

Chapter 13 – Navigation

PO.4 – Navigation

EO.1 – Locate a Specific Point on a Map Using a Four-Figure Grid Reference

EO.2 – Navigate Familiar Terrain

EO.1 – Locate a Specific Point on a Map Using a Four-Figure Grid Reference

In previous training sessions, you learned how to identify colors on a topographical map and how to equate a map scale with the land area it refers to. Now you will learn to use your map to navigate familiar terrain. The first step in navigation is to locate specific points, mostly your starting point or where you are currently at and your end point or where you intend to go.

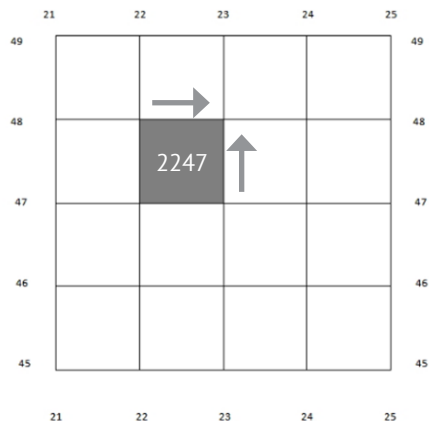
To locate points on your map, you use the grid lines printed over the entire map. Grid lines are the lines printed in blue on topographical maps that run from north to south and east to west, or vertically and horizontally. All the places where the grid lines intersect, or cross, are called points, and these points are used to identify points on your map. You use these points to state locations where you currently are or where you need to get to.

Grid lines are also used to tell the distance between points or features on a map. They can be used with map scales to figure out how far you must travel to get to different points. You need to start with identifying your points, and for that you will use a four-figure grid reference.

Four-Figure Grid Reference

A four-figure grid reference is a series of four numbers that refers to an entire grid square a point is in. To locate or state a point using a four-figure grid, you will use the north-south lines (N-S lines) that run up and down and west-east lines (W-E lines) that run left to right. To begin, always start with the N-S line to the left of your point. Then you will state the W-E line beneath your point.

For example, to state any point inside the shaded box to the left, you always



start with the N-S line to the left of the box. In this case, the N-S line is 22. Next you will state the W-E line below the point which is 47 for this box. The four-figure grid coordinate for any point inside this grid square is 2247. There are no spaces between any of the numbers when you state the point.

You will follow the same process if you are given a four-figure grid coordinate. The first two numbers in your coordinate refer to the N-S line to the left of your point. The last two numbers are your W-E point. Put one finger on the number of the N-S line and one on the W-E line given in your coordinate. Slowly bring your fingers together until they touch but are still on the same numbered lines. The box to the left and above the lines is the box your point is in.

EO.2 – Navigate Familiar Terrain with the Use of a Map

Now that you understand the grid system and how to state and locate grid coordinates, you're ready to use your map to navigate. The first step in navigating any terrain including areas you are familiar with is to locate your starting point. To locate your approximate location on the map:

- Identify two to three prominent landmarks on the ground near where you are such as a hill or water feature, something easily identifiable on a topographical map. Try to use landmarks in different directions such as to the right and left of where you are so that you can more accurately determine your location.
- Locate the landmarks near you on your map.
- Rotate your map until all your landmarks line up with the direction the objects are located on the ground. For example, if you are to the left of a large hill, make sure the hill is also on the left side of your map. If you orient yourself using a stretch of road, make sure that the map lines up and is parallel to the road on the ground.
- Double check landmarks all around you to make sure that features in front of you are in the same position on your map.

Choosing and Planning your Route

The next step in the navigation process is to choose and plot the route you will take from your starting point to your end point. You will begin this step by plotting your end point. Use the steps above to locate your given end point from the four-figure grid coordinate.

You will also need to estimate the distance between your start and end point to know how far you'll need to walk. Measure the distance on the map using a ruler. Compare this distance to the map scale to determine the distance between your points. For example, if the map scale uses one centimeter to equal one hundred meters and your points are four centimeters apart on the map, then they are four hundred meters apart on the ground.

Once you know the distance between your points, you can use features on the map and on the ground to track your progress towards your points.

- **Handrails** are obvious features on the ground you can follow towards your target. Handrails make the trip easier by doing the navigation for you. They could be creeks, trails, power lines, fences, or even slopes of ridges and hills. Look on your map at the land between your two points and try to identify any of these handrails along the way. Using several handrails together can lead you to your target.
- **Collecting features** are landmarks along your route you can check off as you pass. They allow you to concentrate on only a few navigation waypoints instead of trying to keep track of everything you pass. Break down a long route into smaller sections between collecting features. As you pass each one, you will know how much farther you have to walk, and that you are on the right track.
- **Catching features** are the stop signs that tell you that you have gone too far. They should be large or obvious features at the end of your route or just past the end of your route that you would not be able to miss like a creek or a road. Always pick out a catching feature to be sure you have reached the end of your route.