

used to force the younger, less experienced soldiers of the unit to take command and use their map reading skills in performing selected tasks such as these:

- Members of the unit can be called on to make a terrain analysis (using a map) of the route over which the unit is supposed to travel during a movement to contact.
- The soldiers can evaluate the terrain in terms of observation and fields of fire when bounding overwatch maneuvers are planned.
- Members of the unit can determine possible locations for fire support teams (FIST) if artillery fires are to be used to suppress the enemy.
- The soldiers can analyze the terrain from the map for purposes of selecting likely launch points for anti-armor missiles. (A good launch point must have a clear field of fire without dead spots where potential targets can hide.)

During some of the unit's other training periods and exercises, some

soldiers can be selected to determine the unit's location by grid coordinates while others are used to evaluate their performance. The soldiers can perform these tasks while waiting for transportation or during rest periods.

Such hip-pocket training methods tend to keep the soldiers on their toes with regard to their map reading skills and their knowledge of terrain analysis. By practicing their basic skills in a number of different situations, they should eventually reach the level of permanent learning.

To achieve this goal, each commander and trainer needs to stick to the basics of map reading — he should use the soldiers' strong points to correct their weak ones; promote frequent practice; emphasize the importance of accuracy rather than speed; and incorporate map reading into other training as well. This method may not guarantee that he will always know where his troops are, but it *will* help them to know where they are.

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THE FIVE-DEGREE METHOD

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As the effective ranges of our weapons have increased, so have our soldiers' difficulties in trying to estimate those ranges. A soldier may be able to guess with a fair degree of accuracy where the end of two, three, or even four football fields would be, if he uses this method of judging distance. But even a soldier who is a former gridiron champ cannot judge

where the end of 30 football fields set end to end would lie.

Using the size-of-objects method of judging distance, who can tell with

any degree of accuracy whether a Soviet T-62 tank is either 800 or 1,000 meters away? A soldier would need a calibrated, telescopic eye to discern

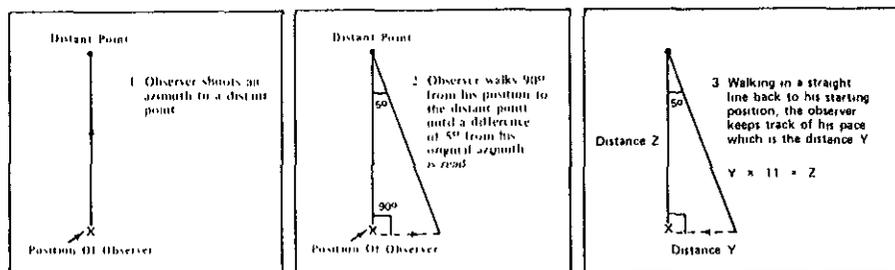


FIGURE 1

distance paced
(units)

distance to point
(units)

20	30	40	50	60	70	80	90	100
230	343	457	572	686	800	914	1030	1143

FIGURE 2

the difference and even today's modern soldier does not come equipped with one. Yet unless he can determine that distance with some degree of accuracy, he might well forfeit surprise and prematurely give away his position.

Certainly maps of areas with recognizable terrain features can help a combat leader judge distance when he sets up his key weapons. The laser rangefinder is also a quick and accurate aid in determining range, but just like any other piece of equipment, it has to be in the hands of the soldier to be of any use. It is doubtful that every soldier will have one of these in the future.

What the Infantry and Armor soldier and the Field Artillery forward observer really need, then, is an accurate method of determining distance on the battlefield with no more than their basic combat equipment. With a compass and a short pace count, a soldier has such a method, and it is much faster than pacing the range to a distant point and far more accurate. It is called the Five-Degree Method.

METHOD

As shown in Figure 1, the observer chooses a target point and with a lensatic compass shoots an azimuth to

that point. Adding 90 degrees to this reading, he then walks at a right angle to the line between his chosen point and the target point, periodically stopping to take an azimuth reading to that same point. When the compass shows a difference of five degrees from his initial azimuth he stops. He then walks back in a straight line to his starting point, keeping count of his pace. Once back at the starting point, he converts the number of paces he took on his return trip to whatever unit he wants to use with his individual pace count. He then multiplies this distance by 11, which will give him the approximate range to his target point. (The factor of 11 was obtained by simple geometry, using the known angle of 5 degrees and the distance Y. The exact figure is 11.43.)

If taking a pace count to the right is impractical or impossible, the soldier can walk to his left instead, following the same procedure, but subtracting 90 degrees from his initial azimuth in-

stead of adding it.

A graphic aid such as the slide viewer pictured in Figure 2 can assist the soldier in converting his pace distance (Y) to down-range distance (Z). The viewer shown uses the factor of 11.43 for the greatest accuracy.

The Five-Degree Method will not always be the best one for determining range, just as the other methods cannot be used in every case. Whenever possible, though, this method should be used because of its simplicity and its accuracy. It is especially useful in sparsely wooded areas and in the barren type of terrain found in a good part of the Middle East.

By instructing his troops in this method, a leader can provide them with a simple way of determining range that is also reasonably fast and highly accurate. With this additional skill, the soldiers will be better able to accomplish their missions and increase the effectiveness of their unit.



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