Map Reading Basics

MAJOR STANLEY H. HOLGATE
STAFF SERGEANT THOMAS A. SCRAPANSKY

It's high noon. Do you know where your troops are? More to the point, do *they* know where they are? The evidence suggests that many soldiers are deficient in the basic map reading skills.

These deficiencies were confirmed by the results of a mini-test the Army conducted several years ago. In it the use of natural map references was compared with the use of combinations of manmade and natural references.

The results of the test did not conclusively support the notion that soldiers who use manmade references have less trouble than those who use only natural references. It did, however, provide some insights into the basics of map reading that should prove useful to company commanders, platoon leaders, and their NCOs in their map reading training and exercises.

The first thing any trainer needs to do is to get to know the soldiers he plans to teach. He can learn their weak points and their strong points through diagnostic tests; then he should select those instructional techniques that use the strong points to improve on the weak ones.

The tests may show that some of the soldiers are fairly proficient in map reading and need little or no more training. They can be used to tutor those who do need it. This technique improves the performance and motivation of the better soldiers and also frees the trainer to devote more time to monitoring the progress of all the soldiers.

In developing a training schedule, trainers should spread their map reading classes across at least a week with an hour each morning devoted to classroom instruction and the afternoon period to field exercises. At the end of each morning session a diagnostic test should be used to evaluate any deficiencies. This information can then be used in the afternoon class to correct bad habits quickly before they become set.

Because map reading has its own language, the students must first be taught its vocabulary. They also have to learn to relate the symbols on the map to objects on the ground and to variations in the earth's surface. Training materials that combine seeing, hearing, and feeling should be used to help those soldiers who fail to learn from standard classroom teaching methods. Much of this specialized training will probably have to be done on a one-to-one basis and the trainer will have to modify his methods of instruction to meet the special needs and the motivation level of each soldier. Some will need to be led by the hand through every step.

After the soldiers reach an acceptable level of performance, frequent and recurrent training exercises should be used to maintain that level. Map reading is a skill that seems to be lost quickly if it is not continually practiced.

Two basic rules must be drilled into the soldiers during their map reading training: Be precise, and check results.

The instructor should also spend time describing the most common errors so each soldier can work to avoid them. Some of these are:

- Errors in compass readings.
- Poor terrain association.
- Incorrect positioning of the protractor.
- Rushing to completion without checking the work carefully.
- Using reference points that are too far away.
- Marking the wrong reference on the map.
- Arithmetic errors.
- Reading coordinates wrong.

The following general rules will help a soldier prevent such mistakes:

- When orienting the map, he should place a pencil on it with one end on his approximate location and the other end pointing to or lying on a prominent terrain feature.
- He should select references that are far enough apart to form a well-defined intersection but close enough to him so that he can make an accurate estimate of range.
- After determining his location, he should use terrain association to check it more carefully.
- After determining the azimuth to a target, he should walk the observer-to-target line, analyzing the terrain in the process.

After the basic map reading skills have been taught in the classroom, they should be employed in the field at every opportunity. Map reading should be incorporated into as many unit activities as possible, so long as the exercises are meaningful and bear a natural relationship to the other training that is going on.

During some of these exercises, a simulated loss of leaders should be

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 antiarmor 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.

MAJOR STANLEY H. HOLGATE, a Medical Service Corps officer, was commissioned through the ROTC program at Texas Tech University in 1966. He holds a PhD degree in psychology from Texas Tech and has written numerous technical papers and reports. He is presently assigned as the Chief of the Human Factors Branch at the U.S. Army Combat Developments Experimentation Command (CDEC) at Fort Ord, California.

STAFF SERGEANT THOMAS A. SCRAPANSKY, now assigned as a Drug, Alcohol, and Mental Hygiene Counselor in Korea, formerly served as a research assistant at USACDEC. He is a 1973 graduate of St. Edward's University in Austin, Texas, and holds a master's degree from Boston University.

THE FIVE-DEGREE METHOD

LIEUTENANT MITCHELL E. TORYANSKI

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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 1,100 meters away? A soldier would need a calibrated, telescopic eye to discern

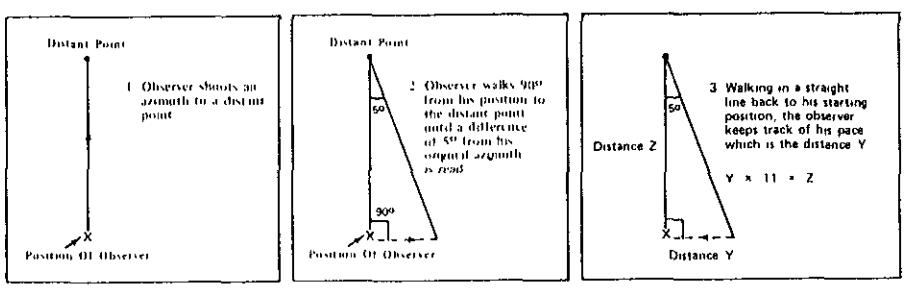

FIGURE 1