

FDC Skills

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Suppose you have the responsibility for selecting a new soldier for training as a fire direction computer (FDC) for your unit. What information would you want that might help you in making your decision? You would want someone with keen eyesight and steady nerves, of course, but you would want someone with good mathematical ability, too. After all, a good bit of adding, subtracting, multiplying, and dividing is involved in measuring shifts right or left and in bracketing a target. Gross errors in these calculations could result in having the rounds come in where you don't expect them. Your indirect fire could be ineffective, or friendly troops could be killed or equipment destroyed.

Wouldn't it be helpful to have some indication of a soldier's math ability and the extent to which he has sharpened his math skills? Some time ago the Evaluation and Standardization Division of the Infantry School recognized this need and developed a math skills diagnostic test to give a field commander an idea of the knowledge each soldier he gets in his unit has.

The test is a 22-item quiz. It includes sample math problems requiring the soldier to add and subtract whole numbers, decimals, and fractions; multiply and divide decimals; add positive and negative numbers; and figure averages. There are no

trick questions, nor do they require much reading.

The instructions simply tell the soldier what to do with the numbers given. He may have to align the numbers in columns or convert a whole number to a fraction before he adds or subtracts, but these are math skills that are basic to any sort of calculation. For example, when he is told to "average" a column of figures, he is given only the figures. There is no explanation of what it means to average a group of numbers. He must already know that. There are no word problems on the test presently, but thought is being given to including a problem phrased just as it would be given to an FDC to see whether the soldier has any idea of the calculations he should make to adjust the indirect fire properly.

CORRELATIONS

Once the math test was developed, it was administered to a sample of MOS 11C soldiers in the ranks of private first class to sergeant first class/platoon sergeant who had recently taken the SQT. When selected hands-on and written test scores were correlated with the math test scores, correlations indicated a good relationship between a soldier's mathematical ability and his SQT results. A 10-item rater's criterion for

FDC job performance was developed to establish a cut-off point and a GO/NO GO score. Fifty soldiers who were qualified in MOS 11C took the math test and each was rated by his fire direction chief, or equivalent, and his mortar platoon leader. Again, the correlations were significant, and the cut-off score was set at 14 correct out of the 22 items.

During One-Station Unit Training (OSUT) at Fort Benning, all MOS 11X (Infantry unassigned) and MOS 11C (Indirect Fire Crewman) soldiers are now being given the test. (In a recent six-month period, 6,650 soldiers were tested and only 3,597 scored 14 or higher.) Each soldier's test score is given to his OSUT company commander for use in his initial entry training. The score is also recorded in Item 27 of the soldier's DA Form 2-1, Personnel Qualification Record — Part II, for use by the gaining commander when the soldier reports to his unit. It is shown as "Math___," indicating the raw score he made on the test.

The U.S. Army Forces Command (FORSCOM), in a recent study, discovered that the high attrition rate in the Basic Noncommissioned Officer Course (BNCO) classes was closely related to the soldiers' lack of skills in mathematics. As a result, an NCOES preparation project has been initiated in which the math skills diagnostic test will be administered to

potential BNCOC students before their final selection. If a soldier cannot show a satisfactory level of understanding and skill in the basic mathematical processes, he will be given help through the Basic Skills Education Program (BSEP). Once he has improved his grasp of the mathematical skills, the soldier then can be reconsidered for BNCOC. This should alleviate the attrition problem in the course.

Although science and technology have given us smaller, hand-held computers that can do complex calculations in split seconds, the human operator still needs to have a basic understanding of the mathematical concepts to operate them. And there will inevitably be emergen-

cies when the FDC must revert to using his own brain and a stubby pencil. When that happens, he needs to know how and when to add, subtract, multiply, and divide. If he can score 14 out of the possible 22 on the test, he has the potential for FDC training. Of course, the higher his score, the better the probability that he will succeed.

Used in combination with other factors, the math score can be of value to a commander in making his selection of soldiers for FDC training. He should choose the soldier who can do the right mathematical calculation with the highest degree of accuracy for such an important job.

So the next time you plan to conduct FDC training in your unit, check

Item 27 of the soldier's DA Form 2-1 to see what his score was on this test. If it was at least 14, check out his other desirable characteristics for the job. His keen eyesight, depth perception, and steady nerves may make him your first choice for FDC training, but if you don't also check his math ability you could find that assigning him to adjust indirect fire could be hazardous to his health — and to yours.

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