

ARI TECHNICAL REPORT
TR-77-A12

**THE DEVELOPMENT AND TRIAL EVALUATION
OF ALTERNATE PROGRAMS FOR
UNIT TRAINING MANAGERS AND TRAINERS**

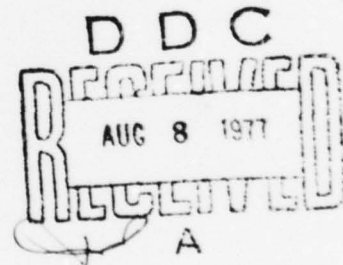
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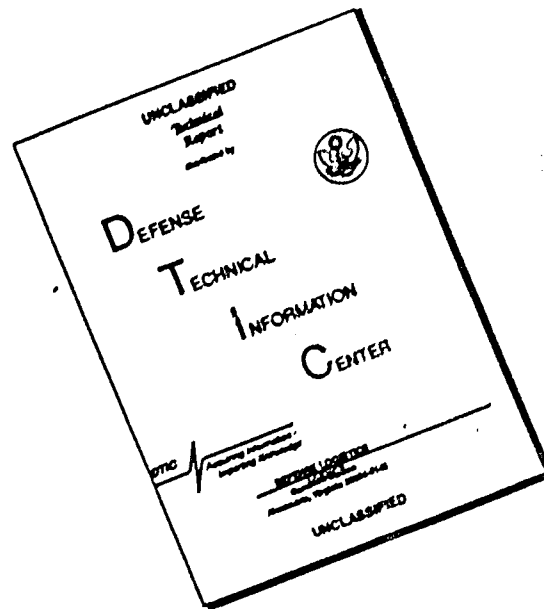
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The goal of this effort was to develop alternate training programs to enable unit training managers and trainers to employ performance-based practices in training and in evaluating individuals in their performance in the unit. The work was performed in conjunction with the 7th Infantry Division, Fort Ord, California. Using official Army guidance documents, training manager and trainer functions were analyzed into tasks. Performance objectives were then developed and used to guide construction of performance tests and training programs.		

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> Two training approaches were employed. Directed Practice (DP) and Guided Self Study (GSS) programs were developed for both manager and trainer. The DP programs involved frequent face-to-face interactions between managers/trainers and training experts, and gave the "student" opportunity to practice the desired training skills. The GSS programs relied mainly on specially prepared guidance materials, and they also gave the manager and trainer frequent opportunity to practice the desired skills. All programs were self-contained.

Preliminary versions of the programs were administered to 98 unit managers. Final programs were tested out on 19 Division personnel. Limited evaluation indicated the programs were effective and of utility to Division personnel. ↑

Self-contained programs, developed to teach instructors and training managers how to use performance-based training and evaluation practices in Army units, are described in ARI Technical Report 77-A12. Products include the Directed Practice Program for TO&E Unit Training Managers and Trainers, Appendix D (bound separately); Guided Self Study Program for TO&E Unit Training Manager Course, Appendix E (bound with Appendix E, Book Solutions to the Guided Self Study Program for training managers); Directed Practice Program for TO&E Unit Instructor/Trainer Course, Appendix G (bound separately); and Guided Self Study Program for TO&E Unit Instructor/Trainer Course, Appendix H (bound with Appendix I, Book Solutions to the Guided Self Study Program for unit trainers/instructors).

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SUMMARY AND CONCLUSIONS

PURPOSE

The purpose of this portion of the DIV SKILL effort was to develop alternate training programs to enable training managers and trainers located in units to employ performance-based practices in training and in evaluating individuals in their performance in the unit setting. A related goal was to examine the feasibility of implementing the training programs in field units, and to obtain preliminary data to help evaluate the relative effectiveness of the programs.

APPROACH

The work was performed in conjunction with the 7th Infantry Division, Fort Ord, California. Using official Army guidance documents dealing with the conduct and management of training, the functions performed by training managers and trainers were analyzed into tasks. After extensive review by the research staff, the training tasks were submitted to Division training personnel for their review and comments. Division personnel varied widely in indicating who in the unit performed the tasks. The general consensus was that few tasks were the responsibility of a single person.

Based on this input, a final set of tasks was prepared. Performance objectives for the tasks were then prepared and used to guide construction of performance tests and training programs. Because of anticipated limited time in which to try out the programs, miniaturized test versions were prepared for use as pre- and posttests.

In developing training programs, two training approaches were employed. Directed Practice (DP) and Guided Self Study (GSS) programs were developed for both manager and trainer. The DP programs involved frequent face-to-face interactions between managers/trainers and training experts, and gave the "student" frequent opportunity to practice the desired training skills. The GSS programs relied mainly on specially prepared guidance materials, and they also gave the manager and trainer opportunity to practice the desired skills. The GSS programs also encouraged the student to obtain assistance from the instructor if problems were experienced.

All programs were self contained; assembled program materials, plus official reference documents, constituted all a unit would need to implement a program. Once the current training manager in a unit completed a manager program, it was intended that he should be able to administer any of the manager and trainer programs to newly assigned training personnel.

EVALUATION

Because there was an interest in the Division in developing performance training capabilities quickly in unit managers and trainers, portions of early versions of the DP programs were administered to 98 unit managers before the programs were fully developed. Responses of managers to these early versions helped shape the final programs.

Final programs were tested out on 19 Division personnel. The pretest scores of these individuals on the miniaturized performance tests ranged widely. In contrast, their posttest scores showed improvement and much less variation. In light of the small numbers of individuals assigned to undertake the various programs, and because of uncontrolled sources of contamination, no quantitative comparisons between types of programs were attempted. Because of higher priority Division activities, a more elaborate test of the programs was not possible.

CONCLUSIONS

The following conclusions are offered, based on the limited evaluation data that were possible at this time:

1. The programs appear to be viable instructions for training managers and trainers in the skills that they will need in the unit.
2. Each program can be completed within a reasonable time period (2 or 3 days), and it can be accomplished with a minimum interruption of ongoing unit activities.
3. Training personnel need not absent themselves from duty in order to complete the programs.
4. The literacy level required by the programs appeared to be well within the capability of individuals who undertook the programs.
5. The programs do not require special media or equipment. They can be accomplished with the equipment normally available in the unit.
6. Feedback from Division personnel indicated that the programs were of considerable relevance and utility to them.

PRODUCTS

The products developed include the following, AVAILABLE FROM DDC:

1. A Directed Practice Program for training managers.

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2. A Guided Self Study Program for training managers.
3. A Directed Practice Program for trainers.
4. A Guided Self Study Program for trainers.
5. Comprehensive Performance Tests.
6. Miniaturized Performance/Knowledge Tests.

PREFACE

This report is one of two prepared under Work Unit DIV SKILL. Sponsored by the U.S. Army Research Institute for the Behavioral and Social Sciences, DIV SKILL sought to develop training programs to help unit training managers and trainers to employ performance-based practices in training and evaluating individuals in the unit. The related DIV SKILL report is "Motor Transport Operator Training: An Approach to Preparing Training Managers and Instructors to Design, Conduct, and Evaluate Performance-Oriented Training."

DIV SKILL was a part of the work program of HumRRO's Western Division at the Presidio of Monterey, California, with Dr. Howard H. McFann as Director. Members of the HumRRO research staff were Dr. William H. Melching, principal investigator, Dr. John E. Taylor, Dr. Morris Showel, Ms Jacklyn E. Hungerland, and COL (USA, Ret.) Mark F. Brennan.

Mr. Jack Sternberg of the Army Research Institute served as the COTR. Administrative support for the work was provided by the U.S. Army Research Institute Field Unit, Presidio of Monterey, the R&D coordinator of which was, successively, COL Ullrich Hermann and MAJ Joel S. Stephenson.

The cooperation and assistance of officers and men of the 7th Infantry Division, Fort Ord, California, where the study was carried out, is gratefully acknowledged.

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INTRODUCTION

The overall goal of Work Unit DIV SKILL was to develop training programs that will enable unit training managers and trainers to employ performance-based practices in training and evaluating the performance of men in the unit. The focus of the effort was on individual training and performance.

This report describes the procedures that were employed in developing the programs, and provides copies of products that evolved from the effort.

BACKGROUND

Training should prepare the soldier to perform his job. Unit operations, no matter how well planned, can never be executed any better than the ability of each individual to perform the required duties of his job.

The unit commander who has the responsibility of welding together a smoothly functioning tactical or combat support unit may receive men for his unit from a variety of sources. Some men who join the unit may be recent graduates of Advanced Individual Training courses from training centers. As such, they are qualified in their MOS only at entry level capabilities. Therefore, they will likely require additional training programs to acquire the remaining skills of their MOS and grade.

Other men may be graduates of Advanced Courses conducted by the service schools. They will have acquired many of the skills needed for higher grades in their MOS. However, these men must acquire the supervisory skills needed by the higher grades, and they need the opportunity to practice these skills in a unit setting.

A soldier may transfer from another similar unit where he served in the same MOS and grade. He should possess the required skills, but unless some systematic procedure is used for determining his skill level, his degree of skill proficiency remains a question.

A soldier who transfers from a unit where he has been serving in some other MOS is usually a candidate for considerable refresher training in the skills for his MOS and grade. An evaluation of his present skill level must be made to determine the training he should receive.

Compounding the unit commander's training responsibilities is the Army's newly instituted Enlisted Personnel Management System (EPMS). This system establishes a number of progressively more difficult skill levels for each Military Occupational Speciality

(MOS), with progression to an advanced skill level dependent on demonstrated mastery of the skills involved. It is the unit commander's responsibility to provide those training opportunities which will allow an individual to acquire those skills which are necessary to progress from one skill level to another.

PROBLEM

Within the past decade, major shifts in the Army's training philosophy have occurred. The use of the lecture method for group instruction, for example, has given way to an interest in individual, hands-on performance training. The emphasis has shifted from the instructor and what he is doing, to the soldier and his demonstrated capabilities. Soldiers learn by doing, not by listening or merely watching. Performance training makes the student active and centers instruction around him--giving him the time and support he needs in order to learn. Significantly, the training emphasis is shifting from the training centers and service schools to the unit.

At the same time, personnel assigned as training managers in TO&E units seldom have the opportunity to practice the performance of training management skills prior to assignment. Immediately upon assignment, they are expected to identify specific performance deficiencies, develop needed performance-based training programs, and maintain a high level of performance capability in the men in their unit.

A similar situation obtains for personnel who are assigned duties as unit trainers.¹ If they attended an instructor training course prior to the introduction of performance oriented training, it is likely that their instruction was "lecture" rather than "hands-on" oriented. If they did not attend an instructor training course prior to their new assignment, they will probably model their future behavior on what they have seen in the past . . . lecture rather than hands-on training. In either case, these trainers will be ill-prepared to administer individual performance tests, evaluate the performance capabilities of individual soldiers, or conduct performance-based training.

If unit training managers and trainers are to employ performance-based practices in training and evaluating men, training programs that will permit them to acquire the needed knowledge and skills must be

¹In this report, "trainer" and "instructor" are used interchangeably.

provided. Ideally, these programs should be self-contained, capable of easy administration within the unit, and designed to provide direct, hands-on practice to managers and trainers. They should be used in the field with equipment normally found within the unit. Additionally, since unit training personnel must be able to train their replacements, the need for simple, easily administered programs is reemphasized.

Having acknowledged the need for the training programs, an immediate question concerned the most ideal "form" that such programs should assume. The purpose of the research effort, therefore, was to develop alternate training programs for managers and trainers, and to evaluate the feasibility of implementing them in units.

RESEARCH PLAN

The work was performed in conjunction with the 7th Infantry Division located at Fort Ord, California, and it was undertaken in three phases. The major goal of each phase was as follows:

- Phase I - Train managers and trainers in the Division support Command in how to design, implement, and evaluate a performance-oriented training program.
- Phase II - Develop alternate training programs for managers and trainers in the Division combat elements.
- Phase III - Examine the feasibility of implementing the programs in field units and obtain data to help evaluate the relative effectiveness of the programs.

Phases I and II were conducted concurrently. The present report provides results from Phases II and III only.

A description of the activities and products of Phase I is provided in a separate report entitled "Motor Transport Operator Training: An Approach to Preparing Training Managers and Instructors to Design, Conduct, and Evaluate Performance-Oriented Training."

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RESEARCH PROCEDURES

DEVELOPMENT OF ALTERNATE PROGRAMS FOR MANAGER AND TRAINER

Task Lists for Manager and Trainer

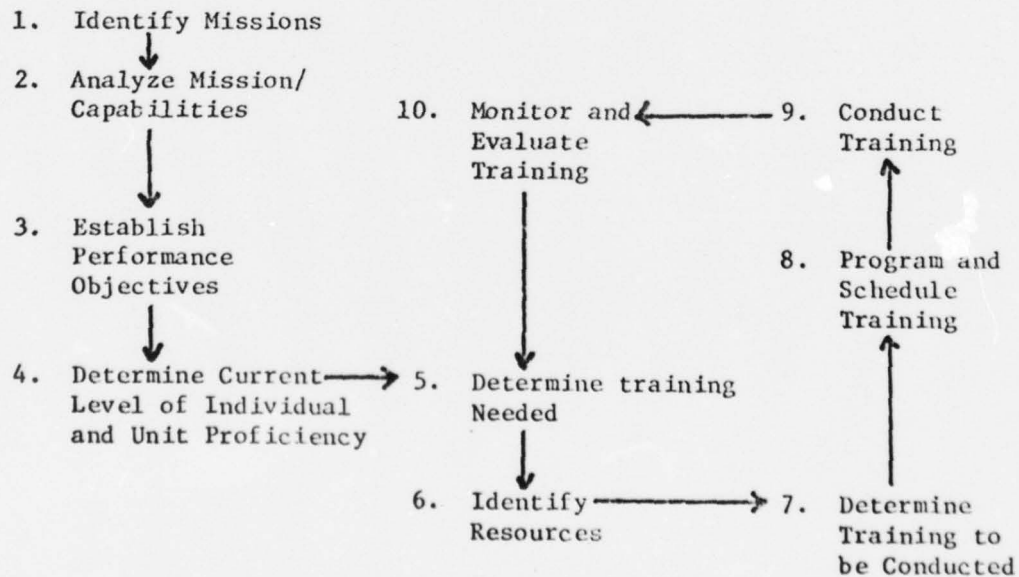
Consistent with system analytic procedures, the first step in development of training programs for the manager and trainer consisted of the generation of tentative task lists for each. Two Army publications served as primary reference sources for this step. They were:

TC 21-5-1, Training Management Digest. Training Management: An Overview, April 1973.

FM 21-6 (Test Edition), How to Prepare and Conduct Military Training, June 1974.

According to the authors of the TC, this document was prepared primarily for training managers. In contrast, the FM was prepared for use by trainers. While neither document presented a "formal task list," each document did list a series of steps that must be accomplished in training. These steps can be viewed as statements of tasks. The FM also compared briefly the responsibilities of the manager and the trainer.

The TC depicted a 10-step model for developing a training program. The goal of each step and the sequence with which steps must be completed, are shown below.



For each step, the TC described several activities that must be performed. Many of these activities, like the steps above, can be viewed as tasks. The research staff analyzed the steps and activities, elaborating, expanding, and combining them as seemed necessary and worthwhile, and drafted a trial set of tasks performed by the manager. The staff had had much experience in developing individual task statements in related research efforts. In fact, staff members had participated extensively over the past several years in efforts involving performance-based training technology. Therefore, these experiences guided them in the present undertaking. At this stage of the work, every effort was made to keep the task statements simple but comprehensive.

The draft task statements for the manager were circulated among the research staff for a critical review. Over several weeks, numerous discussions and meetings were held with respect to the task statements. As a result, various modifications and refinements were made.

During the period of internal review of the manager task list, the development of a set of task statements for the trainer was also undertaken by the staff.

As noted before, the main reference source for this list was FM 21-6. The FM described a 3-step backward planning process to be used by trainers in preparing and conducting training. These steps are:

- Step 1. Describe the Desired Results of Training
- Step 2. Prepare to Conduct Training
- Step 3. Conduct Training to Standards.

For each step the FM described the kinds of activities that must be accomplished. For clarity, the manual also provided several explicit examples of products that would typically result from application of the process. From the descriptions and illustrations of the steps, the research staff attempted to draft a cohesive set of tasks for the trainer. Again an effort was made to keep task statements simple but comprehensive.

The trainer task list underwent several critical reviews by the research staff. As a result of these reviews, various additions, deletions, and modifications were made to the list. At the same time a concerted effort was directed at identifying points of overlap in manager and trainer tasks. The result of this effort was the preparation of a single list of training tasks rather than two separate lists. Some tasks were believed to be unique to the manager, some unique to the trainer, and some tasks were believed to be shared by both the manager and the trainer.

Once the staff agreed on the composition of the list, it was submitted to training officers and NCOs in the 1st Brigade, 7th Division, for informal verification and validation. They were given the list and asked to answer these questions about each task statement:

1. Is this task performed in your unit?
2. If it is performed, who does it?¹
3. If two or more people perform it, who has prime responsibility?
4. If other tasks are performed, state what they are.

Responses were received from 20 persons (16 officers, 4 NCOs). Their experience in unit training jobs ranged from 1 month to 8 years, with the average being slightly over 21 months. In general, respondents varied widely in indicating who performed a task. A summary view might be that "everybody does everything." Respondents readily assigned themselves responsibility for tasks. One battalion commander, for example, wrote that "The battalion commander is responsible for all these tasks." In a sense this is true, for in the final analysis he is responsible for what his subordinates do in performing their duties. However, although he may be responsible, he need not be the primary performer of the tasks. While a tendency for some clustering of responsibility could be seen in the responses, perhaps the clearest impression was that few of the tasks were viewed as the sole responsibility of one person.

In discussions with respondents, a further clarification was obtained. Whether an individual functioned as a manager or a trainer depended greatly on the current situation. This, in turn, influenced what tasks he performed. Senior NCOs and officers who would normally function as managers, might have to act as trainers in the absence of qualified instructors. This was said to be especially likely in units that are being activated, but is not unique to them.

Using the respondents' opinions as suggestive, a final set of training tasks was prepared. The tasks retained on the list were tasks

¹ Respondents were invited to select from these titles/positions: Battalion Commander, Battalion S-3, Battalion Assistant S-3, Company Commander or Executive Officer, Other Company Officer, Training NCO, Platoon Sergeant, Squad Leader.

that, in the opinion of the research staff, were necessary and critical to successful preparation and conduct of a training program in a unit.

The list of training tasks is given in Table 1. An "X" is used opposite each task statement to indicate who in the unit performs the task. For each task performed by both the manager and the trainer, the person having prime responsibility for accomplishment of the task is noted by a footnote. A count of tasks shows that nine tasks were unique to the manager, seven to the trainer, and 12 tasks were shared. The training manager had prime responsibility for 11 of the 12 shared tasks.¹

Summary View of Manager and Trainer Roles

Out of the effort to develop task lists for the manager and trainer, fairly precise conceptions of their roles in training emerged.

Primary tasks of the training manager are judged to be:

1. Determine what tasks must be performed in the unit.
2. Develop tests to assess performance capabilities on tasks.
3. Train and monitor subordinates as they test and train soldiers.
4. Provide quality control of the training system.

Key actions of the manager would seem to be designing and monitoring.

Primary tasks of the trainer are judged to be:

1. Administer individual performance tests

¹To enable the reader to relate each task statement to the place in the programs where that task is included, a letter/number code has been used. This code appears in the two left hand columns of Table 1. The code indicates how the task is identified in the manager and trainer programs. For example, D-1 under the "Mgr POI" column indicates that the task "Instruct subordinates how to administer individual performance tests" appears as Task 1 in Module D in the manager programs. D-1 under the "Trainer POI" refers to another task in the trainer program.

TABLE 1. TRAINING TASKS PERFORMED IN TO&E UNITS

Task No.		Task	Performed by	
Mgr	Trainer		Manager	Trainer
POI	POI			
B-1	-	Prepare a list of possible missions	X	
B-2	-	List unit tasks the unit must perform if given mission is to be achieved	X	
B-3	B-1	Improve task statements when they are vague or incomplete	X ^a	X
B-4	B-2	List individual tasks each job holder in the unit must perform if a given mission is to be achieved	X ^a	X
C-1	C-1	List the specific actions that the individual must perform to accomplish the task	X ^a	X
C-2	C-2	Set the conditions for each individual task	X ^a	X
C-3	C-3	Set the standards of performance for each individual task	X ^a	X
C-4	C-4	Obtain or construct performance tests to measure how well each man performs his tasks	X ^a	X
D-1	-	Instruct subordinates how to administer individual performance tests	X	
-	D-1	Assemble equipment and obtain facilities for testing		X
-	D-2	Administer an individual performance test		X
D-2	-	Supervise subordinates in administering individual performance tests	X	
E-1	E-1	Identify which men need what training to bring them up to standards	X	X ^a
E-2	-	Rank the training deficiencies in order of priority	X	
F-1	D-4	Secure resources needed (personnel, equipment, facilities, time) to plan, conduct, and evaluate training	X ^a	X

Task No.		Task	Performed by	
Mgr Trainer POI	POI		Manager	Trainer
F-2	F-1	Decide the sequence in which knowledges and skills will be taught to the men who need training	X ^a	X
F-3	-	Decide the training method that will be used to conduct the training	X	
F-4	-	Prepare a training schedule	X	
D-3	-	Instruct subordinate leaders how to conduct training	X	
-	D-3	Prepare a lesson plan or lesson outline to be used as a guide when conducting training		X
-	D-5	Conduct a rehearsal of the training to be given		X
-	D-6	Conduct a class designed to teach men skills in which they are deficient		X
D-4	-	Supervise subordinate leaders in their conduct of training	X	
-	F-2	Keep a record of each man's progress in being able to perform the tasks that were taught		X
-	F-3	Give a report to your superior, orally, or in writing, on the results of the performance test		X
G-1	G-1	Evaluate utilization of training resources	X ^a	X
G-2	G-2	Interpret test results to identify training program inadequacies and possible causes of inadequacies	X ^a	X
G-3	G-3	Modify a training program to correct inadequacies	X ^a	X

^aPrime responsibility for accomplishing task

2. Identify individual performance deficiencies
3. Conduct performance training to correct deficiencies

Key actions of the trainer would seem to be testing and training.

Performance Objectives for Manager and Trainer

The next step undertaken in the development of the programs was the preparation of performance objectives. Each training task (action) was converted into an objective by adding to it a description of the important conditions under which the task must be performed, and by providing information relative to the standard of performance with which the task must be performed. These elaborations were added to provide guidance to test constructors and to persons who must develop the training programs.

Ideally, the specification of these conditions and standards of performance should be directly related to actual job circumstances. Furthermore, they should be as explicit and as meaningful as possible. Performance standards, for example, must state clearly the behavior that will be accepted as evidence that the objective has been satisfactorily obtained. Where possible, standards may be expressed in quantitative terms.

The research staff strove to attain these ideals, but they were guided by other considerations too. For example, while a detailed elaboration of the conditions and standards for a task is desirable because it leads to improved communication about intended student performance, there is also some merit in stating objectives in a more parsimonious fashion. As a specific example, consider the manager task "Prepare a list of possible unit missions." In all probability, this task would likely always be performed under conditions of "Given guidance from the commander," and "With the assistance of other unit personnel." These two conditions are important but not unique to this task. They are present for all the manager tasks; therefore, they can be omitted without degrading the objective. In substance, it is believed to be more useful to include as conditions only those that are both important and unique to the task. This procedure tends to reduce the number of performance conditions that need to be stated.

Stating meaningful standards for the manager (or trainer) is particularly difficult since many of his tasks call for him to judge the adequacy of the activities or products of a subordinate. When the task calls for him to follow a prescribed set of procedures, adherence to these procedures becomes a convenient standard. In other cases, standards involving more qualitative criteria were cited.

Statements of the performance objectives for the manager and trainer are contained in Appendix A.

DEVELOPMENT OF PERFORMANCE TESTS FOR MANAGER AND TRAINER

The development of performance tests was undertaken concurrently with the development of training programs for the manager and trainer. Separate research teams undertook the two activities.

The tasks derived for the training manager and trainer (see Table 1) constituted the basic information on which the performance tests were developed. As a first step, these tasks were clustered into functional, job-related performance clusters.¹ This clustering resulted in the identification of five major areas of training manager/trainer activities. Each of these activity areas will be discussed below.

Constructing a Performance Test for Individuals

In a performance-oriented training program, construction of the performance tests is the key and primary step to be taken. Since these tests measure, in a precise fashion, the output or product of the training program, they should--when properly constructed--define the training program. The tests are based on identified job tasks that are clustered for job-criticality and job-relatedness. Performance tests usually encompass more than one single training objective. Furthermore, they enumerate specifically the conditions under which performance will take place or be required and the exact individual actions or skill sequences for each task.

The standards of performance must also be defined. These standards are usually based, initially, on experience and common sense (*e.g.*, "How long should it take an E-1 to disassemble, clean and assemble this weapon, and what factors would I look for to evaluate his performance--speed? sequence? safety?....). These initial standards are subsequently verified and modified on the basis of empirical data gathered from the "dry-running" of the test.

¹In a subsequent section of this report in which the development of training programs is described, a second scheme for clustering training tasks is introduced. There is no intent to imply that there should be one system for clustering tasks when performance tests are being built and another when a training program is being built, but merely that alternate clustering schemes are possible.

Test development also requires the preparation of certain administrative documents to insure standardization of test administration and scoring, and accuracy of recording and reporting test results. There must be: 1) directions to the test administrator for preparing for and conducting the test; 2) scoresheets (a step-by-step performance checklist specifying how the individual is to accomplish the required actions); and 3) recording/reporting forms for training records and remedial training needs.

When the administrative materials, performance standards and procedures are verified, the test may be introduced into the training system for use as an evaluation instrument and also as a guide to training.

For clarity, the tasks from the task list that are involved in constructing a performance test are listed below.

Task No.		Task	Performed by	
Mgr Trainer POI	POI		Manager	Trainer
B-1	-	Prepare a list of possible missions	X	
B-2	-	List unit tasks the unit must perform if given mission is to be achieved	X	
B-3	B-1	Improve task statements when they are vague or incomplete	X	X
C-1	C-1	List individual tasks each job holder in the unit must perform to accomplish the task	X	X
C-2	C-2	Set the conditions for each individual task	X	X
C-3	C-3	Set the standards of performance for each individual task	X	X
C-4	C-4	Obtain or construct performance tests to measure how well each man performs his tasks	X	X

Preparing to Conduct Training

Once the appropriate performance tests have been constructed, preparations can be made for their use in the conduct of training. In pre-planning for training, determinations must be made regarding the order in which skill areas (identified by the tests) will be taught

and whether sequencing of sub-skill components is necessary. Performance training techniques appropriate to the skill areas to be taught must be selected and training support needs identified.

Support materials and documents must then be assembled, or prepared on-site, and arrangements must be made for the facilities, time, equipment and instructional media required for the training.

After preparing the training site--being sure there is sufficient room for demonstration, skill practice and testing--the instructors who are to conduct the training must be trained. Effective instructor training is critical to the success and effectiveness of the training system, of which they are the foundation. There must be reliability in testing as well as in the conduct of training. In order to achieve reliability, trainers must be rehearsed on the conduct of performance training and testing (according to procedures outlined in TRADOC Pam 600-11). In addition, the trainers must have mastery of the skills they are to teach. They must take the performance tests and, if they do not pass, they must go through skill practice until they do pass the tests.

When trainer reliability has been established, they must be instructed in the use of the training guidelines and training record and report forms and procedures.

Once these preparations have been accomplished, trainees may be scheduled for training. The tasks cited on the task list that are involved in preparing to conduct training are listed below.

Task No.		Task	Performed by	
Mgr	Trainer		Manager	Trainer
POI	POI			
D-1	-	Instruct subordinates how to administer individual performance tests	X	
D-3	-	Instruct subordinate leaders how to conduct training	X	
-	D-1	Assemble equipment and obtain facilities for testing		X
E-2	-	Rank the training deficiencies in order of priority	X	
F-1	D-4	Secure resources needed (personnel, equipment, facilities, time) to plan, conduct, and evaluate training	X	X

Task No.		Task	Performed by	
Mgr Trainer	POI		Manager Trainer	
F-2	F-1	Decide the sequence in which knowledge and skills will be taught to the men who need training	X	X
F-3	-	Decide the training method that will be used to conduct the training	X	
F-4	-	Prepare a training schedule	X	
-	D-3	Prepare a lesson plan or lesson outline to be used as a guide when conducting training		X
-	D-5	Conduct a rehearsal of the training to be given		X

Conducting Training

The procedures to be followed in conducting performance-oriented training are described in detail in TRADOC Pam 600-11. These procedures call for: organization and assignment of trainees, trainers, space, and equipment; brief orientation; demonstration; supervised skill practice; and performance testing.

In addition, training follow-up must take place, providing for remedial or make-up skill practice and re-testing. The tasks involved in conducting training are listed below.

Task No.		Task	Performed by	
Mgr Trainer	POI		Manager Trainer	
-	D-6	Conduct a class designed to teach men skills in which they are deficient		X
-	D-2	Administer an individual performance test		X
-	F-3	Give a report to your superior, orally, or in writing, on the results of the performance test		X

Conducting and Interpreting Results of Performance Tests

Because effective performance testing is so essential in the training system, this job activity area merits greater concentration than that given to it in the previous activity. The overlap, while seemingly redundant, is justified by the need to insure that testing and appropriate utilization of test results are fail-safe.

Of particular importance, as noted earlier, is the training of test administration personnel. They must be rehearsed and required to conduct the test(s) until reliability of scoring is assured. Although performance test scoring is more objective than other types of tests, the training system will not maintain effectiveness if there are variations in the go/no-go judgments that are required.

The actual conduct of the test requires standardization in the conditions, the directions to the trainee, and scoring. Feedback (explanation of failure points) to the examinees must also be provided--preferably in a constructive manner.

After a group of trainees has completed a test, the results must be recorded and tallied to determine individual failures and training needs by skill area. These results and the interpretation of training status and needs must then be reported to the training officer or NCO.

The tasks involved in this activity are listed below.

Task No.		Task	Performed by	
Mgr	Trainer		Manager	Trainer
POI	POI			
-	D-1	Assemble equipment and obtain facilities for testing		X
-	D-2	Administer an individual performance test		X
D-2	-	Supervise subordinates in administering individual performance tests	X	
E-1	E-1	Identify which men need what training to bring them up to standards	X	X
E-2	-	Rank the training deficiencies in order of priority	X	
-	F-3	Give a report to your superior, orally, or in writing, on the results of the performance test		X
G-2	G-2	Interpret test results to identify training program inadequacies and possible causes of inadequacies	X	X

Exercising Quality Control of Training

The operational training system must be monitored to maintain the quality of training, testing, and records. Use of resources must be monitored to preclude abuse, and adequacy of resources must be evaluated periodically to insure that training needs are being fulfilled.

Training system effectiveness is indicated best by the quality of the system's product--can the soldier perform the skills he was taught? An ongoing quality control system of re-testing samples of trainees must be established to measure training effectiveness. Procedures must also be established for taking actions to correct any training deficiencies indicated by re-testing results. Such corrective actions might be related to improvement of tests or testing procedures, modifications in the conduct of training or modifications in administrative policies, procedures, or requirements that might be interfering with training.

The tasks related to exercising quality control of training are listed below.

Task No.	Mgr Trainer	Task	Performed by	
POI	POI		Manager Trainer	
D-2	-	Supervise subordinates in administering individual performance tests	X	
-	D-6	Conduct a class designed to teach men skills in which they are deficient		X
D-4	-	Supervise subordinate leaders in their conduct of training	X	
E-2	-	Rank the training deficiencies in order of priority	X	
-	F-2	Keep a record of each man's progress in being able to perform the tasks that were taught		X
G-1	G-1	Evaluate utilization of training resources	X	X
G-3	G-3	Modify a training program to correct inadequacies	X	X

COMPREHENSIVE PERFORMANCE TESTS

Based on the derived task list clusters, five comprehensive performance tests were developed--one for each of the job performance activities described in the previous section. Copies of these tests are included as Appendix B.

The tests were developed in two stages: first, the detailed procedural steps for the performance checklists and second, the test administration specifications.

The performance checklists were developed through a rational and iterative refining process. Initially the tasks for training managers and trainers were clustered into what appeared to be the most logical behavioral sequences for...constructing a performance test, conducting training,... At this time the tasks and groupings were cross checked with the 10 steps in TC-21-5-2 (Performance-Oriented Training) to insure that nothing was omitted. Along with this activity each task was subdivided into its detailed elements and sub-elements which were considered to be essential for construction of a comprehensive test of the tasks of each cluster.

Beginning with the 10 phases (clusters) outlined in TC-21-5-2, and based upon prior experience in the development and use of performance tests, the staff proceeded to draft a series of candidate performance tests, one for each cluster of tasks. Each of these was then evaluated and refined (examined for omissions, insufficient detail, redundancies,...). The candidate tests were subjected to three iterations with each iteration refining the previous version. By the third iteration revising, telescoping and combining had reduced the number of clusters to five, reflecting five major and comprehensive phases in the conduct of performance-oriented training. At this point, then, five comprehensive checklists had been constructed which specified in detail the important and interrelated behaviors to be performed in each cluster.

In the process of developing performance tests, the staff became increasingly convinced that the distinctions between training manager and trainer were more academic than real. A person in a unit training assignment may do things that sometimes label him as a trainer, and other things that suggest training manager. As noted earlier, what is done depends greatly on the situation--the need. If a manager is unable to perform a certain task, then a trainer may have to do it. Similarly, if a trainer can't do the task, it may fall to the manager. Because of this "interchangeability" in performance of training tasks, it was concluded that the comprehensive performance tests should focus on the five major training activities independently of who (manager or trainer) might perform them. Thus, the tests that were developed purport to assess the accomplishment of important clusters of training-related activities, regardless of the labels attached to particular

people. The tests, therefore, are not designed exclusively for the manager or for the trainer.

The checklists that were developed reflect the logical arrangement of all the tasks (and elements) required in each of the five comprehensive performance areas. From these comprehensive checklists, combinations of items (task and procedures) can be extracted to build miniaturized or simulated-performance versions of the comprehensive tests to test any combination of tasks under consideration (see the following sections for a description of one such miniaturized version of the comprehensive test).

Upon completion of the checklists, administrative instructions and directions to the examiner were drafted for each of the five tests. These administrative materials included statements of objectives, required actions, testing conditions and standards, and the directions to be read to the examinee. Particular difficulty was experienced in this stage in spelling out standards of performance. Inasmuch as these tests call for the demonstration of one's ability to apply the principles of performance-oriented training and to carry on somewhat involved activities and to make decisions over extended periods of time, the specification of time standards was most difficult. Further, the cognitive nature of these procedures frequently blurred the distinction between standards and the conditions under which the test was to be performed.

It should be noted that much of the content of the performance test for managers and trainers is cognitive in nature, requiring application of knowledge by the person being tested. Having (presumably) gone through a training program prior to being tested, the individual would be expected to possess the required knowledge to produce the specified performance.

It should be noted further that the time and resources required to administer these comprehensive tests (see "Directions to Evaluator" preceding each test) greatly reduced the feasibility of administering the tests in the operational setting of the 7th Division.¹ Until their overall feasibility of administration is determined, the comprehensive tests serve as detailed checklists of training manager/trainer duties and, therefore, as viable training guides.

In order to measure knowledge and performance capabilities of training managers/trainers within context of the Directed Practice and

¹Feasibility has not been determined at this time. Time constraints on the project, combined with availability limitations on time, personnel and other resources in the 7th Division, precluded administration of the comprehensive tests.

Guided Self Study programs, miniaturized tests were derived from the comprehensive performance tests. These tests will be discussed in the following section.

MINIATURIZED PERFORMANCE/KNOWLEDGE TESTS

Two miniaturized tests were derived--one for training managers and a parallel one for trainers. Copies of these tests are included as Appendix C. The purpose of the tests is to measure performance/knowledge of the concepts of performance-oriented training and still remain within the limitations imposed by operational or administrative obligations.

The test for training managers includes items from all five performance areas, including: behavioral objectives; identification of individual tasks; recognition of essential elements of a performance test; recognition of the major phases of performance-oriented training; preparation of a performance test; preparation of trainers and test administrators; conducting training; administering tests and interpreting test results; recording test results; and exercising quality control.

The test for trainers is slightly more abbreviated, excluding the management-level requirements for identification of unit tasks, writing of behavioral objectives, identification of individual tasks and preparation of a performance test.

These miniaturized tests were used as the pre-post training instruments in the Directed Practice and Guided Self Study programs.

DEVELOPMENT OF PROGRAMS FOR TRAINING MANAGER

The development of training programs for the manager and trainer proceeded concurrently with the development of the performance tests. As noted earlier, separate research teams undertook the two activities.

It was planned that all programs would be self-contained. Assembled program materials, plus official reference documents, were to constitute all a unit would need to implement a program. This goal guided not only the development of the manager programs, but also the trainer programs.

Once the current training manager in a unit completed the manager program, it was intended that he should be able to administer it to newly assigned training manager personnel. In this way, a capability could be built up within the unit, and the training program would provide a continuity from one manager to the next.

In arriving at a concept of an "ideal" training program, certain needs and conditions in the unit assumed particular importance. These included:

- Periodic turnover of training personnel
- Need to evaluate and train men of varying capabilities
- Need to develop programs that would be easy to administer
- Merit of providing hands-on training to managers
- Need for self-contained programs

Guided by these factors, two training approaches were conceived. One approach, which resulted in the Directed Practice (DP) program, sought to transmit skills by a series of tutorial interactions between training personnel and special training experts. The approach involved frequent face-to-face consultations, demonstrations, administration of practical exercises, review of sample products, etc. The role of the training experts, acting as instructors, was to provide direct practice to the trainee manager in the performance of training manager tasks. Thus, following explanations and demonstrations, the trainee manager had to practice the designated manager tasks. The expert provided frequent feedback to the manager, and conducted a "check out" of his capabilities as training progressed. Eventually, after the manager demonstrated that he could perform adequately as a unit training manager, it was expected that he would be able to train his subordinates and/or replacements.

The second approach, which resulted in the Guided Self Study (GSS) program, sought to enable new training managers to acquire the desired manager skills by independent study and practice. A special self-instructional package was prepared for this purpose. It was guided by the same set of objectives that guided the DP program. The interactions were now between the trainee manager and the instructional materials. These materials were designed to provide needed information to the manager and to give him concrete practice in performing designated manager tasks. To provide feedback to the manager about his performance, he had to compare his products (individual task statements, performance objectives, performance tests, training analyses, etc.) with "expert" solutions contained in the program.

It was intended that written instructions should provide primary guidance to the student. However, it was also planned that there should be opportunity for the trainee manager to receive guidance from an expert. Thus, for both of these reasons, the program was called a guided self study one. Also, at specific places in the program, the manager was required to inform the person administering the program that he had completed certain portions of the instruction and was now

ready for a "check out." As a result of his training, and after a period of performance on the job, the manager should be able to train his subordinates and/or replacements.

In developing the several programs, it was decided to begin development of the DP Program for Manager first.

DP Program for Training Manager

As a first step in developing the manager DP program, the several objectives established for the program were formed into meaningful clusters or modules. Each module contained a set of closely related objectives. The modules were then placed in a sequence that, in large part, reflected the sequence with which the manager would actually perform his job. For convenience, modules and their tasks were lettered and numbered for easy identification and retrieval. This letter/number code is the same as that given on the task list.

A list of the modules in the manager DP program is as follows:

- A. Introduction to Performance-Oriented Training
- B. Determination of Job Requirements
- C. Preparing Performance Tests
- D. Training Personnel to Prepare, Conduct and Evaluate Performance-Oriented Training
- E. Identifying Training Needs from Performance Test Results
- F. Training Support
- G. Quality Control.

A complete copy of the manager DP program appears in Appendix D, "Directed Practice Program for TO&E Unit Training Manager Course." Page 3 of that appendix lists the several tasks associated with each module.

Development of Lessons

In constructing lessons, some of the tasks of a module were combined and formed into a single lesson. For example, Module D contains four tasks but only one lesson. Combining tasks into a single lesson was generally done when, in the opinion of the research staff, the tasks were so closely related that it would be artificial and unproductive to maintain a separation. On one occasion (Module E), tasks were combined to form one lesson primarily because the skills to be learned were relatively simple and easily accomplished in a single lesson.

To begin the program, a special introductory lesson on performance-oriented training was developed. This lesson was not based on a previously identified manager task, but it was added to provide the

manager with basic information about performance-oriented training. It was felt that he might need this information in managing the training activities in his unit.

The introductory lesson, like all other lessons, was constructed to provide direct guidance to the person (*e.g.*, current training manager) who would likely administer the program. Thus, it stated an objective for the lesson, cited specific reference materials needed to administer the program, listed suggested instructor activities, and ended with a list of required student activities. Also, special supporting materials had been prepared to help the instructor, and they were located immediately behind the lesson page.

The remaining lessons shared a common format:

1. A brief title opposite the lesson number.
2. A terminal objective--the action the student must be able to perform after completing the lesson. This objective was an elaboration or expansion of the training task (or tasks) the lesson sought to attain. It often placed the task in a specific context. For example, Lesson 2 requires the student to "identify unit missions" and "list unit tasks" as stated in a given ARTEP.
3. An enabling objective--the knowledge the student must acquire and use to attain the terminal objective. On occasion more than one such objective was stated. Enabling objectives were obtained by analyzing the terminal objective and inferring the knowledge that would be needed.
4. A list of references for the lesson. Specific assignments for the student were cited.
5. Instructor activities--what the instructor should do to conduct the lesson. Every effort was made to provide explicit guidance to the instructor.
6. Student activities--what the student should do to accomplish the lesson. Again, every effort was made to provide explicit guidance to the instructor regarding the activities he should require of the students.
7. Supporting materials--specific information to help the person conducting the instruction. These materials were provided so that the instructor would not have to spend undue time developing class notes, preparing practical exercises, developing typical sample products, etc. Having these things available for immediate use by the instructor was consistent with the intent to develop a self-contained program. The materials for each lesson were located immediately behind the lesson page.

GSS Program for Training Manager

This program was based on the same set of modules and tasks as the DP program. In substance, the two programs were identical. A major difference was that the GSS program instructions were directed at the manager (*i.e.*, the student) and not at the person administering the program. It was intended to be administered to the manager with little or no intervention by another person. To highlight this aspect, the personal pronoun "You" was used throughout.

A copy of the manager GSS program appears in Appendix E, "Guided Self Study Program for TO&E Unit Training Manager Course."

Development of Lessons

The number, instructional content, and organization of lessons paralleled those in the DP program. Thus, after an introduction to performance-oriented training, the remaining lessons focused on learning activities associated with accomplishing the 21 manager tasks. The introductory lesson stated an objective, cited specific reference materials relevant to the program, provided some background information, and ended with a list of things for the manager to do. The last section asked him to answer questions about concepts discussed in the required reading assignments. It then directed him to specific pages in Book Solutions where he could compare his answers with those given there. The Book Solutions (see Appendix F) was separated from the rest of the program, and it contained answers to all questions and exercises given in all the lessons.

The format of the remaining lessons was as follows:

1. A brief title opposite the lesson number.
2. A terminal objective--the action the student must be able to perform after completing the lesson.
3. An enabling objective or two--the knowledge that the student must acquire and use to attain the terminal objective.
4. A list of references for the lesson. Specific assignments were cited.
5. A section called "Some Information"--specific information to help the manager accomplish the lesson. This information was comparable in part to that provided in the DP program under the heading "Supporting Materials." It defined terms, gave examples, explained procedures to follow, etc.
6. A list of things to do--specific instructions about actions to take in completing the lesson. The student was typically

asked to read specific reference material, examine or study additional material located immediately behind the lesson page, perform an assigned task, and prepare a particular product. When he was finished, he was directed to compare his product with that found in Book Solutions.

DEVELOPMENT OF PROGRAMS FOR TRAINER

Work on development of programs for the trainer was begun shortly after progress was made on the manager programs. Since some training tasks were performed by both the manager and trainer, it was anticipated that trainer lessons covering these tasks would be highly similar if not identical to those already developed for the manager.

The trainer programs, like the manager programs, were to be self-contained. As a related matter, special thought was given to the need to develop programs that could be accomplished by persons who possessed only moderate literacy capabilities. The amount of reading required by students, for example, was kept low. The same applied with respect to amount of written material to be produced by students.

During the preparation and presentation of an early version of the trainer program (see subsequent section entitled ADMINISTRATION OF EARLY VERSIONS OF DIRECTED PRACTICE PROGRAMS), the view was adopted that, since it is the manager who must train and evaluate his trainers, it is the manager who should be the primary target of an instructor training program. That view still holds. Thus, with regard to implementation of the trainer programs in the unit, it is expected that, after the manager completes a manager program he will then complete a trainer program. As a result, the manager will then be able to train all newly assigned training personnel--both manager and trainers. Whether subsequent training of trainers should be done by the manager or by the trainer is left to the discretion of the manager.

The trainer programs were to be developed in both the Directed Practice (DP) and Guided Self Study (GSS) formats. The DP program was developed first.

DP Program for Trainer

In developing the trainer DP program, trainer tasks were clustered into modules in a fashion like that described for the manager. With two exceptions (Modules D. and E.), the titles of modules for the trainer were the same as for the manager. Of course, there were certain differences in the tasks that made up the several modules, and these differences were reflected in module content.

A list of the modules in the trainer DP program is as follows:

- A. Introduction to Performance-Oriented Training
- B. Determination of Job Requirements
- C. Preparing Performance Tests
- D. Conduct of Performance-Based Training
- E. Determination of Training Needs
- F. Training Support
- G. Quality Control.

A complete copy of the trainer DP program appears in Appendix G, "Directed Practice Program for TO&E Unit Instructor/Trainer Course." Page 3 of that appendix lists the several tasks associated with each module.

Development of Lessons

In constructing lessons for the trainer DP program, tasks were combined in ways similar to those described for the manager DP program. The trainer program had 11 lessons against 12 for the manager.

The format of lessons was identical to that used in the manager program. Objectives, references, instructor activities, student activities, and supporting materials were all included as before. Every effort was made to provide complete guidance to the person who would conduct the instruction.

GSS Program for Trainer

This program was based on the same set of modules and tasks as the DP program. In substance, the two programs were identical. A major difference was that the GSS program instructions were directed at the student trainer and not at the person administering the program. It was intended to be administered to the trainer with little or no intervention by another person. To highlight this aspect, the personal pronoun "You" was used throughout.

A copy of the trainer GSS program appears in Appendix H, "Guided Self Study Program for TO&E Unit Instructor/Trainer Course."

Development of Lessons

The number, instructional content, and organization of lessons paralleled those in the DP program. The format of the program, however, was more like the manager GSS program than the trainer DP program. There was a separate segment called Book Solutions (see Appendix I) to enable the student to compare his answers with those of experts. Also, at specific places in the program, the trainer was required to inform

his instructor that he had completed certain portions of the program and that he was now ready for a "check out." This enabled the person administering the course to monitor the progress of the trainer more effectively.

EVALUATION OF PROGRAMS

ADMINISTRATION OF EARLY VERSIONS OF DIRECTED PRACTICE PROGRAMS

Right from the start of the effort, there was an interest in the Brigade in developing performance training capabilities quickly in unit managers and trainers. In response to this interest, and to provide useful feedback during the developmental period, the research staff administered early versions of the two Directed Practice programs to a number of unit managers.

Manager Program

An early version of the manager DP program was administered to 53 managers. The training was conducted in three sessions, each session lasting approximately 1½ hours. Not all managers attended all sessions; some attended only one or two. The training that was given at this time focused on the following selected manager tasks: analyzing unit missions into unit tasks, analyzing unit tasks into individual tasks, establishing performance conditions and standards, and judging the adequacy of existing training programs.

To obtain information about the knowledge managers already had about performance-based training, an informal job knowledge test was administered prior to the conduct of the instruction. Feedback about correct answers was provided to managers immediately after they completed the test. The items that made up this test are as follows:

Job Knowledge Test

1. Suppose you are a training officer/NCO and a subordinate presented this list of tasks to you for inclusion in a training program. Check the tasks in the list in which you feel the desired soldier action is vague or unclear and in need of improvement.
 - a. Dig a foxhole.
 - b. Construct a range card.
 - c. Understand use of the LAW.
 - d. Start a generator.
 - e. Recognize the need for discipline.
 - f. Learn ground navigation skills.
 - g. Select site for a foxhole.
 - h. Be responsible for preventive maintenance.
 - i. Know employment of crew-served weapons.

2. For each task you checked in 1. above, indicate what was vague or unclear about it, and rewrite each task statement so that it is more precise.
3. For one of the following list 5 tasks the person would likely perform.
 - a. Cook
 - b. Rifleman
 - c. Truck driver
4. Select 3 of the tasks you listed in question 3., and describe as clearly as you can (a) the conditions under which the person might perform each task, and (b) the level of performance (that is, the performance standard) you would expect the newly assigned soldier to achieve.
5. In your own words, define a performance test as you think it is (or should be) used in the Army. Be as descriptive as you can, being sure to cover:
 - a. Purpose of performance test.
 - b. Who might construct performance test items.
 - c. Basis on which items should be built.
6. How do you identify which new men in your unit need what kind of training? Be specific.
7. In your opinion, what are the most important elements of performance-based training? Be specific but brief.
8. For one of the following missions, list some of the critical unit tasks that would have to be performed:
 - a. Rifle Platoon--Prepare a defensive position in anticipation of an attack by enemy infantry.
 - b. Mortar Section--Provide fire support in response to a request from a platoon leader.
 - c. S&T Company--Transport supplies to an infantry battalion in a defensive position.
9. Suppose you observed 3 instructors conducting instruction and you noted the following:
 - a. SGT Rampy--Gave clear explanation and demonstration of how to disarm a Claymore mine. He then answered all questions thoroughly. After that he dismissed the class.

- b. SGT Banks--Conducted the same class as SGT Rampy, and after the demonstration and questions, he had each soldier practice disarming the weapon. When everyone had practiced, he checked to see that each man could do the task.
- c. SGT Overton--Conducted the same class as SGT Rampy, and after the demonstration and questions, he started to check-out each man's ability to do the task.

Which instructor did a better job and why?

- 10. What is the importance of feedback to:
 - a. the student?
 - b. the instructor/trainer?
 - c. the training manager?
- 11. When is feedback most effective?

Some general impressions gained from administration of this test are these. The ability of managers to pick out task statements that are vague and in need of improvement varied widely. While several managers could identify each vague statement, only a few could offer appropriate improved statements. Yet when asked to compose sample task statements for a typical enlisted job, more than half of the managers could write clear and objective statements. Those who could do this could also state meaningful and objective performance conditions and standards. While most managers suggested that the purpose of a performance test was to evaluate the performance of men, they seemed to prefer an interview approach rather than administering tests to identify who needed training. Finally, almost all managers were cognizant of the importance of feedback to successful training.

The performance of managers on this test suggested no major changes in the content of the program, but the merit of placing emphasis on certain key concepts and procedures seemed clear. Thus, for example, special attention was devoted to the use of individual performance tests as diagnostic tools and as means for evaluating current training.

Trainer Program

An early version of the trainer DP program was administered to

45 managers.¹ This training required three sessions, each session lasting about 1½ hours. Not all managers attended all sessions; some attended only one or two. The training that was given at this time was directed at giving the manager practice in performing selected trainer tasks, such as, stating individual tasks, preparing performance tests, administering performance tests, and conducting instruction.

A brief multiple choice survey or test dealing with trainer practices was administered prior to the instruction. Answers to the survey were not scored, but a discussion of possible answers was provided to the managers immediately upon completing it. The items that made up this test are as follows:

Instructor Survey

In each item select the one best answer.

1. In training soldiers, which procedure should you use?
 - a. Tell them what they have to do.
 - b. Have a demonstration and let the rest watch it.
 - c. Have a demonstration and let the soldiers practice.
 - d. Have a demonstration, let the soldiers practice, and then check each one out individually.

2. Which is the most practical way to keep track of what your men can do?
 - a. Fill out a report and send it in to the Company Training NCO.
 - b. Let the platoon leader and training NCO keep the record from the training schedule.
 - c. Keep the record of each individual in your pocket notebook.
 - d. Keep it in your head.

3. A lesson plan should contain:
 - a. A performance test and administrative details.

¹As discussed earlier, the view was adopted here that, since the manager is responsible for training and evaluating unit trainers, the initial target of the trainer program should be the manager himself. Thus, the trainer program was administered to managers.

- b. A planned schedule for your introduction, demonstration, and practical work with a time allocation for each.
 - c. Administrative details alone.
 - d. A performance test alone.
4. Suppose you received the following guidance, "The men in your unit are not as sharp as they should be in squad tactical movements." What should you do?
- a. Put all your men through squad tactical movements.
 - b. Select the squad tactical movements you think men need training in and give the training.
 - c. Ask your superior which men were weak.
 - d. Do nothing, since your superior didn't tell you to conduct training in squad movements.
5. The Company Commander has assigned you responsibility for conducting night compass training for 12 new men who have joined the unit. Who is responsible for selecting the area where instruction will occur and obtaining the compasses?
- a. The company Commander
 - b. The Supply Sergeant
 - c. The Training NCO
 - d. You
6. How skilled should you be in performing the tasks in which you are instructing?
- a. Highly skilled.
 - b. Skilled enough to pass the performance test.
 - c. Not necessary to be skilled in the tasks.
7. Why should you report the result of performance tests to your superior?
- a. So that he will know you conducted the training.
 - b. So that he will know who passed and who failed.
 - c. So that he can make arrangements for retraining and retesting of those who failed.
 - d. So that he can make out his training reports.

The responses of managers to this test, as well as their responses to the instruction that followed, suggested no need for major changes in the program. It was generally agreed, however, that supervised opportunities to practice conducting instruction and administering performance tests were the major requirements to include in a trainer program.

TRIAL ADMINISTRATION OF FINAL PROGRAMS

Prior to completing the development of the programs, tentative plans were made for the preliminary tryout of the full programs in the Brigade. Since a large number of managers (98) had already experienced various portions of early versions of the programs, concern was expressed about the possibility of obtaining a sufficient number of "unexposed" managers. Thus, several weeks before the program was to be completed, preliminary arrangements were made with the Brigade to provide twenty managers for program tryouts. It was planned to assign five managers to each of the following four cells:

Focus of Program	Program Format	
	DP	GSS
Manager program		
Trainer program		

Manager Programs

The Brigade endeavored to make available appropriate personnel for the tryout of the final programs, but due to high priority training activities, only a limited number of individuals could be provided. Of the 10 personnel planned for the two training manager programs, only 9 were available for participation on the first day, and of these, 4 had participated in one of the previous pilot training programs. These 4 were assigned to the GSS program; the other 5 were assigned to the DP program. To determine the knowledge and skills the 9 men had in performance training, the miniaturized performance/knowledge test for managers was administered on the first class day.

Instruction by the DP program was scheduled to occur for two hours per day for four days. The total time (8 hours) was much less than the research staff would have liked, but additional time was not available. Since all lessons of the DP program could not be fitted into the 8 hours, instruction was conducted only in those lessons that, in the opinion of the staff, would be most useful to managers. The lessons involved were:

1. Introduction to Performance-Oriented Training
2. Identifying Unit Missions and Unit Tasks
3. Improving Vague Task Statements
4. Preparing Individual Task Statements
5. Preparing Performance Tests

6. Training Personnel to Prepare, Conduct, and Evaluate Performance-Oriented Training
12. Evaluating Training Program Effectiveness and Taking Corrective Action.

GSS students were not told to omit any of the lessons, and they were directed to devote as much study time as they needed to complete the program. They were asked to appear on the last DP class day and take a posttest.

Of the 5 men who were initially assigned to the DP program, all did so on an irregular basis. Of the 4 men assigned to the GSS program, only 3 completed it.

On the final day of the DP class, a posttest (the miniaturized test) was administered to 8 men (5 from the DP class, 3 from the GSS class).

Trainer Programs

As in the manager programs, higher priorities precluded the Brigade from making available 10 personnel who had not participated in either of the pilot programs. Of the 10 persons who were made available, there were 5 from an Artillery battalion who had no previous exposure to one of the programs. These individuals were assigned to the trainer DP program. The remaining 5 individuals, all of whom had received training from an earlier DP program, were assigned to participate in the trainer GSS program. To determine the knowledge and skills the 10 men had in performance training, the miniaturized performance/knowledge test for trainers was administered to them on the first class day.

Instruction by the DP program was scheduled to occur for two hours per day for four days. The total time (8 hours) was insufficient to provide instruction in each of the lessons; thus, instruction in the DP program was conducted only in those lessons that, in the opinion of the staff, were most useful to trainers. The lessons involved were:

1. Introduction to Performance-Oriented Training
2. Improving Vague Task Statements
3. Preparing Individual Task Statements
4. Preparing Performance Tests
5. Administering a Performance Test
6. Preparing a Lesson Outline
7. Conducting a Class
11. Evaluating Training Program Effectiveness.

GSS students were not told to omit any of the lessons, and they were directed to devote as much study time as they needed to complete the program. They were asked to appear on the last DP class day for an evaluation of the GSS program and to take a posttest (the miniaturized test).

Nine men completed the programs (5 DP and 4 GSS), and nine took the posttest.

PROBLEMS ENCOUNTERED

The original plans for conduct of this work had called for quantitative, formative and summative evaluations of the programs, and (3) for the collection of hard data to assess (1) their relative effectiveness, (2) the time required to administer the programs, and (3) the costs of program implementation. For a variety of reasons which will be described here, the formative and summative evaluations actually accomplished were done under an R&D program that had to be continually modified so as to not interfere with the 7th Division's mission-required activities and schedule of unit activation. Development and evaluation activities had to be accomplished using the Division personnel who were available, when they could be made available by their unit commanders. With the Division's pursuit of unit readiness being paramount, severe limitations were placed upon the R&D program, particularly summative evaluation.

Following is a description of the Division's activation requirements, and the characteristics and availability of its training managers and instructors, all of which influenced program development and evaluation to a large degree.

a. Mission of brigade. All activities within the brigade were oriented toward achieving combat readiness as quickly as possible. This meant that units were activated on a rapid schedule and that once activated, unit personnel were occupied full time in the myriad activities (personnel, organizational and training) required to achieve a posture of readiness. Anything that the concurrently running R&D program could provide to support and to assist training managers and trainers in their training duties was welcomed and utilized. However, they couldn't wait or suspend training while the R&D program developed guidance for how they should conduct training. Neither could they absent themselves from their mission-required duties for more than occasional short periods of time to participate in the R&D program. Training managers and trainers were provided on a time-available and non-interference basis to serve as subjects in the program development and evaluation, but not to the extent actually required.

b. Philosophy and knowledge of brigade and battalion commanders. These key individuals were versed in the principles of performance-oriented training (all battalion commanders had scored high on the training knowledge survey administered to all available training managers at the beginning of the developmental sequence) and they were strong in encouraging their training managers and trainers to apply their own interpretations of performance-oriented training techniques in conducting their unit readiness training. Therefore, while the project staff was developing programs for training managers and instructors, these individuals were already employing varying concepts of performance-oriented training in their conduct of training.

c. Experience of training managers and trainers. Inasmuch as efforts to implement performance-oriented training principles and techniques have been underway since 1971 in Army Training Centers, and to some degree in selected Army school courses, the brigade's newly arrived training managers and trainers covered a broad spectrum in their knowledge and acceptance of these principles. Some who came from ATC assignments were acquainted with the techniques, some who came from the Infantry School's UTRAIN course or NCO schools were well versed in the principles, some had had limited exposure to both the principles and techniques in prior assignments, for some it was all brand new, and for some not only was it entirely new, but also unsettling and easy to resist. Some of the individuals who were included in the small-n four-cell summative evaluation described above were already so knowledgeable of performance principles that they "maxed" the pretest. In no way could the available training managers and trainers be characterized as homogeneous "unexposed" or naive pools of subjects.

d. Involvement in pilot programs. The press of brigade training needs, the command emphasis on making training performance-oriented, and the relatively small numbers of training managers and trainers who could be made available over the approximately six-month development and evaluation period of the project made it infeasible to arbitrarily select some for participation during program piloting and development, and to deny such participation to the others in order to reserve them as subjects in summative evaluation some months later. It was a trade-off situation: in return for their supporting the R&D program when and where they could, we were obliged to support their training when and where we could. To have done otherwise would have jeopardized (1) the quality of the developing program (piloting on insufficient Ns), (2) the good will and spirit of cooperation required for conducting R&D in the unit context, and (3) hindered the Division from meeting its readiness requirements.

e. Constraints imposed upon summative testing of programs. As stated above, because of higher priority brigade activities, only nine training managers (four of whom had already participated in

earlier pilot versions) and 10 trainers (five of whom had already participated in earlier pilot versions) could be made available to undergo the four-cell tryout of the final programs. These 19 individuals took the specially prepared pretest prior to any instruction, representing the four cells as shown below (left). Seventeen of the 19 completed instruction and were available to take the post-test representing the four cells as shown below (right).

	DP	GSS
Manager	5	4
Trainer	5	5

Pretest Design

	DP	GSS
Manager	5	3
Tranner	5	4

Posttest Design

As explained earlier, limitations upon available time (eight hours) required that both DP programs be reduced by about half the total number of lessons, with instruction being provided in those lessons deemed most useful to the brigade managers and trainers. Because of this, and the irregular attendance of the participants, an unbiased picture of the effects of the DP program could not be obtained.

No such time limitations were placed upon the participants of the GSS programs, and they were free to spend as much time as needed. However, here too, an unbiased picture of the effects of the GSS programs was not obtainable in that all the GSS participants had previously been exposed to varying amounts of such instruction in pilot versions of the DP program.

In light of a-e above, it was decided by the research staff that the pre-posttest data were so unreliable and contaminated by other sources of variance that any quantitative analysis based upon such small Ns would be spurious. Therefore, the test responses were examined only for subjective impressions and trends which were then combined with other such subjective findings from staff observation and from interview of program participants.

Error scores were examined for all individuals who took the 23-item training manager miniaturized test, before and following training, and for all who took the 14-item trainer miniaturized test, before and following training. Scores for the DP and GSS groups were combined to see if there was a discernible overall trend from pre- to posttest. For both managers and trainers there appeared to be considerable variability in the pretest scores. Posttest scores were much less variable. Number of errors appeared to decrease for both groups. These data trends are presented in Table 2.

TABLE 2. MEAN ERROR SCORES FOR TRAINING MANAGERS AND TRAINERS ON THE MINIATURIZED TESTS, PRE- AND POST-TRAINING. SCORES FOR THE DP AND GSS GROUPS ARE COMBINED

	Pretest			Posttest		
	Mean Errors	Range	N	Mean Errors	Range	N
23-item test for managers	5.4	16 to 0	9	.5	3 to 0	8
14-item test for trainers	5.7	11 to 0	10	1.2	5 to 0	9

SUBJECTIVE EVALUATION OF PROGRAMS

Feasibility

(1) Time required: Neither the DP nor the GSS programs required inordinate amounts of time for the participants to complete. Each program had been designed for completion within 2 or 3 days. Observations indicated that these time allotments are realistic, and that individuals who wish to undergo any of the four programs could expect to spend 2-3 days in the program. Time telescoping could be expected to occur for an individual who wished to undergo, say, both the manager and trainer DP or GSS programs. It appears that he could expect to complete both programs in 4-5 days.

(2) Complexity level and relevance of content: Feedback from participants, and our own observations, indicated that the concepts and techniques presented, and the exercises that participants perform as they progress through the programs, are couched in language that is readily understood. During development of the programs, efforts were made to keep the materials simple and to avoid complex presentations and relationships. The conduct of performance-oriented training is simple and straightforward; apparently these programs reflect that fact in their own content and organization. Participants consistently reported "no difficulty" with the programs.

Discussion with participants, and observation, indicated that the job relevance of the materials was apparent to individuals undergoing the programs. The instructional content and exercises were readily related to the day-to-day tasks required of training managers

and/or trainers in the conduct of training. The participants experienced no difficulty in applying these principles and techniques to their own current training duties. There were instances in which participants took these materials (formats, lesson outlines,...) back to their units for immediate implementation. Comments from participants were to the effect that these programs are entirely feasible for use in TO&E units. They saw them as being needed and appropriate for use under a number of conditions: (a) when units are being activated, battalion and company personnel would benefit from these programs before the units begin any training; (b) when individuals are newly assigned to a unit undergoing training, they would benefit from these programs just prior to undertaking their particular training assignment; (c) at any time a refresher training program seems to be in order for unit training personnel.

(3) Costs: An important consideration guiding the staff during development of the programs was that of cost. The programs were deliberately designed to be "low cost" so that they would require no special materials, equipment or personnel beyond that found in the typical TO&E unit. The programs do not call for special media or facilities. Training managers can learn performance-oriented training principles and techniques via these programs at no cost other than the investment of a few days of their own time. They can, in turn, guide their trainers through the materials designed for them, again investing a relatively small number of days in the activity.

The programs are designed so that participants needn't absent themselves from their unit duties in order to attend a "special school." All four programs can be administered in the unit context and can be integrated with normal unit activities. Depending upon the time intervals available, each of the programs may be administered in concentrated fashion as a 2-3 day block, or they may be subdivided into small blocks and administered over a period of several weeks as time becomes available. Other unit activities needn't stop to implement these programs.

(4) Impact of programs: As stated previously, it was found early in the project (via the knowledge survey, discussions and observation) that most of the participants had some knowledge of performance-oriented training which varied from "extensive" to "little" depending upon the individual's prior assignment and training. It appears that even though knowledge of the principles and terms was not uncommon, the brigade's training managers and trainers did not know the techniques of application. The following statements exemplify comments frequently encountered in the early stages of the project: (1) "I know that practice is better than lecture, but how should it be conducted?" (2) "I agree that feedback should be given the trainee as often as possible, but who should do it?" (3) "Yes, individual attention is important, but how do you accomplish it if you have 100 trainees for only 2 hours?" (4) "What do you do with the trainee who simply doesn't have the motivation to learn?"

5-2

It was apparent after individuals had been through parts of the developing programs, or the entire final programs, that they had learned techniques and the mechanics for conducting performance-oriented training. They expressed confidence in their ability to conduct performance-oriented training; they stated that it was really much simpler than they had thought, that it was really common sense, that training needn't be as formal and ritualized as conventionally handled,... A frequently heard comment following program participation was "Now I know what you meant when you said (X)."

Apparently an important effect of these programs for the participants was to broaden and amplify their knowledge of performance training principles (and to correct their misperceptions) and to show them how to translate their ideas and concepts about performance training into the mechanics of actual training.

Observations of Unit Personnel

The training programs developed in this project have received positive endorsement from brigade personnel at a variety of levels (NCO instructors, unit commanders, and training managers) for a variety of reasons:

(1) These programs are seen to reflect the Army's recently adopted philosophy of making training performance-oriented, and to offer specific training vehicles, tailored to the needs of the TO&E unit, for implementing this philosophy. They see that "someone is finally giving thought to the problems of training the individual in the unit."

(2) The brigade's training activities since activation have been directed toward preparation of its elements for participation in the ARTEPs which are replacing the conventional ATTs. The ARTEPs are decidedly more task-performance oriented than were the ATTs. These programs are seen as steering training personnel in the right direction to prepare units for the ARTEPs.

(3) These programs have materially assisted the working level trainers in implementing the brigade commander's policy of providing brigade personnel with practical and realistic skill training that will contribute to unit functioning.

(4) These programs remove the mystery from performance-oriented training and provide simple and specific techniques for the conduct of practical field training.

It is the opinion of unit training managers and instructors that as a result of their project participation training in the brigade is now more practical and field-relevant.

SUGGESTED FOLLOW-ON ACTIVITIES

Summative Evaluation

To the extent that it is possible to still find Army training managers and/or trainers who have been unexposed to any of the concepts or techniques of performance-oriented training, it would be desirable to conduct a large-N pre-post evaluation of all four programs. Until such an evaluation is conducted we will have no unbiased assessment of the effects of the programs. However, it is highly unlikely that such people exist in any significant numbers anywhere in the Army's training establishment in view of the emphasis that performance-oriented training has received since 1971. If they are to be found anywhere, it would probably be in the Reserve Components. However, they may even be rare in Reserve and National Guard units considering the efforts that have been made to acquaint them with performance training.

Field tryout of the full-scale performance tests, which time limitations did not permit in this project, should be conducted. The tests should be subjected to further field validation trials. Revisions and finer tuning would undoubtedly result from an empirical field test.