beacon cannot be deactivated, cover the antenna with an antenna tent.	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.

**TRIANGULATE ON A DISTRESS BEACON SIGNAL**

**CONDITIONS**

You are part of a ground or urban direction finding team assigned to locate a distress beacon that is 4 kilometers away. Your team has a direction finder, and has taken magnetic azimuths to the distress beacon from two points that are at least 45 degrees apart. You have a map, protractor, straightedge and a pencil.

**OBJECTIVE**

Utilizing the azimuths recorded, within 10 minutes, plot the location of the distress beacon within 500 meters by triangulation on a topographic map or aeronautical chart.

**TRAINING AND EVALUATION**

**Training Outline**

1. When involved in a distress beacon search, the ground or urban direction finding team will probably be given a fairly large area to cover. Through the use of triangulation, the team leader can quickly narrow the search area.
2. In order to locate a distress beacon by triangulation:
  - a. Conduct a map study to determine where to take reading from. Specifically look for:
    - 1) High terrain features. these are normally places where you are most likely to receive the signal.
    - 2) Travel routes.- to determine how to traverse the area.
    - 3) Presence of major power lines and buildings, which can block the distress beacon signal. These are bad places to take a reading.
  - b. Obtaining readings from at least two locations. Two methods can be used to determine where to take readings.
    - 1) Connect the DF unit to an external 1/4 wave-2 meter antenna mounted on the team vehicle. Drive around the search area in a set pattern until the signal is heard, at which point direction finding can be accomplished using the mast antenna assembly.
    - 2) Drive to high, clear locations and attempt to take readings using the mast antenna assembly. If no signal is heard, proceed to the next location.
  - c. At each site where a reading can be taken.
    - 1) Plot the point on the map where you took the reading.
    - 2) Determine the azimuth to the distress beacon (see task O-0301: Determine Distress Beacon Bearing).

3) Plot the azimuth on the map, making sure to convert from magnetic to grid azimuth (see task Determine and Plot Azimuths on a Map).

4) Remember to report each reading to mission base. Include your location, the bearing to the distress beacon, and the signal strength.

d. **TRIANGULATION:** Extend the line you drew for each azimuth until they cross. The distress beacon should be located at or near the intersection of the lines (this technique is most accurate when the lines intersect at a 90 degree angle. The more parallel the lines, the less accurate the plot). Take additional readings and draw more lines to increase the accuracy of the plot.

#### **Additional Information**

More detailed information on this topic is available in Chapters 5 and 6 of the Ground Team Member and Leader Reference Text.

#### **Evaluation Preparation**

**Setup:** On a map, determine a distress beacon location. Determine two points where DF readings could be taken and mark them on a map. Make sure to choose two points which will result in azimuths to the practice beacon that will intersect at no less than a 45 degree angle and are about 4 kilometers from the practice beacon. Determine the azimuth from both points to the practice beacon location, but don't mark these, or the practice beacon location on the map. Convert the azimuths to magnetic azimuths. On a sheet of paper, write down the practice beacon location and the magnetic azimuths from each point. Provide the individual to be tested with the map, a pencil, a protractor, and a straight edge.

**Brief Team Leader:** Tell the team leader that he is leading a team on a practice beacon search. Ask the team leader to describe two methods of finding a points to take DF readings from. Then tell the team leader that his team has taken readings from the two marked points. Give the team leader the magnetic azimuth from each point, and tell him or her to locate the practice beacon by triangulation within 10 minutes.

#### **Evaluation**

<u>Performance measures</u>	<u>Results</u>	
1. Describes both methods of determining locations to DF from.	P	F
2. Locates the practice beacon within 500 meters.	P	F
3. Completes step 2 within 10 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-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.

c. Spiral - or contour pattern is used when the search area encompasses a hill or mountain. The team starts at the top and spirals down and outward according to the contour of the land. Again this pattern requires a high degree of orienteering skill.

d. Route - searches are frequently for missing person searches. The GSAR team will be instructed to search along roads or trails as they represent high probability areas. To do this the team splits into two sections to cover both sides of the road. The team leader walks along the road in a position where he can control both flanks.

4. SEARCH FORMATIONS. There are three objective search formations used: the line, contour and wedge.

a. Line (sometimes referred to as a skirmish line): x x x x x x x x  
x

The skirmish line is used in open, flat terrain or when there is a large number of search team members on the line. The team leader positions himself far enough in the rear to maintain control over the entire line. For large lines, it may be necessary to assign squad leaders to control part of the line while the team leader directs the squad leaders. Usually the most experienced searchers are the ends and center of the line or are scouts sent ahead to warn the team leader of upcoming hazards.

b. Contour (or Echelon):  
x  
x  
x                      ---> Higher Ground in this direction  
x                      x  
x

The echelon or contour pattern is used on hilly steep terrain, with the line of searchers conforming to the contour of the ground. This formation ensures that rubble dislodged members on higher ground does not roll down and strike other members. Again the team leader positions himself where he can best control the line. Guidelines concerning placement of experienced members and squad leaders still apply.

c. Wedge (or double echelon):  
x  
x                      x  
x                      x                      x  
x                      x                      x

The double echelon or inverted V formation is used in flat, wooded or overgrown terrain. It's advantages are that the team leader maintains better control over the team members and the area is better covered by overlapping lines of sight.

5. SEARCH INTERVAL. The search coverage factor or probability of detection for a sortie will usually be assigned by the ground search coordinator. This number is usually based on how far apart searchers are spaced on a line. However; in the field it is extremely difficult to judge how many feet or meters to separate people and to maintain this exact separation as a team moves through varying terrain. To solve this the team leader can base his decision on how far apart to separate his searchers based on the terrain and visibility according to the following rules of thumb:

a. Spacing team members such that when on line any given team member can barely see only the team member to his left or right gives approximately a 50% probability of detection.

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**

<u>Performance measures</u>		<u>Results</u>
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:

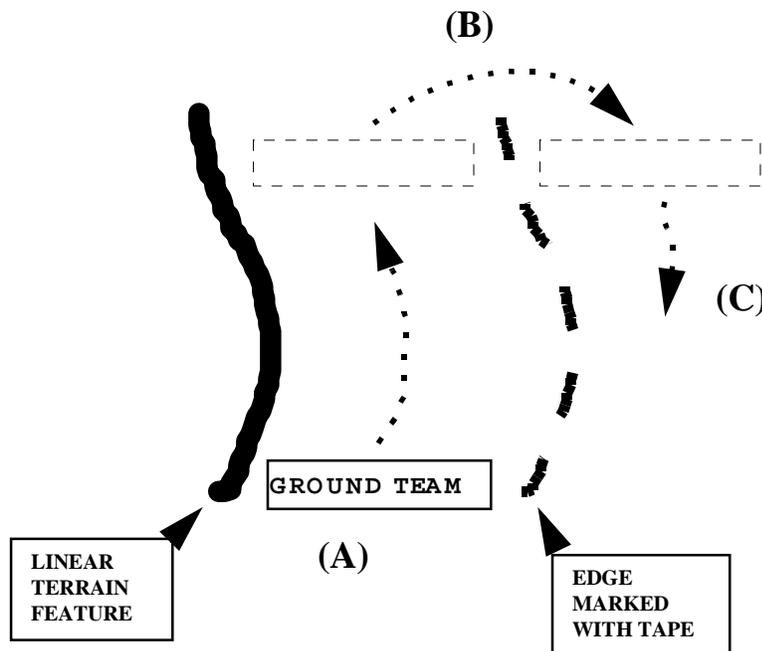
a. Make sure the team member marking the edge of the search line is marking at the proper interval (you can see each mark from the last one).

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**

Performance measures	Results	
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.

**DIRECT TEAM ACTIONS ON LOCATING A CLUE**

**CONDITIONS**

You are leading a search team moving when a team member discovers the possible search clue.

**OBJECTIVES**

Direct your team through the necessary actions to protect the clue, and search the immediate area for additional clues.

**TRAINING AND EVALUATION**

**Training Outline**

1. When a team member discovers a possible clue, the team leader must direct the team actions properly in order to prevent the clue from being disturbed, preventing destruction of other possible clues in the area, find any other clues in the area, and report the information to mission base.
2. When a team member spots a clue, they will halt the team and alert the team leader. The team leader should then:
  - a. Ensure the team is halted.
  - b. Move to the team member who found the clue.
  - c. Survey the immediate area for safety hazards such as falling debris, rotting tree limbs, pits and holes, etc., and for other clues in the immediate area.
  - d. Protect the clue: Have a team member mark off the immediate area with flagging tape. Neither the team leader nor members should actually touch nor disturb the clue. This will allow man-trackers, dog teams, etc. to work with an undisturbed source.
  - e. Search the immediate area. Based on the initial survey, search the area around the clue in order to detect any other possible clues in the area. Search carefully, because the objective is to find other clues without significantly disturbing the area. If necessary, call other team members over to assist. Ensure they know of any safety hazards, and where the clue(s) are (so they do not disturb them). Usually the best plan is to have two or three experienced people sweep the area around the clue location while the rest of the team remains off to the side.
  - f. Report the clue to mission base. Follow any instructions they give you.
  - g. On a high visibility marker by the clue, record the time, date, and clue number (based upon a standard issue log). In the team log, record the time, date, clue number, location, and description of the clue.
  - h. Do not leave the area until directed by mission base.

**Additional Information**

More detailed information on this topic is available in Chapters 7 and 15 of the Ground Team Member and Leader Reference Text.

### Evaluation Preparation

**Setup:** Pick a piece of terrain and put a clue (article of clothing, piece of aircraft debris, etc.) on the ground. Ensure the team leader has his field gear. Place the team leader at least 20 yards from the clue. Position yourself at the clue. (As an option, you can place another clue nearby to be found in the subsequent search of the area.)

**Brief Team Leader:** Brief the ground team leader that he is leading a team on a search. Tell him that you will play the role of a team member who has just spotted a clue. Tell him to take all necessary actions. Finally, inform him that that you will also play the roles of all team members and mission base, if he wants to call them on the radio (simulate radio traffic).

### Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Halts the team in place	P	F
2. Performs a survey of the immediate area.	P	F
3. Has a team member mark the clue	P	F
4. Doesn't disturb the clue, or allow anyone else to disturb it	P	F
5. Has team sweep area for additional clues	P	F
6. Reports the clue detection to mission base	P	F
7. Follows instructions for mission base	P	F
8. Does not leave the area until directed	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-0422**  
**DIRECT TEAM ACTIONS ON FIND**

**CONDITIONS**

You are leading a ground team when one of your team members discovers the search target.

**OBJECTIVES**

Direct team actions to identify the target, provide first aid, and protect your team.

**TRAINING AND EVALUATION**

**Training Outline**

1. At the point when an individual team member first sights the object of a SAR mission, the search phase ends and the rescue and recovery phase begins. In this process, the safety of the search objective and your team are the primary concern.
2. If a team member discovers the search target, you, the team leader, should:
  - a. **Halt the Team.** Have everyone remain in place. You should only call personnel in to the scene as they are needed. Be especially sensitive to exposing younger cadets to accident sites.
  - b. **Assess the Situation.** Move to the search target. As you approach, survey the surrounding area for safety hazards such as falling tree limbs, wreckage, fires, hazardous materials, etc. Do not put your team in danger.
  - c. **Provide Life Saving first aid.** Direct your medically trained personnel to aid the injured to the extent of your team members' training. Ensure anyone who comes in contact with the victims or the crash site takes appropriate protective measures against blood borne pathogens. Leave obviously deceased personnel alone. Determine if you need outside agency assistance, such as an ambulance, helicopter, or coroner. Whenever practical, use ambulances or helicopters for evacuation of the injured - don't do it yourself.
  - d. **Positively identify the target.** Make sure you've found what you think you've found. Verify the tail number off the airplane, ask conscious survivors their names, and check physical descriptions against your mission briefing. If you haven't found all the missing persons, organize a hasty search of the surrounding terrain. Ask victims where the others are.
  - e. **Send a Report to Mission Base.** Advise the mission base of your situation. Once your team medics are at work and you know what you have, send a find report. If you are still searching for some victims, make that a part of your report. If you find them, you can always update your report.
  - f. **Assist Local Authorities** - Establish a staging area on the nearest road, post a team member there, and let mission base know where it is. If necessary, establish a separate entry-control point. Depending on the location of the staging area, you may not need a separate entry control point from the staging area. Either way, until the scene is turned over to another agency, you are responsible for documenting who or what enters or exits the site. Be prepared to assist the local fire department, medical examiner, FAA or NTSB representatives as required. This includes establishing traffic control points, area security, or assisting in the evacuation of survivors and victims. Any requests for assistance beyond the team leaders instructions from ground operations must be approved by the mission coordinator prior to rendering assistance.

g. **Safeguard the Area.** Assign at least two members of the team to sweep the entire area to determine the extent of the crash site. Use other team members to establish an initial perimeter around the site for security. Don't disturb any wreckage except as required to save lives. See Task O-0802 - Plan and Organize Site Surveillance.

### Additional Information

More detailed information on this topic is available in Chapters 7 and 15 of the Ground Team Member and Leader Reference Text.

### Evaluation Preparation

**Setup:** In a wooded area, place a simulated target with at least one simulated victim. Prepare a mission briefing describing the search target. Provide the team leader at least a standard ground team. Place the target along the route of travel of the team.

**Brief Team Leader:** Brief the ground team leader whether he is on a missing aircraft or missing person search and that one of his members has just spotted the target.

### Evaluation

<u>Performance measures</u>	<u>Results</u>	
The team leader:		
1. Halts the Team.	P	F
2. Assess the Situation.	P	F
3. Directs life-saving first aid.	P	F
4. Positively identifies the target.	P	F
5. Sends a Find Report in the appropriate format.	P	F
6. Establishes a link-up point	P	F
7. Safeguards the area.	P	F
8. Takes adequate precautions to safeguard team from hazards, including bloodborne pathogens.	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-0605**  
**EXTINGUISH A SMALL FIRE**

**CONDITIONS**

You have come across a small fire.

**OBJECTIVES**

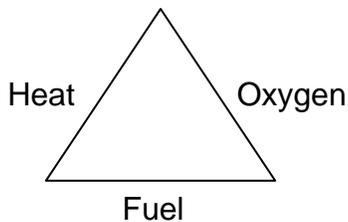
Safely extinguish the fire.

**TRAINING AND EVALUATION**

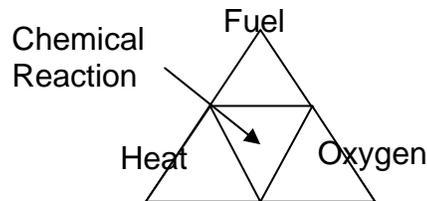
**Training Outline**

1. Fire burns in two basic modes: flaming and surface combustion (or smoldering). The surface or smoldering fire is represented by the fire triangle with the three sides representing fuel, heat and oxygen. Flaming combustion is represented by the fire tetrahedron (pyramid) with the four sides representing fuel, heat, oxygen and an uninhibited chemical chain reaction.

**Fire Triangle**



**Fire Pyramid (unfolded)**



2. The fuel portion of either type of fire may be solid, liquid or gas. Oxygen may be that present in the air or in another solid, liquid or gaseous chemical which contains oxygen (an oxidizer). Combustion (fire) starts when there is the proper mixture of oxidizer, fuel and either heat or a chemical reaction.

3. To extinguish a fire, the triangle or pyramid must be broken by:

- a. removing the fuel or
- b. removing the oxygen or
- c. reducing the heat or
- d. interfering with the chemical reaction.

4. The most common method of extinguishing a fire is by reducing the heat, in other words, cooling the fire, using water. This is most effective on common combustibles such as wood and paper.

5. Cooling will not work on flammable liquids such as gasoline and grease. To extinguish fires such as these, the fuel must be removed (such as closing a valve to stop the flow), displacing the oxygen (with a non-flammable gas for instance), or breaking up the chemical reaction with another chemical.

6. Fires are divided into four classes and fire extinguishers are classified the same to indicate what type of fire they are effective against:

a. Class A - Common combustibles such as wood, paper, cloth and many plastics. Water works well on these by cooling them below their ignition points.

b. Class B - Flammable liquids and gases. These must be extinguished by smothering (removing the oxygen), displacing the oxygen, removing the fuel or breaking up the chemical reaction.

c. Class C - Fires involving energized electrical equipment. Although there are special extinguishing agents for these, it is normally easiest to de-energize the circuit (turn off the power), then put out the resulting Class A or B fire.

d. Class D - Flammable metals. These are rare and require special techniques to extinguish.

7. Fire extinguishers also have a numerical rating which indicates the relative size fire it will extinguish. A 4A extinguisher will put out a Class A fire twice as big as a 2A extinguisher can and 4 times the size that a 1A extinguisher can extinguish.

8. The most common type of extinguisher is an ABC, with the most versatile being a 4A-20B:C (the C has no rating, it just indicates that the extinguishing agent is non-conductive). This type of extinguisher is effective against most small fires in a home or vehicle.

9. To use a fire extinguisher:

a. Make sure it is appropriate to the type of fire: A, B or C.

b. Make sure the fire is small. This means that if the extinguisher fails to put out the fire, you must be able to safely escape. If in doubt, retreat and call 9-1-1.

c. Start on the upwind side of the fire.

d. Follow the letters **PASS**:

**P = PULL** the pin at the top of the extinguisher that keeps the handle from being pressed. There is usually a wire or plastic tab that keeps the pin from falling out. This can easily be broken just by pulling on the pin. Then check the gauge. If it does not show a full charge, it should not be used because the effectiveness may be greatly degraded.

**A = AIM** the nozzle towards the fire. If the nozzle is at the end of a hose attached to the body of the extinguisher, detach the hose before aiming the nozzle.

**S = SQUEEZE** the handle to discharge the extinguishing agent. Use long or short bursts depending on the fire size and location, aiming at the base of the fire. Carefully move closer if the stream does not reach the fire.

**S = SWEEP** the extinguishing stream along the base of the fire. On liquid or grease fires, sweeping just above the liquid is important, otherwise the burning liquid may be spread around further. Move closer to the fire as it goes out, circling it if necessary.

- 1) The discharge may only last 30 seconds at the most, so have another extinguisher at the ready or plan to abandon the effort if the fire is not out.
- 2) Make sure the fire is out and be prepared for flare-ups.
- 3) If you don't know what is burning, don't attempt to put out the fire.
- 4) Don't attempt to extinguish hazardous material fires.
- 5) Approach burning vehicles from an angle, not head on or in direct line with the tires. When opening the hood of a vehicle with an engine fire, open it slightly, spray some extinguishing agent in, then open the hood the rest of the way. Be prepared for flare ups or a flashover.
- 6) If any doubt exists before or after a fire, notify authorities.

10. To extinguish an outdoor fire such as a campfire or small brushfire:

- a. Keep upwind of the fire
- b. Have all personnel, vehicles and equipment ready to clear out quickly.  
Use water if available. Do not use the drinking water supply if it cannot be easily replenished.
- c. Splash, spray or sprinkle water onto the fire, do not pour it on all at once. As the water is put on the fire, break up big pieces of material if possible, spread out any burning or smoldering material, turning it over to ensure that all areas are wetted. Continue to add water while disturbing the material until all signs of flame and glowing embers are extinguished. Dig up or overturn the soil under the burned area to try to mix the ashes into the soil.
- d. Using care, place your hand close to the burned area to ensure that it is cool. If not, add more water and continue disturbing the material until it is cool.
- e. After the fire is out and cool, ensure the burned material is adequately mixed in with the soil.
- f. Be prepared for flare-ups.
- g. If water is not available, or in combination with water if it is, throw soil, sand, etc. onto the fire while breaking up, spreading around and disturbing the burning material, mixing it in with the soil.
- h. Blankets, coats, shelter halves or similar objects of heavy fabric, not plastic or synthetic, can be used to extinguish flames by beating directly on the flames to smother them. This must be done directly on the flames, otherwise this action will fan the flames, causing the fire to grow in intensity. This technique can also be used in combination with water, and the objects should be wetted if it is.
- i. Campfires, signal fires and warming fires must always be completely extinguished and cool to the touch before leaving them.
- j. Efforts to extinguish a brushfire should only be attempted if the fire is very small, there is little or no wind and an escape route is planned. If in doubt, retreat and notify authorities.

### **Additional Information**

More detailed information on this topic is available in Chapter 9 of the Ground Team Member & Leader Reference Text.

### Evaluation Preparation

**Setup:** This exercise should be conducted with a fire protection agency. These agencies will provide instruction and in most cases, will have a safe area and supplies for igniting training fires and have fire extinguishers for students to use.

Establish a safe area away from combustibles with backup or alternate extinguishing methods to the one(s) the students will use. Have a fireproof container in which a small, controlled fire can be ignited, sufficient fuel to ignite a fire for each student to extinguish an ignition source(s).

NOTE: Fire protection personnel should start the fire and have the student extinguish the fire just built, but should also be prepared to put out the fire if necessary.

**Brief student:** Prior to igniting the test fire, the student is to list the four components necessary for fire, what the basic requirement is to extinguish a fire, the four classes of fire, the types of materials each represents and how to select the correct extinguisher for each, explain PASS, and list two safety considerations before attempting to extinguish a fire. Ignite a fire and have the student extinguish it.

### Evaluation

<u>Performance Measures</u>	<u>Results</u>	
1. Lists fuel, oxygen (oxidizer), heat and chemical reaction as the four components necessary for fire.	P	F
2. Explains the basic requirement to extinguish a fire is to remove one of the components necessary for fire.	P	F
3. Lists Class A, B, C, D fires.	P	F
4. Lists the type of material each type of fire represents.	P	F
5. Explains that the fire extinguisher selected must have the same letter type as the class of fire to be extinguished.	P	F
6. Explains each letter in PASS.	P	F
7. Lists two safety precautions prior to extinguishing a fire (stay upwind, fire must be small, be prepared for flare-ups, etc.)	P	F
8. Safely extinguishes a small fire using an extinguisher or technique appropriate to the type of test fire.	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.

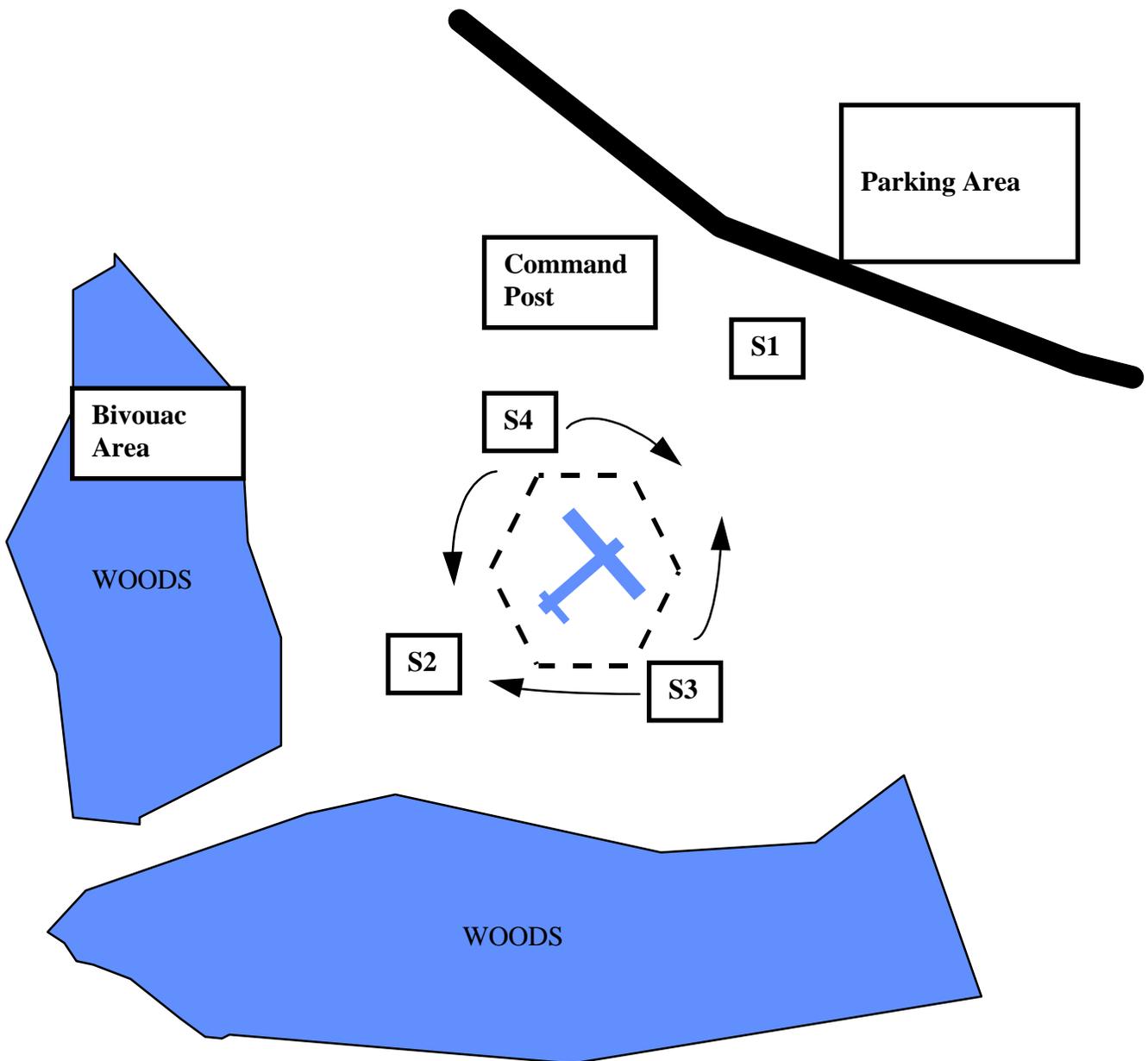
2) The bivouac area. This should be far enough away from the wreck to avoid destroying any evidence, out of the view of the public (if possible) and where you can easily call for team members as needed.

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.

**O-0803**  
**SUPERVISE A SITE SURVEILLANCE SHIFT**

**CONDITIONS**

You are leading a team in the field, and are assigned to conduct surveillance of a crashed aircraft, scene of victim location or other disaster site. All victims have been evacuated. You have already planned your site surveillance and organized your shifts (relief).

**OBJECTIVES**

Correctly, inspect, brief, post, and check your first relief. Politely and correctly deal with potential intruders.

**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 scene or other disaster scene is 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 site, which contains jagged metal, highly flammable fuel and/or possible contaminated blood.

a. Performance of this mission is made more difficult by the fact that CAP may not use any force or show of force in the execution of it's duties. Simply put, you cannot keep someone from entering the site if he wants to. You can inform him of the risks, both legal and safety related, of intruding. You can notify law enforcement officials. But you cannot physically threaten or restrain anyone.

b. Another important part of the site surveillance mission is public relations. Site surveillance personnel are in a "high visibility" position. Bystanders may be getting their first look at the Civil Air Patrol in Action. Reporters and photographers covering the crash may choose to cover the CAP ground team as well.

c. In order to accomplish the surveillance mission without the use of force AND present CAP in a positive light, appearance, politeness and professionalism are essential.

d. Once you have completed your surveillance plan, you must post your team members, and begin operations.

2. To post a relief, use the following steps. Each time a new relief comes on duty, go through these steps again. (Note: if you have enough personnel, you may appoint a sergeant of the guard to inspect, post and directly supervise the guard shift. However, you as the team leader are still responsible for the site.)

a. Assemble all members of the relief, preferably at a point where they can observe the site.

b. Inspect the relief for:

1) Proper uniforms, and grooming.

2) Field Gear. Sentries should have all their field gear with them at their posts. At the team leader's discretion, they can ground the pack at their post, but they should have all items. Especially check

water, rain gear, flashlights and batteries (if at night), whistle, and any other items essential to the sentry mission.

3) Knives. No knives should be visible on a sentry's gear or his person. This could constitute a show of force.

4) Knowledge of General Orders.

c. Brief the relief. Describe your plan. Make sure everyone knows what they are guarding, where all the guard posts are, where the command post is, and safety issues.

d. Post the relief. You may take one person at a time to his post, or move the whole relief around the perimeter, dropping off one person at each post. As you put each person on his post, brief him on the following items (Note: If there is already a guard at the post whom the new guard is relieving, let the old guard conduct the briefing.)

1) Exactly what he will be responsible for guarding

2) Where he should stand or walk

3) The guard post number

4) The locations of all other guard posts (by number)

5) The location of the team leader (and sergeant of the guard, if assigned)

6) Any special instructions for this post (for example, "If any cars pull up, tell them the detour is one mile back on the right.")

7) Any activity in the area, such as intruders.

8) Any safety issues, such as sharp objects, holes or spilled fuel in the area.

3. Once the relief is posted:

a. Make periodic inspections of all posts.

b. Maintain communications with the mission coordinator, either by radio or periodic phone checks.

c. If one of your sentries has a potential intruder, you should:

1) Identify yourself as the team leader.

2) Politely inform the intruder that to enter the perimeter could be construed as trespassing (you should explain that this is for their safety and for preserving evidence.).

3) If the intruder persists, let them know you are summoning local law enforcement. Let them pass - do not hinder them in any way.

d. If the press arrives:

1) Escort them to the IO, if present. Otherwise, you, as team leader, act as IO.

2) Give out no information on the accident or the conditions of the passengers without prior approval of the PAO or mission coordinator. If they have questions, give them the mission base phone number.

3) Allow them to take pictures, but only from outside the perimeter. It's fine for the press to take pictures of your team members while they work, but don't pose them for pictures.

e. If official investigators (police, FAA, NTSB, county coroner or medical examiner, etc.) arrive:

1) Determine their name and affiliation. Put it in the log.

2) Once the official's identity is confirmed take the steps outlined in Task O-0804 - Sign Over a Site.

3) If they do not wish to take over the site (Often officials may not take over the site if a higher official is known to be on the way. Some jurisdictions only allow shift supervisors or director level personnel to receive custody from other agencies):

(a) Escort them to the scene, and into it if they desire.

(b) Remind them not to disturb wreckage. If they do, note it in the mission log with before and after diagrams or photographs.

f. **Always, be polite and courteous.**

### **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:** This task is normally tested in conjunction with O-0802 - Plan and Organize Site Surveillance. You let the student use the plan he came up with for that task. If you are testing this task alone, prepare a mock crash site. Mark the wreck, any safety hazards and the perimeter. Prepare a written plan for surveillance, using the task P-0202 as a guide. Provide the team leader with 6-10 personnel with field gear to act as the ground team. Post 2 or 3 of them in a hasty perimeter around the site.

**Brief Team Leader:** Tell the student that he is the team leader and has been assigned to secure this crash site. Brief him on the plan using the format in Task P-0202 (or to use the plan he developed when being tested on Task P-0202. Tell him that all survivors have been evacuated, and there is currently no one on site. Tell him he has already established a hasty perimeter (the 2 or 3 members you posted), but that they have received no briefing. 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 post his rest relief and begin surveillance.. Tell him to you will play the role bystanders, intruders, and mission base. Finally, tell the team leader that the first relief must be in position in 1 hour.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
The team leader:		
1. Assembles the relief.	P	F
2. Inspects the relief for:		
a. Appearance	P	F
b. Essential and Non-Essential (Visible knives) field gear items	P	F
c. Knowledge of General Orders	P	F
3. Briefs the relief on the plan, location of guard posts and command posts, and safety issues.	P	F
4. Posts the relief, conducts briefing at each post on:		
a. What that sentry guards are to do.	P	F
b. Where he should stand or walk.	P	F
c. Locations all guard posts (by number).	P	F
d. Location of team leader and sergeant of the guard.	P	F
e. Any special instructions.	P	F
f. Any recent activity in the area.	P	F
g. Safety issues.	P	F
5. Completes posting of the relief within 1 hour of receiving the briefing.	P	F
6. Periodically inspects all posts.	P	F
7. Maintains communications with mission base.	P	F
8. Handles intruders, press, and investigators according to the checklist above.	P	F
9. Is polite and courteous.	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-0804**  
**SIGN OVER A SITE**

**CONDITIONS**

You are leading a team that is conducting site surveillance. An outside agency or another CAP ground team arrives on site to relieve you.

**OBJECTIVES**

Correctly brief your replacement, assist in posting their sentries (as needed) and sign over control of the site.

**TRAINING AND EVALUATION**

**Training Outline**

1. Once you take control of a site, you cannot leave it without formally relinquishing control. Normally, this is done by turning the site over to another CAP Ground Team, or to an outside agency such as the police or the FAA. In either case, you also want to get permission for the relief from the mission coordinator.

a. If you are being relieved by another ground team, you should brief them, help post their first relief, and then sign the site over in both team's mission logs.

b. If you are being relieved by an outside agency, the procedure is similar, except the signing over is more formal. Also, most agencies will not be posting sentries as CAP does.

2. To turn over control to another CAP Ground Team:

a. Get permission from the mission coordinator.

b. Brief the new team leader (and his team, if he desires) on:

1) The aircraft.

2) Any safety hazards in the area.

3) Your plan for surveillance including your communications plan, sentry locations, bivouac area, parking area, and command post.

4) Significant events (from your log).

5) Anything you expect to happen in the future. For example, "The FAA investigator called and said he will be here tomorrow morning at 10:00."

c. Assist the new team leader in posting his first sentry shift (relief). Have your sentries brief his sentries as they take over.

d. Once the new team leader has posted his sentries, he initiates the sign over. Each team leader signs the other team's log entry, stating that you (state your name and rank) briefed him (state his name) and that he assumes control of the crash site at this time. Remember, the new team leader initiates this. Until he says he is assuming control, you cannot leave.

- e. The new team leader notifies mission base that he has assumed control.
2. To turn over control to a representative of an outside agency:
- a. Get the representative's name and agency, and write them in the log.
  - b. Get permission from the mission coordinator.
  - c. Brief the representative new team leader on:
    - 1) The aircraft, victims, or other disaster remnants.
    - 2) Any safety hazards in the area.
    - 3) Significant events (from your log).
    - 4) Anything you expect to happen in the future. For example, "The FAA investigator called and said he will be here tomorrow morning at 10:00."
  - d. Assist the agency representative in setting up any security he desires.
  - e. Write the following or a similar entry in your log:

“ I \_\_\_\_\_ (representative's name) \_\_\_\_\_, representing \_\_\_\_\_ (his organization) \_\_\_\_\_, hereby accept responsibility for the scene involving (victims' name, aircraft number, make, model, fuselage and trim color, if known) I am releasing \_\_\_\_\_ (your name) \_\_\_\_\_ of the Civil Air Patrol from any further requirement to secure the site. I have been completely briefed by - \_\_\_\_\_ (your name) \_\_\_\_\_. I acknowledge that the scene appears to be in good order, and any movement of wreckage, fatalities and/or parts thereof have been described to me.
  - f. Have both you and the representative sign and date this log entry.
  - e. Notify mission base that you have turned over control.

### **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:** Set up a simulated crash site or other surveillance site, with a perimeter and sentries (this can be done outdoors, or on a terrain model or sketch). Prepare a simulated log of the key activities since the team took over the site.

**Brief Team Leader:** Tell the student that he is the team leader and has been assigned to secure this crash site. Brief him on the security plan, including safety and communications plans. Give him the log and tell him that the log represents what has transpired since his team arrives.

Step 1 - Tell him that another ground team has arrived to relieve his team. Have him take the appropriate actions.

Step 2 - Tell him that, instead, the FAA investigator or local Sheriff arrives to relieve him. Have him take the appropriate actions.

## Evaluation

<u>Performance measures</u>		<u>Results</u>
<i>Step 1 (sign over to another ground team)</i>		
The team leader:		
1. Obtains permission from the mission coordinator.	P	F
2. Brief the new team leader on the status of the victims, aircraft or other items within the perimeter, safety hazards, site surveillance plan, significant events, and expected future events.	P	F
3. Assists the new team leader in posting his first sentry shift (relief).	P	F
4. Once the new team leader is ready, correctly logs the sign over and has the new team leader sign it.	P	F
5. Signs the other team leader's log	P	F.
<i>Step 2 (sign over to a representative of an outside agency)</i>		
The team leader:		
6. Logs the representative's name and agency.	P	F
7. Obtains permission from the mission coordinator.	P	F
8. Brief the representative on the status of the victims, aircraft or other items within the perimeter, safety hazards, site surveillance plan, significant events, and expected future events	P	F
9. Assists the representative in posting his security (if applicable)	P	F
10. Prepares the sign over statement listed above	P	F

11. Signs and dates it, and has the representative sign and date it. P F

12. Notifies the mission coordinator of sign over 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-1001**  
**DIRECT TEAM ACTIONS AT MEETING POINT**

**CONDITIONS**

You are the leader of a GSAR team that has just been alerted for a mission. You have designated a place for team members to meet and assemble for movement to the mission base. Your team members and the team vehicles have just arrived.

**OBJECTIVES**

Performs necessary inspections and organizes the team within 20 minutes.

**TRAINING AND EVALUATION**

**Training Outline**

1. When the team leader arrives at the unit's meeting point prior to departing for mission base, certain actions must be taken prior to departure. These actions will ensure the team readiness to participate on the mission and ensure adequate contact is maintained with the home unit for communicating with family members of mission personnel.
2. To accomplish this the team leader should take the following actions, in any order.
  - a. Complete two copies of the CAPF 109 for the entire team.
  - b. Inspect each person for key equipment items. Before you take someone on a mission, you must ensure that they have the minimum equipment needed to survive and be effective. This is not the same as a full inspection; you're merely checking for the basics. If anyone expected to be a member of the team does not have these basic items, **DON'T BRING THEM TO THE MISSION**. Persons needed at mission base to perform other duties with different equipment requirements may often travel with your team for convenience sake. You'll spend more time caring for their needs than searching for your target. Basic items include:
    - 1) Current CAP ID card and current CAPF 101 certifying the person as a Ground Team Member or Ground Team Member Trainee.
    - 2) Appropriate clothing for the climate, for example proper uniform, orange safety vest, gloves and coat in the winter time, etc.
    - 3) Appropriate food, water, sleeping gear, and shelter.
    - 4) Anything else you think is necessary (such as flashlights for night missions).
    - 5) For all vehicle drivers, (including those just driving to mission base) a valid state driver's license from any state is required. For corporate vehicles that will be used on the mission, the driver must possess a valid CAP Driver's license from any state in addition to a valid state driver's license.
  - c. Ensure drivers complete vehicle safety inspections in accordance with CAPF 73 (Daily CAP Vehicle Inspection Report). Don't use any vehicle that fails the inspection without the permission of the Incident Commander. This includes privately owned vehicles.

- d. Assign personnel to vehicles, and have the driver’s supervise the packing of personal equipment.
- e. Inspect critical team equipment. Check those items critical to the mission, to make sure you have them and that they are functional. For example, maps, radios, distress beacon DF Kit, etc.
- f. Assign jobs to team members as necessary (Assistant Team Leader, team medic, navigator, and log keeper, or radio operator for example).
- g. As time permits, start mission paperwork (CAPF 109, and ICSF 214).
- h. Have the log keeper start the team log.

**Additional Information**

More detailed information on this topic is available in Chapters 1, 2, and 3 of the Ground Team Member and Leader Reference Text.

**Evaluation Preparation**

**Setup:** Provide a ground team of at least four individuals with personal equipment, one ground team vehicle, and copies of CAPF 73, CAPF 109, and ICSF 214. Have a stopwatch or timer. The person being tested may use any part of their equipment, including this book, to perform the task.

**Brief Team Leader:** Tell the Team leader that his team has just assembled at the meeting point. Tell him what sort of mission the team is going on (choose any that seem appropriate to the team’s equipment), and that he has 20 minutes to perform all necessary actions before moving to mission base.

**Evaluation**

Performance measures

Results

NOTE: Steps may be performed in any order.

1. Ensures all members sign in (legibly) on an ICSF 214 and leaves a copy with a responsible person who is not going on the mission.	P	F
2. Inspects team members uniforms, equipment and ID cards. Rejects any team member without adequate equipment or certification.	P	F
3. Ensures vehicle safety inspections are complete. Rejects any vehicle failing inspection.	P	F
4. Assigns personnel to vehicles and directs driver’s supervising packing of personal gear.	P	F
5. Inspects critical team equipment for the mission.	P	F
6. Assigns team duties.	P	F
7. Starts mission paperwork.	P	F
8. Starts mission log.	P	F

9. Performs all tasks within 20 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-1002**  
**ESTABLISH A HELICOPTER LANDING ZONE**

**CONDITIONS**

You are leading a search team, and have been directed to prepare a helicopter landing zone. (LZ). It can be either day or night.

**OBJECTIVES**

Select a good site for the (LZ). Take the steps necessary to prepare it, and direct the helicopter in.

**TRAINING AND EVALUATION**

**Training Outline**

1. Occasionally, police, military or medevac helicopters may be working with CAP ground teams, especially for search and evacuation. In these situations, ground teams may be called upon to select and prepare a landing zone (LZ) for a helicopter.

2. To establish a helicopter landing zone:

a. Whenever possible, establish radio communication with the pilot, and have him tell you what he wants you to do.

1) Follow his instructions, even if they differ from what is listed below.

2) If you don't have an appropriate radio, attempt to relay through someone who does (policeman, mission base, CAP aircraft, etc.)

b. Prepare the landing zone:

1) The LZ must be large enough to allow for the helicopters approach, landing, and turn around.

2) Attempt to find a large area that will permit a 15 degree approach and takeoff angle.

3) Remember, the higher the barriers, the longer the LZ must be.

4) Attempt to find the landing zone that is oriented with the long axis generally into the wind.

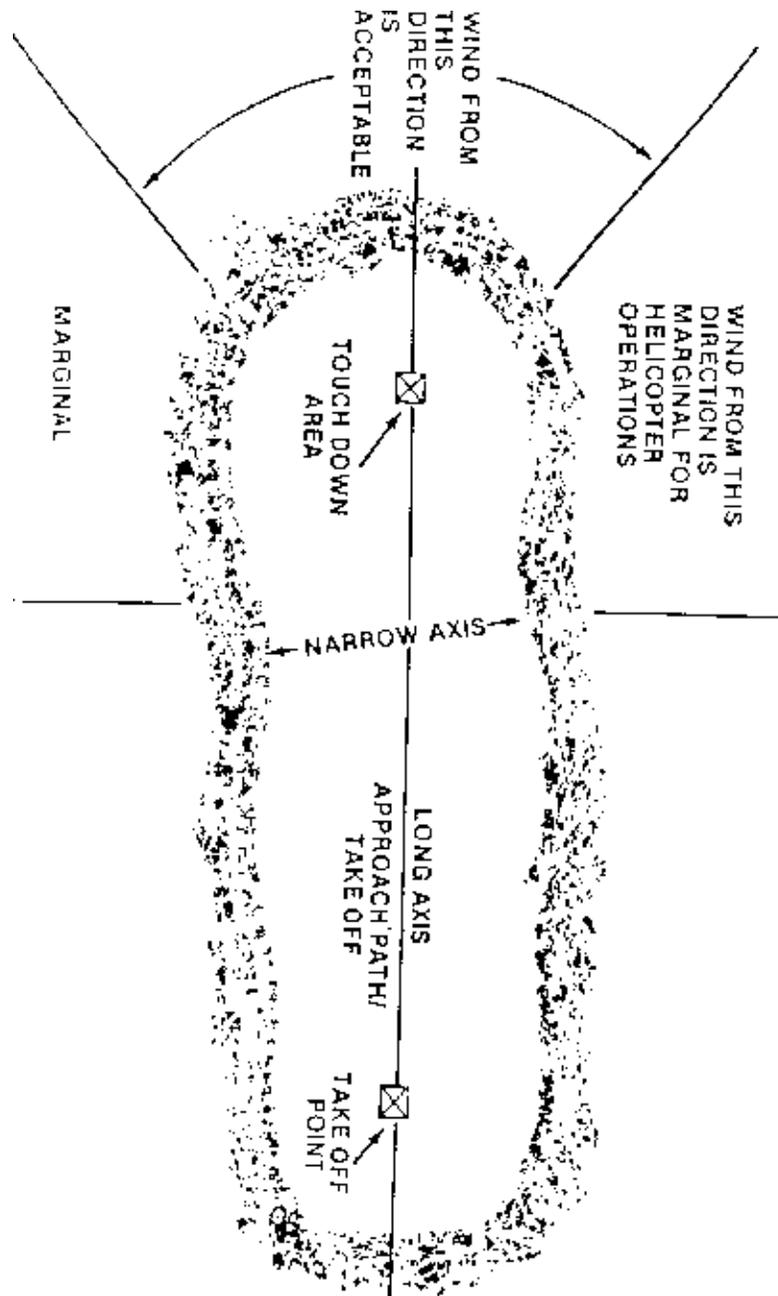
5) Remember that wires are extremely difficult for the pilot to see when approaching the LZ.

6) The touchdown zone must be free of obstacles that might damage the bottom of the helicopter, that is, tree stumps, large rocks, etc.

7) Remove all loose brush from areas that the helicopter may be landing in, hovering around, or taking off from.

8) Mark landing zones, if needed, with a signal panel (stake or weight it down to keep the rotors from blowing it away). Indicate wind direction via streamers, smoke, etc. (don't obscure the LZ with smoke!)

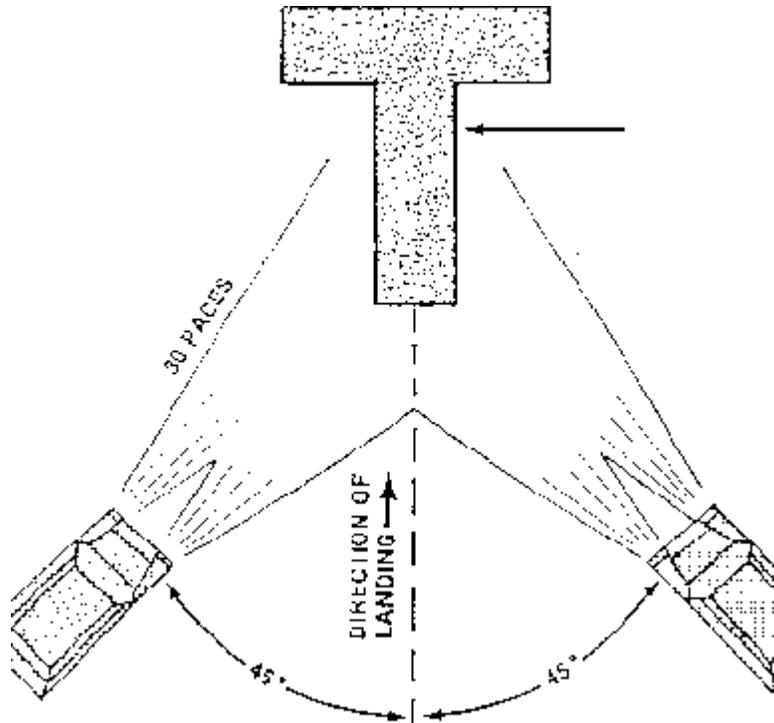
9) Keep unauthorized personnel away!



c. At night, do all the above, plus:

- 1) Be especially aware of any hazards such as power lines, fences, trees, etc. that the pilot may not be able to see.
- 2) Park vehicles with low beams on approximately 40 to 50 feet from the helicopter landing area, offset from the helicopter approach route. (see diagram below)
- 3) Never shine lights at helicopter which may blind the pilot.

### Helicopter Landing Zone



#### 3. To direct the helicopter down.

a. Whenever possible, establish radio communications with the pilot. Describe the landing zone, the wind speed and direction (the direction the wind is coming from), and any obstacles.

b. Get the pilot's attention with signal panels, signal mirrors, waving, etc. Show him where the LZ is.

c. If the pilot wishes, place a signal man at the upwind end of the LZ. The signal man should use the hand signals listed in Attachment B of the Ground Team Member and Leader Reference Text. Only volunteer this service if you have someone fully trained in the signals. Incorrect signals can be more damaging than no signals at all. (The signal man should always wear eye protection).

d. **REMEMBER** - The pilot is in charge. He is responsible for the safe operation of the aircraft. He has a right to ignore anything you tell him, and land wherever he chooses. Your job is to help him according to his wishes. He has landed that helicopter many more times than you have!

#### 4. To approach or exit the helicopter.

a. Wait for permission to board or exit from the pilot.

b. Approach or leave the helicopter from near the front so the pilot can see you at all times. Never approach from the rear 180 degrees.

c. No smoking around the helicopter.

d. Secure hats and other loose items to protect against rotor winds.

e. Keep long-handled tools, litters, antennas and similar items away from rotor blades.

f. Keep you head down at all times. The slower the rotor blades are turning, the lower they will dip towards the ground.

g. Never approach or leave a helicopter from any side where the ground is higher than where the helicopter is standing, or you may walk into a rotor blade.

### **Additional Information**

More detailed information on this topic is available in Chapter 11 and Attachment B of the Ground Team Member and Leader Reference Text.

### **Evaluation Preparation**

**Setup:** Take the team leader outdoors. He may use any item of field gear he normally carries (including this book).

**Brief Team Leader:** Tell the team leader to select a landing site for a helicopter. Tell him to describe to you all the actions he would take to prepare the landing site. If he attempts to contact the helicopter, tell him he is unsuccessful. After he is complete, ask him what additional things he would do if the landing was at night.

### **Evaluation**

<u>Performance measures</u>	<u>Results</u>	
The team leader:		
1. Attempts to establish communications with the pilot.	P	F
2. Chooses a suitably large, flat area, oriented into the wind, free of obstacles, with good approach and departure routes.	P	F
3. Describes how he would clear all loose debris.	P	F
4. Describes how he would mark the LZ and indicate wind direction.	P	F
5. Describes lighting of the LZ at night. (and does not shine bright lights at the pilot).	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-1101**  
**CONDUCT WITNESS INTERVIEW**

**CONDITIONS**

You have been informed that there is a person who may have knowledge about the location of the search target. You have paper, pen or pencil, and a CAP Form 106.

**OBJECTIVE**

Politely conduct the interview, via phone or in person, gathering all necessary information without confusing the witness, and prepare a CAP Form 106 with the results of your interview.

**TRAINING AND EVALUATION**

**Training Outline**

1. Witness interviews can be the single most important source of information on a mission. Information from witnesses can help the mission coordinator narrow the search area, allocate search resources, and even locate the target.

a. Witness interviews can occur in four different situations:

- 1) A witness comes up to you and volunteers knowledge.
- 2) Your team has been sent to interview a specific person or persons.
- 3) Your team is sent out to question people in an area where the search target (person or plane) might have been.
- 4) You receive a phone call and take the interview.

b. Witnesses may have all kinds of useful information, for example:

- 1) If someone has seen the search target alive and well at a given time, it helps the mission coordinator in determining where search target is not, which means less area to search. They may also have seen where the target was headed, or even talked to the target.
- 2) In the case of a lost plane, someone may have seen the plane in trouble, or seen or heard indications of a crash.
- 3) Witnesses such as hunters may have seen signs of the search target in the woods.

c. When conducting a witness interview, you are gathering information to fill out a CAP Form 106 (Witness Interrogation Form). This form is designed for lost aircraft, but can be used for lost persons as well. There are a variety of lost person forms available, though none are official CAP. Use these only when directed by your team leader.

d. It is extremely important to get only the facts out of the witness. Witnesses might give false information because of faulty memories or a desire to please the interviewer. Do not offer any information about the incident to the witness during the interview, as this might change their recollections.

e. Whenever possible, use two personnel to conduct an interview. One asks questions and one takes notes. More than two is intimidating, and does not help.

2. To conduct an interview:

a. Prepare yourself. Make sure your uniform is worn correctly. Remove excess field gear, especially anything that might bother the witness, such as large knives. "Clean up" before the interview, combing your hair, washing off any dirt from the field. ENSURE YOUR BREATH IS FRESH -- you want your witness to think about the search target, not your breath.

b. Properly identify yourself as a CAP member. Show the witness your ID card, and some photo ID if he asks. Let the witness know exactly what you are here to do.

c. Conduct the interview in a comfortable location for the interviewee, preferably a living room or family room. This area should also be relatively free of distractions.

d. If the interviewee believes that he or she saw the search objective, then try to take them back to that location. If that is not possible, have a map available.

e. Questioning the witness:

1) First, let the witness tell the story without you interrupting. Take notes. Then go back and ask questions to make sure they cover everything. Control your body language while conducting the interview; witnesses may unconsciously or purposefully change their story if the interviewer shows too much.

2) DON'T LEAD THE WITNESS. Do not volunteer information that might alter their recollection. For example, ask them what color the plane was. Do not ask "Was it blue?" They might agree with you even though they do not really remember that detail.

3) Do not hurry the witness, or press them for information they do not have. If they insist that they do not know something, do not insist that they "make a guess."

4) Show acceptance for what they have to say

5) To probe an area of interest, restate their words or summarize what they said.

6) If the witness says something that does not make sense, ask questions to verify what exactly they witnessed.

7) When interviewing children, be very wary of reliability. Question them thoroughly and ask their parents about the child's reliability, but be tactful since many parents would resent questioning their child's honesty. It is often preferable to interview children without their parents present to avoid parental coaching, but remember to get the parent's permission first.

8) Ask questions that will give you confidence in their answers. In determining the time of the event you might need to ask them how they know the time. In judging flight related items, be especially careful

to determine the interviewee's knowledge of the subject. How did the interviewee know how high the plane was flying? Is the interviewee a pilot, or does he or she have aviation experience?

9) In a good interview, the witness does most of the talking.

10) At the end of the interview, review the answers given. This allows you correct any errors made, and the witness could relate new information not previously discussed.

e. Use the CAP Form 106 as a guide. You may want to show the form to the witness so they are not intimidated by it. You can write directly on the form or take notes on paper. Either way, you will need to prepare a legible copy of the 106 after the interview. You probably will not be able to fill in the form from top to bottom -- the witness might. There are advantages and disadvantages to the interviewee filling out the form. It allows them to express what they mean directly, but could hinder the free flow of information encouraged between the interviewer and the interviewee. The 106 is self explanatory for the most part, but a few of the blocks require comment:

1) Block 9 (Telephone). The telephone number of the witness where he can be contacted later. If he has a work and home number, put them both in block 9.

2) Block 10 (Estimated Age). Estimate the age of the person, do not ask them. Some people do not want to state their age.

3) Block 14 (What occurrence fixed time he heard/saw plane?). If the person said he saw the plane at 1400, ask him how he is sure of that. If he looked at his watch, then it probably was 1400. If he looked at his watch at 1300, and about an hour later he saw the plane, then he might be off on his time estimate. This sort of information is very important to know. If the witness was watching television or listening to the radio it may be easier for the witness to relate what was playing, and you can get at least a rough time of airing from the broadcasting station.

4) Block 17 (About how high above the ground was it?) and Block 18 (About how far away was it at the nearest point?) Most people will not be very accurate at this. Ask them how they figured the height and distance, and write that down as well. For example, they might be able to compare the height of the plane to the height of a nearby building.

5) Block 8 (Address) Sometimes the location where the interviewee lives is different than the location where they witnessed the event. Be sure to note such discrepancies.

6) If you have information that will not fit on the form, make a note at the bottom and write the information on the back of the form.

f. At the end of the interview, thank them for their time. Make sure to give them the phone number to mission base, and ask them to call if they remember something else or find someone else who might know something.

g. Above all, be courteous and professional at all times.

## Additional Information

More detailed information on this topic is available in Chapter 14 of the Ground Team Member and Leader Reference Text.

## Evaluation Preparation

**Setup:** Prepare a CAP Form 106 with the results of a witness interview. You will use this as a script for the test interview. Ensure the student has paper, pen or pencil, and at least one blank Form 106.

**Brief Student:** Tell the student that he has been sent to interview a potential witness. Tell him you will play the role of the witness. Have him start the interview by “knocking on the door” and role-playing from there. Do not volunteer all the information on your “script”-- make the student ask questions to get all the details. At the end of the interview, tell the student that he has 15 minutes to prepare a CAP Form 106 to turn in to the Mission Coordinator.

## Evaluation

<u>Performance measures</u>	<u>Results</u>	
The student:		
1. Is polite and courteous.	P	F
2. Presents a professional appearance.	P	F
3. Properly identifies himself.	P	F
4. Allows the witness to describe what he saw, and then asks questions.	P	F
5. Doesn't lead the witness	P	F
6. Informs the witness how to get in touch with mission base if they remember anything or meet someone else who may be a witness.	P	F
7. Get all information needed for the CAPF 106.	P	F
8. Within 15 minutes after the interview, Legibly completes the 106 (in a format that a mission coordinator could read and use)	P	F
9. The completed 106 contains 90% of the information on the script.	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.

**L-0101**  
**INSPECT A VEHICLE**

**CONDITIONS**

You are part of a ground team preparing to leave on a sortie that you will need to use a vehicle.

**OJECTIVES**

Demonstrate how to properly inspect the ground team's vehicle.

**TRAINING AND EVALUATION**

**Training Outline**

1. Ground teams almost always utilize a vehicle as part of accomplishing their missions. To insure that the team vehicle is safe and ready for the sortie, a vehicle inspection is required prior to every sortie.

2. The following checklist can be used to accomplish these inspections or the current CAP-USAF Evaluation Checklist. Both accomplish the same basic need.

a. Before starting the vehicle

- 1) Check the engine oil level
- 2) Check to make sure that the battery is properly connected and relatively clean
- 3) Check the tires for damage and abnormalities
- 4) Check to make sure that there is a spare tire and a jack
- 5) Check engine coolant level
- 6) Check to make sure that all belts and hoses look normal
- 7) Check to make sure that there are enough safety belts for all passengers
- 8) Check for leaks under the vehicle and in the engine area
- 9) Check to see how clean the vehicle is inside and out
- 10) Check for and damage both internally and externally
- 11) Check to make sure that the inspection sticker (if applicable) and registration is current
- 12) Check Power Steering Fluid, Oil, and Windshield Cleaner levels
- 13) Check to make sure that there is extra fuel and water in labeled containers for emergencies.
- 14) Check to make sure that all necessary team equipment is loaded into the vehicle to include

fire extinguisher and first aid kits.

b. After starting the vehicle

- 1) Check to make sure that all lights work
  - a) High and low beams
  - b) Front and Rear turning signals
  - c) Front and Rear caution lights
  - d) Reverse lights
  - e) Dome lights, and panel lights
- 2) Check to make sure that all instruments, horn, and windshield wipers work
- 3) Check all safety devices again, along with warning lights
- 4) Check the brakes and the steering
- 5) Check for unusual occurrences such as noise, odors, or unusual vibrations
- 6) Check gas level

- a) If there is more than one tank, check both.
- b) Don't just rely on gauges, visually check tanks, and driver records of travel.
- 7) Complete all Mission Paperwork necessary before leaving the mission base.
  - a) Make sure that it is readable.
  - b) Make sure it is signed by the approving officer, normally the Ground Branch Director or his designee.

- c) Make sure to leave a copy with the approving officer and retain a copy for yourself.
- d) If the daily inspection log has not been signed, makes sure the driver completes it before leaving mission base.

**Additional Information**

More detailed information on this topic is available in Chapter 3 of the Ground Team Member & Leader Reference Text.

**Evaluation Preparation**

**Setup:** Ensure that there is a vehicle available for the student to inspect. The evaluator should create a minor problem such as removing the fire extinguisher, first aid kit or tire jack for the student to find. Evaluators will not damage vehicles or make them un-safe for operation or un-roadworthy for the test.

**Brief Student:** Tell the student to demonstrate a proper vehicle inspection.

**Evaluation**

<u>Performance measures</u>	<u>Results</u>
1. Demonstrates a proper vehicle inspection noting the evaluator created problem.	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.