

DETERMINE DIRECTION WITHOUT A COMPASS

071-329-1018

CONDITIONS

During daylight and at night (with a clear view of the Big Dipper), given a wristwatch (not digital), you must determine direction in a field environment with natural vegetation available.

STANDARDS

Identify north and east within 15 degrees.

Note: All of the procedures given in this task will give approximate directions. For accurate directions, a compass must be used.

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TRAINING AND EVALUATION

Training Information Outline

1. Determine direction using the shadow-tip method.

a. Place a stick or branch into the ground vertically at a fairly level spot where the sun will cast a distinct shadow. Mark the shadow with a stone, twig, or other means (figure 30).

b. Wait 10 or 15 minutes until the shadow tip moves a few inches. Mark the new position of the shadow tip just like the first (figure 31).

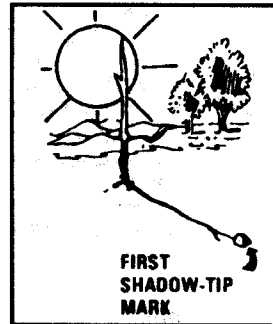


Figure 30. First shadow-tip mark.

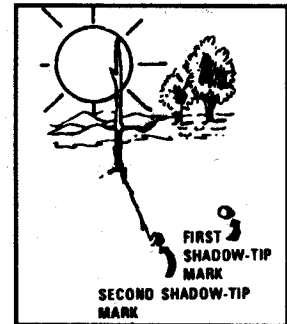


Figure 31. Second shadow-tip mark.

c. Draw a straight line through the two marks you made on the shadow tips. This line is an east-west line (figure 32).

d. Determine which is the east end of the line and which is the west end.

- (1) The sun rises in the east and sets in the west.
- (2) The first shadow tip you mark is always west and the second mark is always east.
- (3) The shadow tip moves in the opposite direction.

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e. Determine north and south. Draw a line at a right angle to the east-west line at any point (figure 33). This is the north-south line.

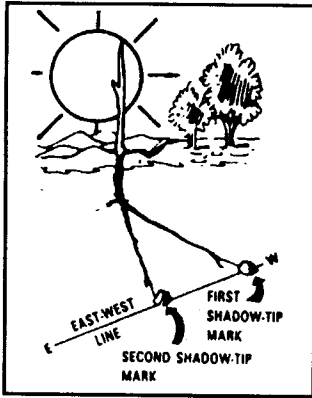


Figure 32. East-west line.

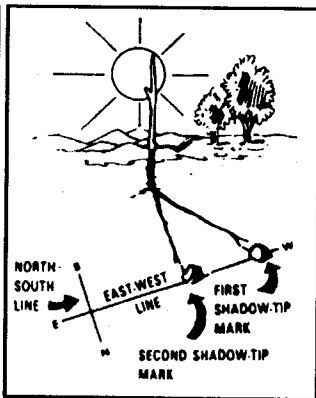


Figure 33. North-south line.

2. Determine direction using the watch method without a compass.

a. Point the hour hand at the sun when you are north of the equator. South will be halfway between the hour hand and 12 o'clock (figure 34).

b. Point 12 o'clock at the sun when you are south of the equator. North will be halfway between the hour hand and 12 o'clock.

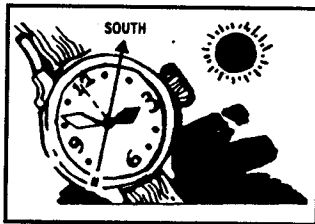


Figure 34. Watch method.

3. Use the North Star method to determine direction at night. At night, you can locate north by finding the North Star (Polaris). First, find the Big Dipper. The last two stars in the cup point directly at Polaris, which is about five times as far out as the distance between those two stars in the cup. Facing Polaris, you are looking north, with east on your right and west on your left (figure 35).

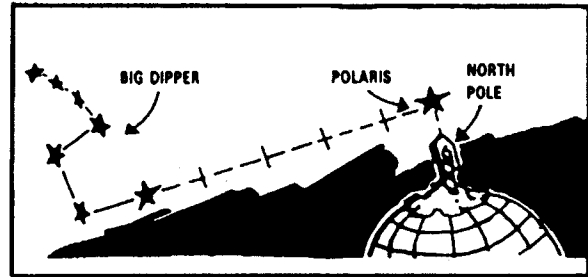


Figure 35. North Star method.

Notes: During the training session, stress these four facts:

1. The sun rises in the east and sets in the west.
2. When you face north, east is to your right, west is to your left, and south is to your back.
3. The Big Dipper is a pattern of stars that resembles a soup ladle.
4. The Southern Cross is the main constellation used as a guide south of the equator and the above general directions for using north and south stars are reversed.

Evaluation Preparation

Setup: Directionally orient yourself to an area that is unfamiliar to the soldier to be tested.

Brief Soldier: Accompany the soldier to the area and tell him or her to use the field-expedient methods to determine which direction is north and east. Use a compass direction of your choice. The soldier will not be told how he or she did on performance measure 1 until completion of performance measure 2.

Note: Before the soldier is scored a GO for this task, he or she must display proficiency in all three field-expedient methods of determining direction without a compass. However, performance measure 3 must be tested in a different location.

Evaluation Guide

Performance Measures

Results

1. Determine direction using the shadow-tip field-expedient method P F

a. Place a stick vertically into the ground at a desired spot.

b. Mark the tip of the stick's shadow to represent west.

c. Wait 10 to 15 minutes.

d. Mark a new position of the tip of the stick's shadow to represent east.

e. Draw an east-west line through the two shadow-tip marks.

f. Draw a north-south line at a right angle to the east-west line.

g. Point in the required direction within 15 degrees.

2. Determine direction using the watch field-expedient method P F

a. In the Northern Hemisphere, point the hour hand of the watch at the sun; in the Southern Hemisphere, point the 12 o'clock position of the watch at the sun.

b. Point in the required direction within 15 degrees.

3. Determine direction using the North Star field-expedient method. P F

a. Locate the Big Dipper.

b. Locate Polaris, the North Star.

c. Point in the required direction within 15 degrees.

Feedback

Score the soldier GO if all performance measures are passed. Score the soldier NO-GO if any performance measure is failed. If the soldier scores NO-GO, show the soldier what was done wrong and how to do it correctly. The actions the soldier can take to improve performance are to consult TEC Lesson 930-071-0014-F, TEC Lesson 930-071-0018-F, TEC Lesson 930-071-0163-F, and TEC Lesson 930-071-0165-F.

REFERENCE

FM 21-26