P8: Resection and Military Maps

Based on:

071-COM-1015-Locate an Unknown Point on a Map and on the Ground by Resection
071-COM-1000-Identify Topographic Symbols on a Military Map
071-COM-1001-Identify Terrain Features on a Map

Task: Determine your location. Identify terrain features, colors, and contour lines. Identify topographic symbols.

Condition: You are a member of a team conducting tactical operations and have a requirement to determine your current location.

Standard: Determine the correct six-digit grid to your location including using either the map and compass method or the straight edge method of resection within five minutes. Identify five major, three minor, and two supplementary terrain features, what the six basic colors represent, and the three types of contour lines within five minutes with 100% accuracy. Correctly identify 22 topographic symbols within ten minutes.
Station Requirements: A protractor, straight edge, calibrated compass, and military map(s) (use as many maps as required to ensure all terrain features are represented). Laminated paper with blank lines labeled appropriately (one for Candidate's grid, five for the major terrain features, three for the minor terrain features, two for the supplementary terrain features, six for the colors, and three for the contour lines). The 22 topographic symbols with a blank line next to each for the Candidate to write the number. Alcohol pens and eraser. The map for resection must be a rotatable 1:50,000 and have *at least* two clearly identifiable features that are visible to the Candidate. If the local terrain is limited, E-Type targets, vehicles, etc. may be used if they are clearly plotted and labeled on the map. The map(s) for identifying symbols/features must have each item to be identified clearly labeled. The training area will have the figures and illustrations from the ITASKs, as well as any additional references. While all the information will be available in the holding area, during testing the Candidate must not be given any Graphic Training Aids (GTAs), cheat sheets, etc. At test site, the Candidate must not be able to see any of the information/equipment until time has started. Do not use the actual grid to the site for test week.

Resection:

1. Identify your location on a map by resection using the map and compass method.
    a. Orient the map on a flat surface using a compass.
    b. Identify at least two well-defined points on the ground.
    c. Mark these well-defined points on the map.
    d. Plot the back azimuths of these points on the map.
        1. Determine the magnetic azimuth from your location to one of the defined points.
        2. Convert the magnetic azimuth to a grid azimuth.
        3. Convert this grid azimuth to a back grid azimuth.
        4. Place the index point of a protractor on the well-defined point.
        5. Align the protractor's 0- to 180-degree line to the top of the map's North-South grid line.
        6. Ensure the 0-degree mark is pointing to the north (or top of map).
        7. Place a tick mark on the map beside the number on the protractor that corresponds to the computed back grid azimuth.
        8. Draw a straight line from the well-defined point to the tick and beyond.
        9. Repeat for each well-defined point.
    e. Identify the point where the lines intersect as your location.
    f. Determine the six-digit grid coordinates to this location.
2. Identify your location on a map by resection using the straightedge method.
    a. Orient your map on a flat surface using terrain association.
    b. Locate at least two known distant locations or prominent features on the ground.
    c. Plot these distant locations or prominent features on the map.
    d. Draw a resection line for each of these plotted points.
        1. Lay a straightedge on one of the two known points on the map.
        2. Rotate the straightedge on the map until straight edge lines up with both the known position on the map and the known position in the distance.
        3. Draw a line along straightedge away from the known position on the ground toward your position.
        4. Repeat for each plotted point.
    e. Identify the point where the lines intersect as your location.
    f. Determine the six-digit grid coordinates to this location.

Identify Terrain Features and Colors:

1. Major terrain features.
    a. Hill.
    b. Saddle.
    c. Valley.
    d. Ridge.
    e. Depression.
2. Minor terrain features.
    a. Draw.
    b. Spur.
    c. Cliff.
3. Supplementary terrain features.
    a. Cut.
    b. Fill.
4. Colors.
    a. Blue: Hydrography or water features such as lakes, swamps, rivers, and drainage.
    b. Black: Cultural (manmade) features such as buildings and roads, surveyed spot elevations, and all labels.
    c. Green: Vegetation with military significance such as woods, orchards, and vineyards.
    d. Brown: All relief features and elevation such as contours on older edition maps and cultivated land on red light readable maps.
    e. Red: Cultural features, such as populated areas, main roads, and boundaries, on older maps.
    f. Red brown: Cultural features, all relief features, non-surveyed spot elevations, and elevation such as contour lines on red light readable maps.
5. Contour lines.
    a. Index.
    b. Intermediate.
    c. Supplementary.

Identify Topographic Symbols:

1. Identify the sheet name.
2. Identify the sheet number.
3. Identify the series name.
4. Identify the scale.
5. Identify the series number.
6. Identify the edition number.
7. Identify the index to boundaries.
8. Identify the adjoining sheets diagram.
9. Identify the elevation guide.
10. Identify the declination diagram.
11. Identify the bar scales.
12. Identify the contour interval note.
13. Identify the spheroid note.
14. Identify the grid note.
15. Identify the projection note.
16. Identify the vertical datum note.
17. Identify the horizontal datum note.
18. Identify the control note.
19. Identify the preparation note.
20. Identify the printing note.
21. Identify the grid reference box.
22. Identify the unit imprint and symbol.