

**GAO**

Report to the Honorable  
Dave McCurdy, House of Representatives

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April 1992

# ARMY TRAINING

## Army Analysis Overstates Signal Training Costs at Fort Sill



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**National Security and  
International Affairs Division**

B-246367

April 1, 1992

The Honorable Dave McCurdy  
House of Representatives

Dear Mr. McCurdy:

The Army recently announced its decision to relocate certain signal corps training from Fort Sill, Oklahoma, to Fort Gordon, Georgia. The decision was based in large part on the results of an Army cost analysis indicating that it was less costly to conduct the training at Fort Gordon. You requested that we review this cost analysis to determine if the estimated cost differential could be substantiated.

**Background**

Signal training in the Army is primarily taught at Fort Gordon, the location of the Army Signal Center. The Signal Center is responsible for developing signal courses, instruction plans, and tactics for signal corps operations. Fort Sill, the location of the Army's Field Artillery Center, has similar responsibilities for field artillery training and tactics. Fort Sill, however, also conducts some signal corps training.

The Army recently decided to establish a new signal military occupational specialty as a part of its overall effort to streamline signal operations. According to Army plans, training for this position will be conducted at Fort Gordon beginning in October 1992. The Army expects to train about 3,100 soldiers annually for this position. The new position will consolidate three existing signal specialties, two of which are currently taught at Fort Sill. The remaining specialty is taught at Fort Gordon. Initial and advanced courses in the new specialty will be of 17 and 16 weeks duration, respectively. Currently, Fort Sill teaches 13- and 17-week courses to about 1,500 students, while Fort Gordon teaches a 10-week course to about 2,200 students.

The Army's decision to locate training for the new specialty at Fort Gordon was based primarily on the results of a cost analysis performed by the U.S. Army Training and Doctrine Command (TRADOC) that indicated a \$1.6 million annual recurring cost difference between the two installations. TRADOC's analysis used various standard factors, such as average salaries, and historical cost data that reflect work load variances over time at each installation. According to TRADOC officials, this analytical technique has typically been used to estimate dollar and personnel requirements associated with changes in work load.

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## Results in Brief

The Army's cost analysis overstated the cost of conducting signal training at Fort Sill. In particular, the analysis overstated the estimated costs for training support and base personnel at Fort Sill. These two cost categories accounted for 81 percent of the estimated annual recurring cost difference. As a result, the estimated cost differential in favor of locating the training at Fort Gordon is not reliable.

The overstatement occurred because the Army's analysis combined artillery and signal training costs at Fort Sill. Fort Sill is primarily engaged in providing artillery training, which costs more to conduct than signal training. The Army's analysis estimated a per student training support cost of \$971 for signal students, whereas Fort Sill estimated that it would cost only \$236. In comparison, Fort Sill's training support cost estimate for artillery students was much higher—\$2,382.

Likewise, the Army's analysis indicates a greater increase in base personnel if the training is located at Fort Sill. The analysis estimated that Fort Sill would require an additional 63 base personnel—almost twice the increase estimated for Fort Gordon. Fort Sill, however, estimated that it would require a maximum of 10 additional personnel. Even if Fort Sill's estimate is understated, our analysis showed that 47 base personnel could be added before Fort Sill's costs exceeded those of Fort Gordon.

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## The Army's Cost Analysis Overstated Costs at Fort Sill

We found that TRADOC's analysis overstated training support and base personnel costs at Fort Sill. Training support, representing 25 percent of the cost difference, includes supplies, equipment maintenance, and travel costs for students and other training personnel. Base personnel, representing 56 percent of the cost difference, include accounting, administration, facility maintenance, and post security staff.

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## Training Support

TRADOC's analysis estimated a per student cost of \$971 and \$359 for training support at Forts Sill and Gordon, respectively. The TRADOC assumption was that training support costs for the new specialty could be estimated by using historical variable cost data for training at each location. This assumption was based on a high historical correlation between the addition of students and the additional supplies, equipment maintenance, and travel costs incurred. However, because the historical training costs at Fort Sill include the cost of providing both field artillery training and signal training, the estimated support cost to provide signal training is overstated. In a separate analysis, Fort Sill estimated training

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support costs of \$236 for signal students only. For artillery students, Fort Sill's cost estimate was much higher—\$2,382.

While we did not verify the costs in this analysis, we observed a number of differences between artillery and signal training at Fort Sill that could account for the higher cost associated with artillery training. For example, much of the artillery training takes place in the field, whereas signal training is conducted primarily in the classroom and does not involve extensive equipment support costs. Additionally, artillery training involves more costly equipment operation and maintenance than does signal training. For example, repair parts and fuel consumption of artillery equipment such as the self-propelled howitzers contribute significantly to the higher artillery operations and maintenance costs. TRADOC officials acknowledged that the inclusion of artillery training costs in their analysis overstated the estimated cost of signal training at Fort Sill. TRADOC officials, however, believe that the statistical methodology used represents a cost-effective approach to arriving at a general estimate of the relative costs associated with the planned training. These officials said that, short of undertaking a costly detailed analysis at each installation, it was the only method available to estimate costs.

Fort Gordon officials told us they believed that TRADOC's \$359 training support cost estimate was reasonable.

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## Base Personnel

TRADOC's analysis estimated requirements of 63 and 35 additional base personnel at Forts Sill and Gordon, respectively. The TRADOC assumption was that base personnel costs associated with the new position could be estimated by using the historical relationship between additional military personnel assigned to each installation and the increase in base personnel required to provide services. However, because the historical data for base personnel at Fort Sill includes artillery training, the estimated increase in base personnel required is overstated.

The TRADOC estimate of 63 additional base personnel for Fort Sill is almost twice the increase estimated for Fort Gordon. While TRADOC officials could not identify the specific base support functions requiring additional personnel, Fort Sill officials identified functions requiring a maximum of 10 additional personnel. Even if Fort Sill's estimate is understated, our analysis showed that 47 base personnel could be added before Fort Sill's costs exceeded those of Fort Gordon.

Fort Sill officials told us that many services are required to support artillery training that are not required by signal training. These services include range maintenance and the operation of a railroad to support the Field Artillery Center and other Army units who train at Fort Sill. For example, the railroad is operated primarily to transport artillery and support equipment to and from depot repair. In addition, the TRADOC analysis used a historical relationship at Fort Sill that included base personnel requirements at Fort Chaffee, Arkansas—a Fort Sill sub-installation.

Fort Gordon officials told us they believed that TRADOC's estimate of 35 additional base personnel was reasonable.

## Scope and Methodology

We reviewed key documents describing TRADOC's cost analysis and held discussions with TRADOC officials having primary responsibility for the analysis. These discussions focused on obtaining an understanding of the analytical assumptions and impact of the various cost categories used in the analysis. We identified the two cost categories having the largest impact on the estimated recurring annual cost difference between the two installations (training support and base personnel). We focused our review on determining the reasons for the differences in these costs.

To determine the number of base personnel that could be added at each installation before one installation had a cost advantage over the other, we performed a sensitivity analysis which assumed various base personnel requirements and equal training support costs.

We visited Forts Sill and Gordon to observe the facilities and the types of training conducted at each. We also discussed the TRADOC cost analysis with installation officials. At Fort Sill we discussed the separate analysis prepared by Fort Sill officials and examined available documentation. Although we did not verify the accuracy of the cost data developed by Fort Sill, we observed several differences that could account for the higher costs to conduct artillery training.

We conducted our review from October 1991 through March 1992 in accordance with generally accepted government auditing standards.

As requested, we did not obtain written Department of Defense comments on this report, but we discussed our findings with Defense program officials and incorporated their comments where appropriate.

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We are sending copies of the report to the Chairmen of the House and Senate Committees on Armed Services and on Appropriations and the Secretaries of Defense and the Army. Copies will also be made available to other interested parties upon request.

This report was prepared under the direction of Henry L. Hinton, Associate Director, Army Issues, who may be contacted on (202) 275-4133, if you or your staff have any questions. Other contributors to this report are listed in appendix I.

Sincerely yours,

A handwritten signature in cursive script that reads "Frank C. Conahan".

Frank C. Conahan  
Assistant Comptroller General

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