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FIELD SURVEY OF CURRENT PRACTICES AND PROBLEMS IN ARMY UNIT TRAINING, WITH IMPLICATIONS FOR FIELDING AND TRAINING WITH THE MILES

Volume I—Report

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

A survey of CONUS active infantry and armored divisions was conducted: (1) to determine how they actually manage, prepare, and conduct unit tactical training, (2) to describe the operational environment into which training must be fitted, and (3) to find out why REALTRAIN/SCOPES has not been more widely used. A large amount of relevant information was gathered and is tabulated in the report. Among the findings was evidence that: training frequently loses out in the competition for time and resources to nontraining demands made by higher

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headquarters; decentralization of training is not working as conceived; qualified trainers, particularly NCOs, are in critically short supply, and even these are often diverted to nontraining functions having higher "real" priorities than does training; REALTRAIN/SCOPES is rarely used because they are thought to require too many assets and too much effort, given the perceived "real" priority of training. Many other findings are included. The significance of the findings for the Multiple Integrated Laser Engagement System (MILES) program is discussed.

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Individual Training and
Combat Unit Training

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FOREWORD

The U. S. Army has long recognized the need to provide high quality training for its units. Attempts to satisfy this need have led to the development of a wide variety of training devices and methods, and extensive training guidance and materials. Although training developers have responded in most cases to real unit training needs and many high quality training products have been introduced, development and introduction have been on an item-by-item basis without an overall strategy that considers needs, priorities, and resources. Too little attention has been paid to the "environmental fit" of the products. Consequently, acceptance and use of new training developments have frequently been less than was expected and less than is desirable.

MILES Tactical Engagement Simulation (TES) is a new development which has the potential for radically improving tactical training and evaluation. As no training development--no matter how promising--can produce its intended benefits if it is not used, the research described in this report was conducted to determine how factors in the training environment might support or degrade effective use of TES systems. The results have been used by TRADOC training developers in planning for fielding of MILES-TES, and in briefings for MACOM Commander on requirements for field support of MILES-TES. The results are also broadly useful to training researchers and developers concerned with conditions affecting acceptance and use of their products.

JOSEPH ZEIDNER
Technical Director

FIELD SURVEY OF CURRENT PRACTICES AND PROBLEMS IN ARMY UNIT TRAINING, WITH IMPLICATIONS FOR FIELDING AND TRAINING WITH THE MILES, VOLUME I--REPORT

BRIEF

Requirement:

The purpose of this research was to contribute generally to the development of improved methods for implementing tactical training developments, and specifically to the implementation of the Multiple Integrated Laser Engagement System (MILES) by providing a description of the "realities" of the Army's training environment as currently perceived by its training managers, trainers, and trainees.

Procedure:

A field survey was conducted at four active Army divisions (CONUS). At each installation a sample of training managers, trainers, and trainees (Total N=218) was interviewed and/or completed questionnaires covering specific topics in the following general content areas:

1. Acceptance of REALTRAIN/SCOPES training methods.
2. Expectations and concerns about the MILES.
3. Current state of training and conditions in operational units.
4. Practices and problems in unit training management.
5. Practices and problems in the planning, support, and conduct of unit training.
6. Desired changes to Army training.

Information obtained from interviews and questionnaires was coded and arranged into tables and summaries to form a "data base." Discussions of the data were then written to cover each of the six target content areas. These discussions provide a narrative description of the training environment as currently perceived by participants in Army unit training. The narrative description, which is referred to as the "knowledge base," was then examined for answers to questions about how to facilitate fielding and training with the MILES.

Findings:

The major findings in each of the six target content areas can be summarized as follows:

1. Although the REALTRAIN/SCOPES training methods have been accepted with what might be called "guarded enthusiasm," their use is at best sporadic.

2. Trainers and training managers expect that the MILES will help units to do better training, but they are concerned about reliability and accountability for the MILES hardware.

3. Although the community of training managers, trainers, and trainees claims to be more satisfied than not with current Army training, they also claim that training does not receive the emphasis it needs to make it the central and primary task of the military unit, that there are "terrible" shortages of personnel, that too little time is spent on training, that availabilities of field training areas constrain some types of training, that the abilities of the current population of trainers and trainees are unimpressive, and that turbulence is having serious adverse effects on morale and career intentions of personnel in the Army.

4. Training managers at brigade and battalion levels indicated that they have substantial amounts of freedom to decide the training that their units need and then see that it is carried out, but they also said that effective programming is hampered by the "top-down" imposition of excessive and/or poorly timed training and non-training requirements.

5. Line trainers feel that current practices in planning, supporting, and conducting training provide too few resources for training. They indicated that shortages of personnel and distractive demands on training time are basic reasons why unit proficiency is no better than it is.

6. The vast majority of trainers and training managers indicated that there is need for substantial change in the way training is planned, supported, and conducted. "Stabilizing the training calendar" and "ruling out distractors" were cited most often as changes which trainers would like to see.

Conclusions:

Implications for fielding and training with the MILES were drawn from the survey results as follows:

1. Trainers and training managers in both armor and infantry units expect that the MILES can mitigate current problems with soldier motivation and learning, but there are differences in armor and infantry requirements for use of the MILES.

2. There are several areas in which the development of specially focused delivery techniques and/or user guidance materials can facilitate utilization of the MILES: attention needs to be focused on means for overcoming apparent resistance to the MILES as a "usable" training system; small unit trainers may need "refresher" training in how to train as well as requiring specialized training in use of the MILES; and steps should be taken to ensure that the schools institute and maintain MILES instruction in their curricula.

3. There are two general ways in which current practices in the management, support, and execution of unit training appear to be incompatible

with use of the MILES: current practices for programming activities and assigning task priorities do not provide the time and personnel which will be required for utilization of the MILES; and current practices do not provide incentives for expending the extra effort which is required to implement new training systems such as the MILES.

Utilization:

Information contained in various sections of this report has served as input to the planning of the MILES USAREUR Test and to planning of the Army-wide MILES implementation effort. It has served as a primary data source in the conceptual development of a general model for implementing tactical training developments in the Army, and it has been used to anticipate problems and formulate objectives for an operational evaluation of the MILES implementation. These applications of the results of the current research, however, are only some of the potential uses. The "data base" and the "knowledge base" contained in this report can serve as ready resources for diagnosing needs for future training development or implementation efforts to improve Army unit training. They can, for example, be consulted for information to contribute to the development of refined ARTEPs, to review the success of current policies, or to determine user requirements for program changes. The results of this research can also be consulted to establish baseline conditions against which to evaluate the impact or success of tactical training developments or other modifications to the Army training environment occurring now, or in the future.

FIELD SURVEY OF CURRENT PRACTICES AND PROBLEMS IN ARMY UNIT TRAINING, WITH IMPLICATIONS FOR FIELDING AND TRAINING WITH THE MILES, VOLUME I--REPORT

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FIELD SURVEY OF CURRENT PRACTICES AND PROBLEMS IN ARMY UNIT TRAINING, WITH IMPLICATIONS FOR FIELDING AND TRAINING WITH THE MILES
VOLUME I--REPORT

INTRODUCTION

The purpose of this research was to describe the "realities" of unit training as currently perceived by training managers, trainers, and trainees in the U.S. Army. This description is a necessary first step in the design of improved implementation methodologies to help project managers and field users anticipate and cope with problems encountered when new tactical training developments, such as the Multiple Integrated Laser Engagement System (MILES), are introduced to operational units.

In recent years, the Army has sought to improve the effectiveness of tactical training through the introduction of the Army Training and Evaluation Program (ARTEP) and through the development of Tactical Engagement Simulation (TES) including SCOPES, REALTRAIN, and the MILES (TRADOC, 1976).[1] The ARTEP stresses that unit proficiency should be judged on the basis of performance of appropriate missions carried out with as much realism as possible. TES has been developed to meet the ARTEP objectives by providing the capability for realistic two-sided free-play field exercises in which casualty assessment accurately reflects the performance of soldiers, units, and weapon systems (see USAARMS TC 71-5, 1975).[2]

It was intended that engagement simulation should become the Army's "fundamental training method" (TRADOC, 1976).[3] The superiority of TES over conventional field training methods has been repeatedly demonstrated in validation tests (e.g., Scott et al, 1979).[4] But in spite of their excellent training potential, TES methods have encountered major problems in transfer to user units (see Scott, 1980).[5] Neither REALTRAIN nor SCOPES, which are the currently available TES methods, have been actively used to train Army

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[1] TRADOC's engagement simulation research and development program. Fort Benning, Georgia: 77807 Army, March 1976.

[2] USAARMS, TC 71-5 REALTRAIN (Tactical training for combined arms elements). January, 1975.

[3] TRADOC, 1976, op cit.

[4] Scott, T.D., Meliza, L.L., Hardy, G.D., Banks, J.H., and Word, L.E., REALTRAIN Validation for Armor/Anti-Armor Teams. USARI Research Report 1207, March, 1979.

[5] Scott, Thomas, D. Tactical training for ground combat forces, Armed Forces and Society. 1980, 6, 215-231.

units (Seigle, 1977; Collins, 1978).[6,7] Unless some new approach is taken to ensure its implementation, the MILES, which has been described as "one of the most promising training developments in the history of warfare" (Loftis, 1980),[8] may fare no better when deployed to operational units.

The present research was undertaken as a first step in the development of an improved methodology for implementing and ensuring utilization of the MILES (or any future tactical training developments). It provides a current account of TES in the operational unit and a description of the conditions, management, and conduct of training in operational units as perceived by active participants in Army unit training. The information thus provided is used to identify potential problems and possible solutions relevant to fielding and training with the MILES.

PROCEDURES

A field survey was conducted at four active Army divisions (CONUS). At each installation a sample of training managers, trainers, and trainees (Total N=218) was interviewed and/or completed questionnaires covering specific topics in the following general content areas:

1. Acceptance of REALTRAIN/SCOPES training methods.
2. Expectations and concerns about the MILES.
3. Current state of training and conditions in operational units.
4. Practices and problems in unit training management.
5. Practices and problems in the planning, support, and conduct of unit training.
6. Desired changes in Army training.

Training managers (division G3, brigade and battalion commanders and S3's), trainers (company commanders, platoon leaders, NCOs), and trainees (squad/crew members) participating in the survey represented each echelon from division headquarters through squad/crew levels in armor and infantry units. Individual survey respondents were selected so that those at lower echelons were members of units subordinate to those selected at the next higher echelon. Continuous audit trails were thus established within units from senior commander/staff to junior enlisted personnel.

Information obtained from interviews and questionnaires was coded and arranged into tables and summaries to form a "data base." Discussions of the data were then written to cover each of the six target content areas. These discussions provide a narrative description of the training environment as currently perceived by participants in Army unit training. The narrative description, which is referred to as the "knowledge base," was then examined for answers to questions about how to facilitate fielding and training with the MILES.

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[6] MG Seigle, J.W. (DCST, HQ TRADOC), The Army training system: A status report. AUSA Convention, October 1977.

[7] LTG Collins, A.S., Jr., Common sense training: A working philosophy for leaders. San Rafael, California; Presidio Press, 1978.

[8] MAJ Loftis, D. D., MILES, Infantry, January-February 1980, 42-44.

It will be noticed that there is considerable overlap in the six content areas selected for study. The intention was to develop a rich description of the unit training environment as perceived by participants in Army unit training. The specific topics were selected, therefore, to provide respondents with different sets of conditions for the task of talking about their practices and problems with unit training. The narrative description for each of the different topic areas was then constructed by "orchestrating" the literal responses that survey respondents made to the questions asked in that area. Although the data obtained with any given survey question was used no more than once in developing the narrative, there is considerable redundancy and occasional apparent inconsistency in the assembled description of the unit training environment. To some extent these redundancies occur because, regardless of the specific topic area, respondents returned again and again to an apparently common set of problems and practices for coping. To some extent the inconsistencies may be attributed to self-protective or wishful thinking on a particular problem under one set of conditions and more realistic and candid responding under another set of conditions. The reader is invited to consider these explanations when redundancy and inconsistency is encountered. To some extent, however, the narrative reads as it does because of the complexity of the unit training environment. It is a very rich and very difficult thing to describe.

RESULTS

The major findings in each of the six target content areas can be summarized as follows:

1. Although the REALTRAIN/SCOPES training methods have been accepted with what might be called "guarded enthusiasm," their use is at best sporadic.

- The majority of trainers and training managers said that REALTRAIN and SCOPES are good techniques for improving individual combat skills, making soldeirs want to train, and improving unit tactical performance. Trainees said that they thought training with REALTRAIN/SCOPES was better than training with conventional field training methods.

- However, many people expressed reservations about the utility and practicality of REALTRAIN/SCOPES as substitutes for other forms of field exercises. They were especially concerned about the additional time and effort required to stage a REALTRAIN/SCOPES exercise.

- Sixty-two percent of the brigade S3s who were interviewed reported that REALTRAIN/SCOPES methods are not used in their organizations, and forty percent of the trainees said that they had never participated in a REALTRAIN or SCOPES exercise. Indeed, sixty percent of the company training NCOs surveyed claimed that they were not even familiar with the REALTRAIN/SCOPES training methods.

2. Trainers and training managers expect that the MILES will help units to do better training, but they are concerned about reliability and accountability for the MILES hardware.

- The survey respondents perceive that the chief training advantages for the MILES are that it will enhance realism and that it will provide immediate feedback to the user.

- They are skeptical, however, about the durability, reliability, and sophistication of the MILES hardware and are concerned about the special maintenance, storage, and accountability requirements that may be imposed.

3. Although the community of training managers, trainers, and trainees claims to be more satisfied than not with current Army training, they also claim that training does not receive the emphasis it needs to make it the central and primary task of the military unit, that there are "terrible" shortages of personnel, that too little time is spent on training, that availabilities of field training areas constrain some types of training, that the abilities of the current population of trainers and trainees are unimpressive, and that turbulence is having serious adverse effects on morale and career intentions of personnel in the Army.

- Operational readiness training, unit training, individual training, and training in the subject areas of tactics, weapons, support, maintenance, and communications were described as being at least adequate. However, training was seldom described as "excellent" in any area.

- Trainers and training managers report that small unit training should be a task of first-order importance, but feel that their superiors do not share this interest. Ninety-two percent of the trainers and training managers indicated that small unit training deserves greater than average importance, but only fifty-five percent of them reported that their superiors provide this emphasis for small unit training.

- The big resource problems cited at the four CONUS installations surveyed were "time to train" and "the NCO structure." Respondents said that there is too little time to accomplish all that is on the Master Training Calendars and that manning levels for key NCO grades do not agree with TOE strength. Availability of field training areas is also a problem at the installations surveyed.

- Training managers indicated that they are not impressed with the ability of today's young soldier to learn and remember either individual or collective skills, and they reported that today's NCOs are inferior to those of seven or eight years ago. They feel, however, that today's junior officers are at least as good and sometimes better than those of seven or eight years ago.

- Turbulence in the current training environment, the problem of conflicting priorities at different levels of command, and uncertainty due to frequent changes in goals and missions were reported to have serious adverse effects on morale and career intentions of today's military participants.

- Bright spots in reports concerning the operational context of training appeared as follows: nearly all of the survey respondents applauded the quality of current Army training guidance publications (e.g., FMs, TCs), and G3s and brigade S3s who were interviewed reported that there is no conflict between training dollars and training requirements.

4. Training managers at brigade and battalion levels indicated that they have substantial amounts of freedom to decide the training that their units need and then see that it is carried out, but they also said that effective programming is hampered by the "top-down" imposition of excessive and/or poorly timed training and non-training requirements.

- Fifty-six percent of the brigade and battalion commanders indicated that they have total freedom to determine the program for training while sixty-nine percent of the company commanders and platoon leaders reported that they have very little such freedom.

- Master Training Calendars showed that each of the installations surveyed is now or has been using some version of the cycle management concept. The frequencies and durations of the cycles were, however, quite variable both within and between divisions (e.g., prime-time periods ranged from 1 to 20 weeks in duration), giving the impression that the planning calendars are built around critical events rather than pacing training with a rotation of prime-time, local training, and post support periods.

- Training managers reported that there is no specific means or procedure for establishing priorities between training and non-training missions and that training activities often lose out in the competition for time and resources.

- They blamed personnel turbulence/shortages, mission turbulence, and diversions from training for problems in training management. They seemed to feel that personnel turbulence/shortages are conditions endemic in current social and economic circumstances, but indicated that mission turbulence and diversions from training are conditions generated by a "top heavy" bureaucracy.

5. Line trainers feel that current practices and problems in the way training is planned, supported, and conducted provide too few resources for training. They indicated that shortages of personnel and distractive demands on training time are basic reasons why unit proficiency is no better than it is.

- The majority of brigade S3s, battalion S3s, battalion operations NCOs, and company commanders estimated that a company spends no more than fifty percent of its prime time conducting collective training, including ARTEPs.

- ARTEP is widely used and appears to be quite well accepted, but there is some indication that ARTEP is used as a "test" rather than a complete training program.

- Survey respondents at all echelons reported that individual and collective training are not well integrated at present.

- Although trainers and training managers were not enthusiastic about the role of SQT in the overall training program, virtually all of the surveyed trainees reported that what they learn preparing for their SQT helps them with their duties as squad/crew members.

- Although the majority of trainers and training managers indicated that they make use of ARTEP evaluation results and qualification test results in order to determine the state of their subordinate units' training, they appear to depend more heavily on personal observation as a means for determining the state of training.

- G3s, brigade commanders, and brigade S3s reported that limited amounts or awkward locations of field training areas makes it difficult to train with large maneuver units and hinders the firing of longer ranged weapons and the scheduling of combined arms exercises.

- More than seventy percent of line trainers mentioned personnel shortages, shortage of time for small unit training, shortage of available training areas, equipment shortages, or some combination thereof as specific instances of resource shortages which cause difficulties in their job as trainers.

6. The vast majority of trainers and training managers indicated that there is need for substantial change in the way training is planned, supported, and conducted. "Stabilizing the training calendar" and "ruling out distractors" were cited most often as changes which trainers would like to see.

- Trainers and training managers claim that they are unable to plan or execute vital training because the schedules generated higher up the chain of command are unstable and/or because of distractions caused by personnel turbulence and post support requirements.

- One possible solution which survey respondents foresee for their current problems with distractors and lack of time is the National Training Center (NTC). Most of the respondents, battalion commanders in particular, were very enthusiastic about the NTC, though some expressed concern that the costs may be prohibitive or that NTC will absorb money that might otherwise have been spent creating opportunities to train on post.

CONCLUSIONS

Implications for fielding and training with the MILES were drawn from the survey results as follows:

1. Trainers and training managers in both armor and infantry units expect that the MILES can mitigate current problems with soldier motivation and learning, but there are differences in armor and infantry requirements for use of the MILES.

- Personnel in armor units reported that they spend relatively more time engaged in tactical collective training than did those in infantry units. They are, however, more dissatisfied with the current state of training than are personnel in infantry units. These results may suggest that armor units stand in special need of improved methods for training.

- Personnel in armor units were not, however, as enthusiastic about TES as were their counterparts in infantry units. Many of the respondents in armor units reported that they either did not use or did not like REALTRAIN.

- Armor respondents expressed particular hope, however, that the MILES will meet their needs for improved combat gunnery training.

2. There are several areas in which the development of specially focused delivery techniques and/or user guidance materials can facilitate utilization of the MILES.

- Attention needs to be focused on means for overcoming the resistance apparent in current attitudes regarding the usability of TES. The survey respondents acknowledged and endorsed training benefits promised in the MILES, but they are concerned about the extra taskings which they expect will be associated with the sophisticated MILES hardware. Utilization of the MILES may rest, therefore, on helping users to cope with its management and maintenance requirements rather than on promoting its training advantages.

- Since approximately half of the small unit trainers participating in the survey expressed a need for more guidance or instruction in their current job as trainers, it seems likely that doctrinal and new equipment instruction for the MILES will be most beneficial if the instruction also includes refresher training in how to train.

- Since potential users of the MILES are justifiably concerned that they do not have access to facilities or experienced personnel to use, maintain, and account for sophisticated training devices, it would appear that field implementation support (e.g., adequate training ammunition, surveys to determine whether TES techniques are being employed correctly in the field, and trainer preparation) is essential to utilization of the MILES.

- Although those individuals who had learned about REALTRAIN/SCOPES at service schools rated the instruction they had received as "good" or "very good," the fact is that fewer than thirty percent of the officers and NCOs surveyed reported that they learned to plan and prepare REALTRAIN/SCOPES exercises at the service schools. Indeed, 3 of the 5 training NCOs who were surveyed were not even familiar with the REALTRAIN/SCOPES methods. If the schools are to serve as a constant source of prepared MILES trainers and controllers, then it will be necessary to take steps to ensure that MILES is more visible in the schools' curricula than has been the case for REALTRAIN/SCOPES.

3. There are two general ways in which current practices in the management, support, and execution of unit training appear to be incompatable with use of the MILES: current practices for programming activities and assigning task priorities do not provide the time and personnel which will be required for utilization of the MILES; and current practices do not provide incentives for expending the extra effort which is required to implement new training systems.

- The results of the survey suggest that when unscheduled mandatory events, maintenance, and support activities are added to the mandatory training requirements scheduled at organizational levels above battalion, there is virtually no time or personnel left for utilizing the MILES. It can be hoped, however, that implementation of the Battalion Training Management System will help resolve these problems by the time the MILES goes to the field.

- The fact that TES is known to provide results that are far superior to those obtained with conventional tactical training methods ought to be a built-in incentive for use of the MILES. But until training becomes the "true top priority" for Army units, this built-in incentive may have little effect. An interim alternative would be to make use of the MILES a mandatory training requirement.

PROCEDURES

The research was accomplished in four stages. In the first stage, specific topics for study were selected to provide broad coverage of current practices and problems in Army unit training. In the second stage, field survey procedures were developed and applied to obtain relevant information about each of the selected topics from persons considered to have expert knowledge of the particular subject matter. In the third stage, the survey information was coded, analyzed, and discussed to produce both a "data base," which is organized for ready retrieval of specific pieces of information, and a "knowledge base" that integrates the information into a narrative description of the training environment. In the final stage, the "knowledge base" was consulted for answers to questions about opportunities, problems, and potential solutions applicable to fielding and training with the MILES.

Selection of Topics for Study

Specific topics to be included in the survey were developed from a review of the training literature (e.g., FMs, TCs, AR 350-1) and from discussions with experienced Army trainers and training researchers. The survey was intended to provide a current account of TES in the operational unit and an adequate description of the unit training environment as perceived by participants in Army training. Specific topics were selected, therefore, to cover six general areas of concern: (1) acceptance of REALTRAIN/SCOPES training methods; (2) expectations and concerns about the introduction of the MILES; (3) conditions in the operational context of training; (4) current practices and problems in training management; (5) current practices and problems in conducting and evaluating training; and (6) desired changes to Army training. There is, of course, a great deal of overlap among these areas of concern. The specific topics selected for study do not, therefore, constitute the unique parts of some unitary whole. Instead, the topics were selected to provide six different slants or perspectives on current practices and problems in Army unit training. A list of the topics included in the survey is provided as a Table of Contents for Appendix C.

Survey Respondents, Instruments, and Data Collection

The survey procedures reported here were developed from those of a pilot study conducted at a single CONUS installation in the fall of 1978 (Roberts-Gray et al, 1979).[9]

Selection of Survey Respondents. In keeping with the desire to provide multiple perspectives on practices and problems in Army unit training, survey respondents were selected to represent the heterogeneity of functions and characteristics of units and individuals involved in Army training as follows:

Organizations as respondents. Four active Army divisions stationed in the continental U.S. were selected for survey. One was an infantry division, two were mechanized infantry divisions, and one was an armored division. Each division was based at a different post, and the posts were geographically dispersed. The divisions are identified in this report as Divisions A, B, C, and D.

Units were selected at each division to represent the following echelons: division staff, brigade headquarters, battalion headquarters, company headquarters, platoon headquarters, and squad/crews. The sample of organizations selected for survey was further stratified by selecting units so that one infantry-heavy and one armor-heavy brigade, one infantry battalion and one tank battalion, one rifle company and one tank company, one rifle platoon and one tank platoon, and two rifle squads and four tank crews were surveyed at each division.

Audit trails were established from individual soldier to brigade headquarters and division staff by drawing squads and crews from platoons that were also surveyed; drawing platoons from companies that were surveyed; drawing companies from surveyed battalions and drawing battalions from surveyed brigades.

The sample of organizations actually surveyed followed this plan closely with the following exceptions: (1) At two of the divisions the tank and infantry battalions that participated in the survey were attached to the same brigade. In order to maintain the planned representation for all duty positions, the commander and S3 of an alternate brigade were included in the sample at these divisions, and (2) Although the sampling

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[9] Roberts-Gray, C., Gray, T., Clovis, E.R., Cunningham, R.F., and Muller, T.M. Field survey of current practices and problems in Army unit training, I: Pilot survey. Perceptronics Report, prepared for Tactical-Team Performance Team, USARI, Presidio of Monterey Field Unit, June, 1979.

plan called for surveying two complete rifle squads from the surveyed rifle platoon and four complete tank crews from the surveyed tank platoon, conditions of undermanning and not-present-for-duty at the surveyed divisions required some deviation from the plan. The sample of squads and crews actually surveyed were drawn from surveyed platoons to the extent they were available; but in some cases it was necessary to add squad and/or crew members from other platoons in the same company to fill out the sample.

Individual Respondents. Selection of individual respondents for survey was guided by the requirement that training managers, trainers, and trainees all be represented. The survey sample included the following as training managers (and performers of training management functions): Division G-3s; brigade commanders and S-3s; battalion commanders, S-3s and operations NCOs; company commanders. The following were considered to be trainers: platoon leaders, platoon sergeants, company training NCOs (if any), squad leaders, and tank commanders. Considered as trainees were squad leaders (also considered trainers), tank commanders* (also considered trainers), other squad members, and other tank crew members. Figure 1 describes the sampling plan and identifies the individuals selected for survey. Limited biographical information for each of the persons participating as survey respondents is shown in Appendix A.

Survey Instruments. Three questionnaires were designed to address training managers, trainers, and trainees, respectively; and nine interview guides were tailored for particular duty postions. G3s, brigade commanders, and battalion commanders were interviewed but received no questionnaires; brigade S3s, battalion S3s, company commanders, platoon leaders, platoon sergeants, squad leaders, and tank crew commanders were interviewed and completed appropriate questionnaires; and battalion operations NCOs, company training NCOs, and squad and tank crew members (other than squad leaders and tank commanders) completed questionnaires but were not interviewed. In addition to the information collected from questionnaires and interviews, copies of division training regulations and master training calendars were obtained.

Questions for the interviews and questionnaires were developed in three steps. The steps correspond to answering the three questions: "What specific information is required?" "Who would have this information?" and "How can a question be asked to obtain this information?"

The first step consisted of formulating questions to cover the selected survey topics, but without attempting to make these questions themselves suitable for inclusion as items in questionnaires or interview. For

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* Other than platoon leaders and platoon sergeants.

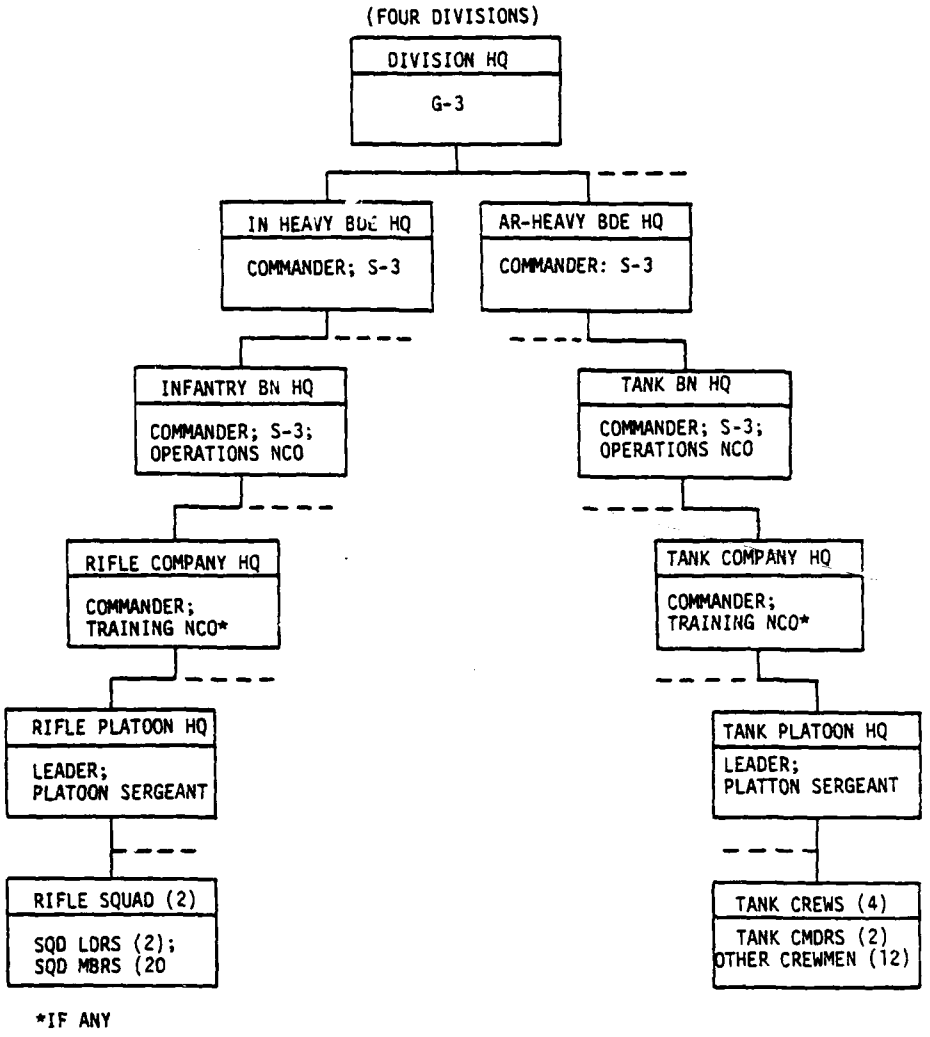

Figure 1. Schematic of sampling plan applied at four survey sites.

convenience, these questions are referred to as "essential elements of information" (EEI).

In the second step, a matrix was constructed specifying the EEI along one dimension and the candidate respondents (i.e., duty postions in the sampling plan) along the other. Provision was also made in the matrix for indicating documentary sources of information. Each cell of the matrix was then considered with the following questions in mind: Is this respondent likely to have information pertinent to this EEI? If so, should he be asked to supply the information? There were several considerations in answering these questions. First, some EEI required information from only the "most expert" source, while other EEI required that information be obtained from different echelons in order to construct audit trails. Second, there was an awareness that it is much easier to exhaust a person's patience than their knowledge. In practical terms, this meant that the size of questionnaires and the length of interviews would have to be limited and, consequently, that the decision to ask any respondent for information about a particular EEI would have to be weighed against the importance of obtaining that information from that respondent.

When a decision was made to seek information pertaining to an EEI from a particular respondent, specific questionnaire and/or interview items were written to solicit the information. In this third step, care was taken with phrasing and, in the case of questionnaire items, with format. Most of the items appearing on the questionnaires were written so that response could be made by checking one or more response alternatives. A few questions required the respondent to write in a figure representing a percentage estimate. None of the questionnaire items required written verbal response, although respondents were invited to make additional comments. The interview questions were written to elicit as much relevant information as possible. The format for the interviews was semi-structured with the interviewer required to ask all questions planned for the particular interview but free to vary the sequence or add explanatory remarks in order to encourage open response.

Complete copies of the three questionnaires and the interview questions are included in Appendix B.

Data Collection. A three-member survey team visited the four survey sites in four successive weeks in April 1979 to conduct interviews, administer questionnaires, and collect training documents. Interviews were conducted by two senior military analysts with extensive personal military experience. The interviews took from 10 to 45 minutes to complete. With the permission of the interviewees, all interviews were tape recorded. Individuals who were interviewed were identified on the tapes by duty position but were otherwise anonymous.

The third member of the survey team, a senior research psychologist, administered the questionnaires. Questionnaires for training managers and for trainers (Q1 and Q2) were hand delivered and later collected at the office of the target respondent. Questionnaires for trainees (Q3) were administered to the assembled platoon, usually in a classroom. Questionnaire respondents were identified by duty position, but were not required to identify themselves by name. Time to complete the questionnaires ranged from 10 to 30 minutes.

Because of other obligations, five of the target respondents for Q1 were not available to complete the questionnaire while the survey team was on site. In each of these cases a blank questionnaire was left with the request that it be completed and returned by mail. Only one person failed to complete and return the questionnaire. All other interviews and questionnaires were completed during the site visits.

Data Reduction and Analysis

Coding of responses for questionnaire items was a fairly straightforward process. For the many questionnaire items that were written to require categorical or nominal responses, nominal scales were applied. Some of the items, however, allowed quantitative description, and for these, ordinal and sometimes interval scales were applied. In coding, the scales were arbitrarily arranged so that the small scale value always represented lesser quantities of the variable represented (e.g., response alternatives "very little," "little," "much," and "very much" were assigned scale values 1, 2, 3 and 4, respectively). Non-response was coded with the symbol "n." Frequency of each response alternative for each questionnaire item was then recorded and used to construct a frequency distribution to summarize response to the item.

The process of reducing and coding interview data was slightly more complex. The interview guides were used to facilitate transfer of information from the audio tapes to paper. The two interviewers used these guides to produce written protocols of the interviews they had conducted. The written responses for all persons answering a given interview question were then grouped together and treated like open-ended survey questions. In open-ended questions the determination of the response alternatives is necessarily left to the respondents, and their answers must be post-coded. The usual way to code such answers is to read all respondents' answers to a particular question and, each time a new answer is encountered, to record it along with the frequency of other answers encountered (Bailey, 1978).[10]

[10] Bailey, Kenneth D. Methods of social research. New York: The Free Press, 1978.

After all answer categories and their frequencies of occurrence are known, nominal or ordinal scales can be applied to code the responses. In the present case, the answers to each of the interview questions were read by a military systems analyst who recorded the answer categories and their frequencies. He occasionally encountered questions for which more than five answer categories were found. In order to keep the number of response alternatives for interview questions comparable to that for the questionnaire items, the answers occuring most frequently were assigned individual codes (i.e., unique scale values or annotations) and the less frequent answers were combined under a single code captioned "other." Non-response was assigned the code "n." As had been done for questionnaire items, frequency of response in each answer category for each interview question was tallied and used to construct a frequency distribution to summarize response to each of the interview questions.

Information on the master training calendars collected at the four survey sites was coded to reflect the types, frequencies, and durations of training cycles and major calendar events. Division training regulations and other documentation obtained by the survey team were not reduced or summarized but were consulted for answers to specific questions (EEI) and for "back up" information.

Results of data reduction for each survey question were displayed in a table arranged by respondent within echelon, type of unit, and division. Statistical summaries (i.e., central tendencies for the rows and columns and overall frequency distributions) were prepared and included in the data table for each question. The tables were then grouped so that all questions relevant to each of the selected survey topics appeared together within the appropriate content area. Short summary statements about each of the elements of information obtained were written to describe the data displayed in the tables. These summary statements provide the simple and direct answers to questions listed as EEI for the survey. The summary statements and data tables, including interview protocols and statistical summaries, are shown in Appendix C. The tables and their summary statements constitute the "data base" provided by the survey.

The data base was then used to develop a narrative "knowledge base" describing current practices and problems in Army unit training as perceived by its participants. The nature of the information sought in the survey was predicated upon a systems concept of unit training. Training was viewed as composed of many interacting parts, the functions of which would, in all probability, affect the functioning of others and of the whole. The raw data brought back by the survey team and catalogued in the data base do not, of course, reflect in any orderly way these complex interrelations that exist within the training system. The objective in constructing a knowledge base, was, therefore, to organize and integrate the survey data

to show how the isolated facts bear on one another and on the system as a whole. The framework for this subjective analysis of the survey data was developed from a review of various white papers and essays by senior people intimately concerned with Army training. Essentially, the review provided a new set of research questions which were used to integrate the survey data to produce a coherent and readable description of Army unit training.

Deriving Implications for the MILES

The knowledge base can be interrogated for many different purposes. The interrogation performed in the final stage of the present research had as its purpose the determination of possible problems and requirements for development of hand-off techniques and field implementation support for the MILES. The particular concerns in this examination of the knowledge base were as follows: (1) to provide information on unique requirements for use of tactical engagement simulation systems in armor and infantry units at various echelons; (2) to provide information to assist in the development of delivery techniques and user guidance materials for new training systems; and (3) to provide information on desirable modifications to current practices in training management, support, and execution to improve the use of tactical engagement simulation techniques.

RESULTS

This section of this report constitutes the narrative "knowledge base" developed from the survey information. The results of the survey are discussed here in two major parts, the first covering the use of tactical engagement simulation in operational units and the second describing the unit training environment. The discussions are based upon and make use of all the information displayed and described in the data tables and summaries appearing in Appendix C.

It should be pointed out that, though the data obtained with any given survey question was used no more than once in the construction of the knowledge base, there is considerable redundancy in the narrative. This redundancy occurs not only because the survey questions were developed to provide several different perspectives on the same subjects, but also because the survey respondents returned again and again to an apparently common set of problems and practices for coping with those problems.

Acceptance of REALTRAIN/SCOPES Training Methods

Current Uses of REALTRAIN/SCOPES. The use of REALTRAIN/SCOPES training methods is at best sporadic. The majority of the brigade S3s who were interviewed reported that REALTRAIN/SCOPES is not used by their subordinate units (I-59).[11] Training managers in armor units at Division D supplied a unanimous "never" in response to items inquiring about the frequency of REALTRAIN/SCOPES utilization (Q1-19).[12] The majority, however, reported that these training methods are used "occasionally" at squad/crew and platoon levels. Slightly more than half of the squad/crew members responding to Q3 reported that they had participated in REALTRAIN or SCOPES exercises one or more times, though only a small percentage (10%) of them reported that they had participated more than a few times (Q3-11). These results make it clear that the use of REALTRAIN/SCOPES is optional with the units; questionnaire respondents confirmed that there are very few units for which REALTRAIN/SCOPES is required by directive (Q1-20).

The utilization of REALTRAIN/SCOPES methods has been slowed in part by the additional time and effort required to stage the exercise. There was general agreement among questionnaire respondents that, compared with other field training methods, REALTRAIN/SCOPES exercises are more difficult to plan and prepare as well as being more difficult to conduct (Q1-23; Q2-16; Q1-21; Q2-14). The major difficulty encountered in planning and preparing a REALTRAIN or SCOPES exercise is the problem of training

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[11] The symbol "I" is used to refer to interviews conducted with the following individuals: Division G3s (or deputy G3s), Brigade Commanders, Brigade S3s, Battalion Commanders, Battalion S3s, Company Commanders, Platoon Leaders, Platoon Sergeants, Squad Leaders, and Tank Commanders. Specific interview question numbers are identified by adding the item number as shown in the following examples: I-06a, I-47. (Interview items are reproduced in Appendix B.)

[12] The symbols "Q1," "Q2," and "Q3" are used to refer to the three survey questionnaires administered as follows: Q1 was completed by Brigade S3s, Battalion S3s, Battalion Operations NCOs and Company Commanders; Q2 was completed by Company Training NCOs, Platoon Leaders and Platoon Sergeants; Q3 was completed by squad members in infantry units and by tank crew members in armor units. Specific survey question numbers are referenced by identifying the survey instrument and then giving the item number as shown in the following examples: Q3-17, Q1-8a. (Questionnaires are reproduced in Appendix B.)

personnel to act as controllers. Training the radio control net personnel, and training people to be After Action Review leaders were also indicated as sources of difficulty in planning and preparing for the exercises (Q1-24, Q2-17). Other potential problems, such as deciding how much freedom of tactical action to allow, writing appropriate scenarios and support documents, and choosing appropriate missions were occasionally cited as sources of special difficulty in planning and preparing for REALTRAIN/SCOPES exercises. These results may suggest that REALTRAIN/SCOPES training methods would be used more often if they did not require so much preparation and support.

User Evaluation of REALTRAIN/SCOPES. The REALTRAIN/SCOPES training methods are accepted by the survey respondents with what might be called "guarded enthusiam." The majority of trainers and training managers said that REALTRAIN/SCOPES was a good technique for improving individual combat skills, making soldiers want to train, and improving unit tactical performance (Q1-18; Q2-13). With slightly less agreement, respondents also reported that REALTRAIN/SCOPES was effective for finding out what training a unit needs most. Individuals in armor units tended to give better ratings to REALTRAIN/SCOPES for teaching individual skills and for diagnosing unit needs than did individuals in infantry units.

A few of the trainers and training managers were noncommital with regard to the value of REALTRAIN/SCOPES, saying simply "I haven't used it." The majority, however, felt that these training methods are good or superior (I-06a). They reported that REALTRAIN and SCOPES provide meaningful and prompt feedback to the participants.

Trainees were optimistic about the teaching potential of REALTRAIN/SCOPES. Nearly all of those who had participated in REALTRAIN/SCOPES exercises reported that they liked it (Q3-12) and that it helped them to learn necessary combat skills (Q3-16a). They thought that the After-Action Review helped soldiers "some" or "a lot" in learning what they did right and what they did wrong (Q3-15b). They reported that training with REALTRAIN/SCOPES was better than training with conventional field training methods (Q3-16a) and that it was effective for making soldiers want to train, finding out what training a unit needs most, improving unit tactical performance, and improving individual combat skills (Q3-13).

In spite of the overall favorable response, however, many people expressed reservations about the utility and practicality of REALTRAIN/SCOPES as substitutes for other forms of field exercises. A few respondents were altogether opposed to the use of REALTRAIN or SCOPES.

There was concern that, in spite of its innovative improvements, REALTRAIN/SCOPES still provides casualty assessment that is based on a system of detect and report and detracts from gunnery training (I-06a). The

enlisted men responding to Q3 might agree with this observation since most of them reported that they sometimes or even frequently disagreed with controllers about hits and kills (Q3-14). Interview respondents also pointed out that REALTRAIN/SCOPES gets progressively harder to handle as the size of the user unit increases. The high costs, particularly the control requirements, of REALTRAIN/SCOPES were often remarked upon. "It's not worth the resources to conduct," said one bridage S3.

A few of the interview respondents also questioned the validity of the training provided in REALTRAIN/SCOPES exercises. A bridage commander said that the method could be good "provided that it accounts for all dimensions of the battlefield...[otherwise it] teaches bad habits." A battalion commander remarked that, "Once the team gets trained, then I can get on to this fancy, nice-to-do stuff." A platoon sergeant expressed his frank disapproval by saying, "I don't like SCOPES. It takes more realism away than it puts in." Though still "guarded" in their enthusiasm, a number of the interview respondents expressed the hope that MILES will be more realistic and require fewer assets than REALTRAIN/SCOPES, thereby answering some of their complaints against the methods.

Impact of User Knowledge and Resource Availability. Not all of the survey respondents were acquainted with REALTRAIN/SCOPES training methods. Most of the trainers and training managers indicated that they were familiar with or had been personally involved in planning and preparation for REALTRAIN or SCOPES exercises (Q1-22; Q2-12 and 15). But 60% of the company training NCOs reported that they were not familiar with the methods and none of them reported having been personally involved in planning and preparation for REALTRAIN/SCOPES exercises. They also reported that they had never learned to plan and prepare REALTRAIN/SCOPES exercises as did several other trainers responding to Q2.

Of the trainers and training managers who had learned to plan and prepare REALTRAIN/SCOPES exercises, a number reported that they had learned in service schools; a few had learned from video tapes; and a very small number had been taught by TRADOC's REALTRAIN Mobile Training Team. The respondents most often reported, however, that knowledge about the preparation of REALTRAIN/SCOPES exercises had been obtained by working with someone who was familiar with the method or by studying doctrinal publications (e.g., training circulars and field manuals) (Q1-25, Q2-18). In general, they believed these sources to be "good" means for acquiring knowledge about REALTRAIN/SCOPES training methods (Q1-26; Q2-19). Those few who had learned through TRADOC's REALTRAIN Mobile Training Team were unanimous in their opinion that the guidance/instruction they had received was "very good."

Though the majority of the respondents appeared to be familiar with REALTRAIN/SCOPES training methods, there are indications that people do

not use the total system. In interview a battalion commander commented that he had used "the concept" but had not used the "whole package" for SCOPES exercises. One typical deviation is the omission of the After Action Review; nearly half of the enlisted men responding to Q3 reported that they did not get together after the exercise so that soldiers could tell how they were able to make each "kill." Another deviation may be the use of too few or unqualified controllers. Training managers reported that the lack of qualified people to serve as controllers was the primary problem with REALTRAIN/SCOPES methods (Q1-24); and only 22% of the squad/crew members who had participated in REALTRAIN/SCOPES had ever been a controller in an exercise (Q3-17a). Of those who had been controllers, many had had no controller training (Q3-17b).

Necessary resources, like ammunition, pyrotechnics, radios, REALTRAIN/SCOPES equipment and suitable field training areas were often cited as sources of special difficulty in preparing REALTRIN/SCOPES exercises (Q1-24, Q2-17). The problem, said the interview respondents, is the overall "time and trouble it takes" (I-06b). A brigade commander described it as "an administrative hassle to get everything together, to get it out in the field, to account for the equipment, and to get people to use it." Others said such things as "it takes too much time to prepare and too many assets to conduct" or "accountability is too tough and support requirements are too heavy." Thus, although a few of the respondents were critical of the realism of REALTRAIN/SCOPES ("if you saw a target," said a brigade S3, "he was automatically dead"), the chief complaint was that the method and its equipment takes too many people, too much time, and too much hassle. This problem is especially critical when unit schedules are "overloaded." As a brigade commander described it, "the current SQT emphasis, coupled with the requirement to run squad ARTEPs, do the maintenance, and do the scheduled training requires the NCO to keep things as simple as he can, and REALTRAIN and SCOPES don't fall in that category."

Expectations and Concerns about the Introduction of the MILES

Perceived Problems/Requirements MILES will Produce. An Armor Brigade Commander voiced a problem expected by nearly all of the interview respondents when he said of MILES, "What worries me most is keeping the system up and the problem of the equipment's durability." People were concerned that the equipment won't be available when they want it, won't work when they get it, won't withstand use in the field (e.g., "the troops will screw them up, throw them in the backs of trucks, stomp on them"), and will be "too sophisticated for the soldier to comprehend, use and maintain." Several respondents predicted that MILES will not be used because people have no faith that the equipment will work "as advertised." A brigade commander was adamant in his statement that "it won't work--nothing works when we get it. When the soldiers, the officers, and the company commanders

see that it won't work, we won't use it anymore." A company commander insisted that "the crews have to have the feeling that MILES is going to work all the time" (I-16).

A related problem anticipated by the interview respondents was garrison logistics. They want to know who is going to have responsibility for maintenance, storage, security, accountability. Some of them suggested that the equipment should be held at TASO, but others felt that at TASO "it will be forgotten." One of the battalion S3s said that MILES is just extra equipment to store, maintain, and account for, and complained that "everybody is busy discovering new equipment for us--the mass of it is difficult to cope with."

One hopeful note among the many worries came from a platoon leader who had "used MILES out at CDEC." He reported that "it had less problems than I thought it would have. The maintenance people out there kept things going and if that can be the case, then the maintenance problems will be cured." But he advised "it will take exposure to sell the product."

Motivation and Attitudes Regarding Future Use of the MILES. Although the survey respondents were generally favorable toward the concept of engagement simulation, they did not appear to be waiting eagerly for the arrival of new engagement simulation systems. When asked if they thought MILES would help units to do better training, nearly all the interview respondents responded in the affirmative. But they qualified their "yes's" in various ways and seemed especially concerned about reliability and accountability for the MILES equipment (I-15).

The chief training advantages cited for MILES is that it will enhance realism and that it provides immediate feedback to the user. One of the Armor Company Commanders was especially enthusiastic that "for the first time in U.S. Army history we are going to be able to combine gunnery with tactics [during training]." Another company commander said that "if you can actually go out and clobber a sloppy unit and show them how they are not fit for combat, it will be worth the extra time."

The extra time and resources required to use tactical engagement simulation systems was a concern of a substantial number of the interview respondents. Most of them were of the opinion that MILES will require fewer resources than REALTRAIN/SCOPES and listed that as one of the advantages of MILES.

Some of the respondents were quite concerned about the special maintenance and accountability requirements that may be imposed by the MILES equipment. They were skeptical about the equipment's reliability. A brigade commander, for example, said that he thought MILES would be beneficial "if it works," and a platoon sergeant qualified his positive

attitude by adding the comment "if the equipment works and isn't too fragile." Several of the respondents favored the use of MILES at the National Training Center. Others stipulated that it would require "special people to run and maintain it." Otherwise, said a brigade commander, "It will go the way of REALTRAIN/SCOPES." When asked if they had a cadre or section that could take responsibility for managing the employment of MILES in their divisions, however, all four of the G3s replied, "No" (I-03).

Most of the interviewees felt that there was some basic level of expertise necessary before maximum benefits can be obtained for TES training (I-76). Although a few individuals felt that TES could be performed at any level without prior training, the typical infantry respondent wished TES participants to be proficient to squad level at least. Armor interviewees thought that platoon proficiency was the lowest effective level for the use of TES.

Several people mentioned certain specific skills prerequisite to the use of TES methods. A battalion S3 said that "the unit should be well grounded in fundamentals before they are exposed to MILES." A brigade S3 agreed that "they have to be proficient in employing tactics at their level." One company commander said that, "The unit should be familiar with gunnery rather than our once-a-year gunnery cycle and should have had at least some experience out in the field operating tactically as a platoon." Referring to the individual soldier, another company commander said "each soldier should be proficient in his SQT."

Despite the negative responses of a few respondents who said such things as "good in theory only" or "not worth the money--a nice-to-do Buck Rogers idea," the tenor of the interview responses was positive toward the idea of engagement simulation and toward MILES in particular. The interviewees believed that MILES can help units to do better training. And they seem to think that MILES could actually be used if it requires fewer assets than REALTRAIN/SCOPES. Acceptance of MILES may rest, therefore, on overcoming its management and maintenance burdens rather than on promoting its training advantages.

The Unit Training Environment

Conditions in the Operational Context of Training

Current State of Training. Training managers, trainers and trainees were generally agreed that the current state of Army training is adequate. Training managers reported that operational readiness training, unit training, and individual training are adequate to excellent in their units (I-44; Q1-3). Trainees indicated that their squads/crews are well trained as teams and that they are well trained as individuals (Q3-1; Q3-2). Both

trainers and training managers perceive that training in the subject areas of tactics, weapons, support, maintenance and communications is adequate or better (Q1-4; Q2-3). On the average, Q1 respondents estimated that fewer than 10% of their maneuver arms platoons would be rated as less than "fair." It appears, therefore, that the community of training managers, trainers and trainees is more satisfied than not with the current state of Army training.

There were some differences in the reported state of training at different divisions and in different units. Respondents at Division B were much more positive about the current state of training in their units. Many of them indicated excellence in the general area of unit training and in the subject area of tactics. Furthermore, they estimated that an average of 44.4% of their platoons could be rated as "very good." Respondents in infantry units at each of the divisions tended to be more positive about the current state of training than were respondents in armor units: infantry respondents more often reported excellence in the areas of operational readiness training. There were also some differences in the perceptions of respondents at different echelons: company level personnel were especially critical of the current state of maintenance training, while platoon leaders reported that it is in the areas of tactics and weapons that training is inadequate. Interview respondents cited personnel turbulence, resource shortages, or the fact that "we have a tendency to do an unprofessional job on routine training that is not specifically designated as 'important'" as reasons why the current state of Army training is no better than it is.

Policy and Training Guidance. Master Training Calendars were published at each of the four divisions surveyed. These calendars covered 52 weeks for three of the divisions and 79 weeks for the fourth of the divisions surveyed. The calendars showed that each of the divisions is or has been using some form of the X-Y-Z or red-amber-green cycle management concept. The events annotated on the calendars covered a range of activities from "Division FTX" to "barracks modernization." The preponderance of events shown on the calendars were training oriented (e.g., CALFEX, SQT), though one of the calendars also included annotations for events that were not training oriented (e.g., reserve component support).

At three of the four divisions, external ARTEP evaluations were indicated as major calendar events. At the one division where external ARTEP was not noted on the master training calendar, the division training guidance stipulated that "battalion, company, and platoon size units will conduct continuous ARTEP evaluations. External ARTEP evaluations will be programmed by appropriate headquarters, as needed." Comments made by the survey respondents at that division suggested that the policy is interpreted to mean that there will be no external ARTEPs. Indeed, several of the survey respondents indicated that they had no experience with external

ARTEP evaluation. External ARTEPs for battalions are, according to G3s, managed at the brigade level with assistance from the division commander (I-94).

Training objectives, scenarios, and support plans for FTXs and evaluations are, according to battalion S3s, retained as a matter of record (I-75). "They are," said one of the respondents, "a good source of background material and can be used to determine the progress of the unit." Responses made by others of the battalion S3s, however, suggested that though the materials are filed they are not often consulted. "We do have some," said an armor battalion S3, "but I have not seen them since I have been S3."

Several of the battalion commanders, company commanders, and platoon leaders indicated that the Master Training Calendar is their principal source of training guidance. But the majority reported that their training guidance comes down through the chain of command (I-86). Such guidance usually takes the form of "training goals." though several of the respondents claimed that the guidance they receive often consists of "non-substantive" requirements. One company commander, for example, said that he gets "the current S3 annual calendar, brigade training guidance letter, battalion training guidance letter." But he said that he finds these to be "relatively useless--I get most of my information by word of mouth--it doesn't work very well." More than half of the respondents, however, indicated that the guidance they receive is "generally pretty good," that it "works OK," or even that it is "very good because it forces us to do our long-range planning."

The quality of the Army's training guidance publications (FMs, TCs, "How to Fight" manuals) was applauded by practically everyone at all four divisions (I-96). "Extremely good," commented one brigade commander, "we use them daily. I have been able to throw away the old publications." Another brigade commander said, "They are the best we have had--their standards are the same throughout the Army so a person should be able to go from one unit to another with no problem." "They are written at the level that the individual soldier can read and understand," said a platoon leader. Thus, there was general agreement that the current publications "are a quantum jump." Complaints which were registered were few in number and minor in nature. "They do a good job," reported one brigade commander, "but they carry the 'comic book' syndrome too far." A battalion commander suggested that because "so many things are changing, the Army should figure a way to keep the publications up to date." The only general complaints were that there are "shortages of manuals or they are not available."

Command Emphasis. Trainers and training managers acknowledge that training should be the central task of today's peace-time Army. In response to questions about the importance of various missions and problem areas

encountered in military units, 93% of the trainers and 91% of the training managers indicated that small unit training should be a task of first-order importance (Q1-6; Q2-5). Most of these trainers and training managers felt that vehicle maintenance, operational missions, and SQT training should also be of above average importance in the military unit. They assigned average or less than average importance to non-training activities such as race relations and administration. Drug abuse control was the single factor for which the importance ratings made by trainers were noticeably different from those made by training managers: 82% of the trainers (but only 22% of the training managers) felt that drug abuse control should be of more than average importance. A rank ordering[13] of the various missions/problem areas is provided below to show the relative importance which the trainers and training managers believe should be attached to each (Rank 1 = most important).

Mission/Problem Area	Rank Order
Small unit training	1
Vehicular maintenance	2
Operational missions	3
SQT training	4
Drug abuse control	5
Race relations	6
Administration	7
Command inspection	8
Community relations	9

This rank ordering does not show, however, that the importance ratings for the first four entries were only slightly different from one another. All four were rated as being of above average importance by approximately the same numbers of respondents. On a 5-point scale, the mean importance ratings for small unit training, vehicle maintenance, operational missions and SQT training were 4.6, 4.5, 4.4, and 4.4, respectively. In contrast, the mean importance ratings for drug abuse control, race relations, administration, command inspection and community relations were 3.8, 3.5, 3.5, 3.4, and 3.0 respectively. These data show that trainers and training managers believe that small unit training, vehicle maintenance, operational missions, and SQT training are the group of missions which should be accorded the greater importance in the military unit. These data also suggest that trainers and training managers make a distinction between "training" and "non-training" activities when they describe how much importance should be attached to missions and problem areas encountered in military units.

[13] The rank ordering is based on the frequency with which each of the missions/problem areas was rated as having more than average importance.

When asked to judge the importance which their superiors attach to the various missions/problem areas, the trainers and training managers reported that, like themselves, their superiors place greater than average importance on vehicle maintenance, operational missions, and SQT training (Q1-6; Q2-5). They do not feel, however, that their superiors share their interest in small unit training. Whereas 92% of the trainers and training managers indicated that they believe small unit training deserves greater than average importance, only 55% of them reported that their superiors provide this emphasis for small unit training. In consequence, small unit training obtains a rank-order of "7" when the various missions/problem areas are rank ordered to show the relative importance which respondents perceive that their superiors attach to each.

Mission/Problem Area	Importance Believed Attached by Superiors Rank Order
Small unit training	7
Vehicular maintenance	1
Operational missions	2
SQT training	3
Drug abuse control	4.5
Race relations	4.5
Administration	6
Command inspection	9
Community relations	8

Inspection of the rating data shows that, though there were slight differences which could be used to generate the rank order, the averages of ratings which respondents supplied to show the importance their superiors attach to SQT training, operational missions, drug abuse control, race relations, administration, and small unit training were, in fact, minimally different from one another (4.0, 3.9, 3.8, 3.8, 3.8, and 3.7, respectively).[14] These figures indicate that the trainers and training managers believe that their superiors do not make any clear distinction between training (e.g., SQT, operational missions, small unit training) and non-training (e.g., drug abuse control, race relations, administration) activities when they "prioritize" the missions and problems encountered in military units. That is, they perceive that their superiors emphasize training and non-training activities alike. Indeed, one of the interview respondents explicitly stated that his division commander "says he is not going to set priorities-everything is important."

[14] Average of rating for vehicle maintenance, community relations, and command inspection were 4.3, 3.4, and 3.3, respectively.

Although these data point to the conclusion that Army personnel believe that their superiors are failing to give training the emphasis it needs to make it the central and primary task of Army units, a comparison of the two sets of importance ratings (i.e., "importance attached by self" and "importance attached by superiors") suggests some incongruity. The ratings which subordinates made for "importance attached by superiors" were nearly always lower than those which superiors made for "importance attached by self." These differences exist despite the fact that the sample of survey respondents was selected to establish a continuous trail from senior commander to junior enlisted men (i.e., the existing chain of command was followed). Apparently, there is a discrepancy in what is *intended* by superiors and what is *perceived* by subordintes. Personnel at each level in the chain of command believe that they attach more importance to training than their superiors do. They also believe that they are providing more emphasis for training than is perceived by their subordinates. The implication may be that the problems of training management make it impossible for superiors' actions to conform with their own lists of priorities, thus giving their subordinates the impression that they attach less importance to training than they really do.

Resource Availabilities/Constraints. The "big" resource problems cited at the four CONUS divisions which were surveyed were "time to train" and "the NCO structure." The survey respondents indicated that their principal complaint about time is that too much of it is committed to "outside requirements that take precedence over training." There is, explained one of the brigade commanders who was interviewed, "plenty of time, but there are so many candidates for the time that is available." A battalion S3 echoed the sentiment, complaining about "lack of training time-we have about 3 months a year to train and the rest of the time we are doing other projects and requirements" (I-47).[15]

The problem with the "NCO structure" is two-fold. Fist there are critical shortages of NCOs, and second, the people who are there are "young and inexperienced." One company commander described the NCO problem by pointing out that "most of the platoon sergeants are E6 rather than E7, and most of the squad leaders are E5 or acting E5 rather than E6" (I-83).

Units are often short of officers and enlisted men as well as qualified NCOs. One of the company commanders who was interviewed said that he has only 111 personnel of the authorized 160 and that the shortage is exaggerated by the fact that 19 of the 111 are on special duty. Another company commander lamented that "I have 137 out of the 166, but only 42 are present for training-86 are special duty, appointments, and on leave." The problem of personnel shortage appears to be especially acute below the battalion level. The battalion commanders who were interviewed indicated that their units were closer to authorized strength than did the company commanders. Indeed, one of the company commanders remarked that "most battalion-and-higher staffs do not go short of their authorized strength."

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[15] This finding is somewhat different from that of a study of training detractors that was conducted in the same time-frame and sampling some of the same divisions as were surveyed for this report. In that study (Funk et al, 1981) "time was not found to be the problem that the research team had expected." Still, Funk et al found that 70% of the individuals queried at company/battery level answered that they did not have enough time to train, though respondents at "higher levels of command with staffs and higher concentrations of officers and experienced NCOs perceived time to be less of a problem." This latter result is consistent with what is being reported here, and the reader is referred to pages 65 and 66 for a fuller exploration of the difference in perspective on the "time problem." The reader is also referred to Funk, S. L., Johnson, C. A., Batzer, E., Gambell, T., Vandecaveye, G., and Hiller, J., Training detractors in FORSCOM divisions and how they are handled. ARI Research Report 1278, May 1980. (AD A099 188).

In addition to the "terrible" shortages of personnel and time, availability of training space/areas is also a problem at the installations surveyed. At each installation at least one of the interview respondents indicated that terrain constrains the size of unit which can be effectively maneuvered (I-9). G3s, brigade commanders, and brigade S3s indicated that training area and terrain are principal factors which constrain the types of training that can be accomplished under present conditions. They reported that, because of limited amounts or awkward locations of training areas, they are unable to conduct training with large maneuver units, are hindered in the firing of specific weapons such as tank main guns, and encounter difficulties when trying to schedule combined arms live fire exercises. As might be expected based on their different geographical locations, there were differences among the divisions in the way particular types of training are constrained. At Divisions A and D respondents said that "A brigade is just about the largest sized unit we can effectively maneuver." But at Divisions B and C respondents indicated that individual battalions are the largest sized units that their training areas will accommodate. A brigade S3 at Division D commented that "The terrain that is available is used constantly so that the small unit leader doesn't even take a map to the field-he knows the terrain so well." A similar complaint was lodged by a brigade S3 at Division B who said that "We have to concentrate our training in one area which is really being beat up." Other complaints were that "there are no urban or built-up areas" for training, and that there is a "lack of ranges for certain weapons or for combined arms training."

Though these remarks indicate that the respondents feel that certain types of training are constrained, the general tenor of their comments suggests that they are not too dissatisfied with the types of training they are able to conduct. Two of the 20 target respondents went so far as to say that present conditions have no restrictive impact on the types of training than can be accomplished.

The G3s and brigade S3s who were interviewed reported that there is no conflict between training dollars and training requirements (I-91). They have, as one brigade S3 said, "the dollars to do what we want to do." They did not, however, have installation data on funding requirements expressed in dollars and battalion field training day. The G3s estimate the cost of a battalion ARTEP in several ways-one of them reported that the ARTEP may cost 5 days, another estimated that is may cost one battalion and approximately 40 extra people, and a third said that the cost would be approximately "$6K" (I-73). Additionally, they were unable to estimate the average cost of a training day, though they reported that they are trying to collect requisite information for computing such costs (I-72). At present they are confident that "sufficient funds are normally made available" though they may, as one G3 indicated, "feel the crunch coming."

Qualifications and Morale of Participants in Army Training. Despite their apparent satisfaction with the current state of individual and unit training, the survey respondents appeared to be somewhat pessimistic about the current population of trainers and trainees. The Q1 and Q2 respondents were not impressed with the ability of today's young soldier to learn and remember either individual and collective skills. Approximately half of the survey respondents (55%) thought that the young soldier learns and remembers such skills "moderately well," but there were substantial numbers (38%) who reported that the young soldier learns and remembers "poorly" or "very poorly" (Q1-9; Q2-9). The Q1 and Q2 respondents were also unimpressed with the ability of squad leaders and crew

commanders to conduct good squad and crew training. Some of the respondents said that squad leaders and crew commanders conduct training "moderately well," but substantial numbers (40%) believe that today's squad and crew leaders conduct squad/crew training "poorly" or "very poorly" (Q1-8; Q2-8).

Although a few individuals thought that today's population of NCOs is better than a comparable group from seven or eight years ago (when the Viet Nam war was at its most intense), the typical respondent reported that today's NCOs are inferior to those of seven or eight years ago on several dimensions. The Q1 respondents, especially those from Division D, were critical of the NCOs E4-E6. They said that this group of NCOs is inferior in terms of initiative, professional knowledge, leadership, and dependability. These respondents were less critical of the NCOs E7-E9, allowing that they are approximately equal to those of several years ago in terms of their dependability and initiative. Company commanders thought that the professional knowledge of NCOs E7-E9 is better today. However, those questioned at battalion level were critical of the leadership shown by the NCOs E7-E9 (Q1-7).

The highest level of interviewees (G3s, brigade commanders, and battalion commanders) were slightly more optimistic than the rest of the sample. They perceived that the initiative and dependability of today's NCOs is approximately the same as that of the group of several years ago and that their professional knowledge is even better. These higher level training managers were concerned, however, about the quality of leadership exhibited by today's NCOs. The overall problem according to one of the battalion commaders, is "the young E5 in the E6 spot and the young E6 in the E7 spot" (I-71).

Trainers and training managers thus perceive that today's population of "line" trainers is only marginally qualified for training the current population of trainees who are themselves only marginally qualified to benefit from training. This result is somewhat perplexing since, in response to questions about training status, this same group of trainers and training managers indicated that they are more satisfied than not with the current state of individual and unit training (see pages 22 and 23). One explanation for this apparent paradox is to conclude that available training methods are sufficiently robust to overcome problems of individual ability and initiative. That is, it is possible that the currently available methods for training individuals and units can be used to very good effect by marginally capable trainers on marginally apt trainees. Another, and perhaps more likely, explanation is that trainers and training managers have adjusted their standards for judging the current state of training to the conditions under which training is currently taking place. In that case, their report that the current state of training is adequate to excellent could actually mean "as good as can be expected given the abilities of the trainers and trainees" rather than meaning "well prepared to fight and survive on the modern battlefield."

A bright spot in the reports about qualifications of participants in today's training is that the survey respondents, especially those in infantry units, believe that today's junior officers are at least as good and sometimes better than those of seven or eight years ago.

The turbulence in the current training environment is perceived to have serious adverse effects on the morale and career intentions of military participants. The interview respondents generally agreed that personnel turbulence creates a situation in which officers and NCOs are unable

to see positive results of their own efforts (I-85). They never "see the end product but are always looking at new people," said a battalion commander.

Another turbulence factor having serious adverse effects on the morale and career intentions of officers is the problem of conflicting priorities at different levels of command. The problem, as described by one of the platoon sergeants, is that "each echelon has its own priority which is *added* to those of the superiors." The result is that they "end up with more to do than we have time to accomplish." Several of the platoon leaders and platoon sergeants described it as a "touchy" situation since "subordinates are forced to make their own decisions as to which priority is the *real* Number 1."

Many of those interviewed also reported that uncertainty due to frequent changes in goals and missions can have serious effects on morale and career intentions. They said that the effect of this factor is especially serious for enlisted men. One of the platoon sergeants complained that "Change 1000" is always in effect. He said that "we can be certain each morning that some change has taken place during the night." As a result, said one of the company commanders, "they know things are going to change tomorrow anyway, so why bother doing it today?" But, "it's good training for combat," said one of the platoon leaders.

Current Practices and Problems in Training Management

Programming Resources and Training Activities. Each of the divisions surveyed is now or has been using some version of the cycle system management concept to program activities and resources. "Green" cycles are annotated on the Master Training Planning Calendars as prime training periods. "Amber" cycles are periods for "non-priority" training or for prime training which includes individual training as a priority activity. "Red" cycles are support periods during which post support and training support activities are scheduled. Although the cycle periods averaged 3 to 5 weeks for the infantry and tank battalions which were surveyed, the frequencies and durations of the three types of cycle period are quite variable both within and between divisions. On the calendars for the four divisions the cycle periods ranged from 1 to 20 weeks duration, and the frequency with which a particular cycle occurred ranged from 1 to 12 (e.g., at Division A the surveyed armor battalion was scheduled for 5 green periods ranging from 1 to 20 weeks, 3 amber cycles, and 3 red cycles ranging from 3 to 4 weeks each to provide a total of 47 weeks green time, 11 weeks amber time, and 11 weeks red time. The surveyed infantry battalion at Division A was scheduled for 9 green periods ranging from 1 to 12 weeks, 5 amber cycles and 4 red cycles ranging from 3 to 6 weeks each to provide a total of 36 weeks green time, 19 weeks amber time, and 17 weeks red time).

Most of the master training calendars showed AGI, division FTX, live fire exercises, SQT, CPX, EIB, and external ARTEP as scheduled calendar events. The frequency and duration of these events are variable. External ARTEPs, for example, can consume 3 or more days at the battalion level, 2 or more days at the company level, and 1 or 2 days at the platoon level (I-97). The calendars for the various divisions showed 1 to 12 weeks of tank gunnery for armored battalions, and G3s who were interviewed indicated that tank gunnery for armor is a factor which influences planning for different types of elements when preparing the master training calendar (I-95). The impression given by the training calendars is that training is "event driven," rather than being paced by a rotation of prime-time, local training, and post support periods.

The majority of the training managers who were interviewed indicated that the transition from one cycle to the next causes some "slack" and loss of training time (I-50). They also indicated that transitions make preparation for training an awkward business. One of the battalion S3s explained that "we can't wait unit the first day of a green period and must, therefore, spend a lot of time in preparation." Such problems have prompted Division B to abandon the cycle system in favor of a "new system in which one brigade would be in support and one in training in alternate 12-week periods." They feel that this new system is workable because "the actual non-training requirements on this post are small enough that there is no need to use the cycle system." Their expectation is that the new system will yield "more field training days" than were available under the cycle system.

Brigade and battalion commanders indicated that they have substantial amounts of freedom in determining the short-range plan for training. More than half of the brigade and battalion commanders reported that they have total freedom to decide what training their units need (I-45).[16] There were some differences between divisions, with respondents at Divison C reporting maximum amounts of freedom and those at Division A indicating that they are relatively constrained by higher headquarters. In general,

[16] In response to another survey question (I-86), however, only one of the battalion commanders indicated that he is a principal source for training guidance. He said, "I submit my training requirements to higher echelons and they tell me where I can operate." The more usual circumstance was described by a company commander as follows: "Starts with the division master schedule telling us what cycle we will be in. To this is added the brigade and battalion guidance." A platoon leader observed that "it's very centralized."

however, the brigade commanders indicated that they are able to "pass flexibility down to the battalion commander," and the battalion commanders said that they decentralize and/or "coordinate with the company commanders to see what we both want done."

Company commanders and platoon leaders reported that they have little freedom to decide what training their units need and then see that it is carried out. One of the company commanders said of his situation, "I get told when I can go to the field and even though I decide what to do, it is still subject to approval of higher HQ." Another said, "I have to cheat to get in anything the company needs." Their complaint was not, however, against the amount of training guidance they receive within the confines of the Battalion Training Management System. Instead, their lament is that time is too often consumed by tasks which are non-training oriented. One of the company commanders, for example, explained that "I try to get my people into the field, but medical and administrative requirements have priorities over tactical training." Because of these requirements, said one of the platoon leaders, "we don't have time to exercise."

Several of the brigade and battalion commanders remarked that their ability to carry out their plans are hindered by these same constraints. One of the battalion commanders, for example, said that "what we say we are going to do and what we carry out are two very different things." He explained that "we do a lot of things we hadn't planned--we project a year in advance, yet a month before the planned events these unscheduled events knock the slats out." And a brigade commander explained that there are "things imposed on the division calendar that are not in the SQT or ARTEP."

It would appear, therefore, that effective programming is hampered by what respondents perceive to be excessive and/or poorly timed non-training requirements. A platoon leader echoed the thought and summarized the situation when he said, "Due to the number of outside tasks and lack of priorities, even my total freedom doesn't help that much."

Establishing Training Priorities. "We try," said one of the G3s, "to keep the training requirements as top priority." But, all the G3s indicated that there was no specific means or procedure for establishing priorities between training and non-training misisons. As a result, survey respondents felt that training activities often lose out in the competition for priority (I-49). According to one of the G3s, "when distractors come in, we drop out training to accommodate them." A brigade S3 echoed the sentiment, stating that the task of becoming combat ready is fourth in a list of priorities where conducting tests, acting as replacement center for Europe, and supporting reserve component training come before training.

A company commander complained that "I tried to get my superiors to set priorities, but they keep everything top priority" (I-70). The result

is that programs are frequently overloaded. All of the G3s and brigade commanders who were interviewed said that their subordinate units feel that there are more requirements laid on them than they can handle (I-68). It is, said one of the brigade commanders, "a natural problem" and is normally communicated up the chain of command. However, only one of the respondents indicated that there is any formal procedure for reporting such overloads. This brigade commander said that subordinate units are required to analyze the division training program and to report "their perception of the way the plan impacts on them."

Irrespective of how it is detected, there are several ways in which G3s and brigade commanders respond to the problem of overcommitment for their subordinate units. Sometimes they simply sympathize but do nothing to alter the situation. Occasionally, however, it is possible to reduce the requirements by "eliminating the efforts that are less productive" or "minimizing those requirements that detract from training." To do this it may be necessary to "go back to higher headquarters and request relief." The more common response, however, is to help the subordinate units set priorities so that "they understand them and can see which priorities I don't really care about," said one of the brigade commanders. Another said, "If they need a priority set, I set the priority."

With the exception of one brigade commander at Division B, all of the brigade, battalion, and company commanders who were interviewed indicated that they sometimes find it impossible to meet all the requirements laid on them by higher headquarters (I-70). There were some differences among respondents at different divisions regarding the means by which they cope with such overloads. The respondents at Division C seemed to feel that there is more flexibility in their schedules than was indicated at other divisions. They said that they could "go back and tell my boss I can't do them all" whenever there are more requirements than they can handle; and they said that their superiors "are pretty good about adjusting."

There were a few respondents at Divisions A, B and D who said that it is possible for them to request relief from higher headquarters and/or "dilute" the effort when they become overcommitted. As an example, one company commander described a situation in which, "they will ask for ten men to rake leaves when there are only two rakes. When I am swamped I offer my proof and ask for relief." Others of the respondents said that they cope with overloads by doing some of the requirements "mediocre" or "half-assed."

But the most common response to overload is to set priorities. A battalion commander, for example, said that "the Commanding General picks the things he wants for the day, the brigade commander picks his, and I pick mine. You just have to be selective and do what you think best."

This "simple matter or prioritizing (is) one of the biggest problems the company commanders have" because they have to "determine what the *real* priority is," said one battalion commander. A brigade commander explained that "I have to set priorities to help the youngsters who do not have the experience or the staff to know what to do." The company commanders themselves, however, seemed to have no reluctance about setting priorities. "It's just 'crisis' management," said one of the company commanders; "I determine that which is most important out of it all and go about doing that." Perhaps their confidence in their ability to ignore requirements and establish their own priorities derives from the fact that, as one of the battalion commanders observed, "they (his superiors) don't check enough to catch me anyway."

Selecting and Training the Training/Evaluation Support Personnel. The Master Training Calendars for the four CONUS divisions which were surveyed showed that "red" or "support" cycles are assigned to brigades or to battalions on a rotational or semi-rotational basis. Training support personnel should, therefore, be readily available. Battalion and company commanders who were interviewed reported that "a lot of time is spent in support of others," although none of them indicated that there is anything special about their type of unit to make it unusually in demand for supporting the training of other units (I-46). "We have a normal task organization," said one of the armor battalion commanders, "where we trade with the infantry battalion to train in combined arms."

The use of cycle system scheduling should make it possible to maintain small unit integrity by assigning support to subordinate units on a rotational basis for specified periods (see FORSCOM AR 350-1, Dec. 1978). As mentioned earlier, however, some of the company commanders complained that the number of special duty assignments, medical appointments, and administrative requirements continue to disrupt the integrity of their units.

At two of the four divisions, the G3s reported that their installation has a training cadre to assist units in conducting training (I-0). Neither of these two G3s, however, was satisfied with the cadres as presently constituted. At Division B, the cadre is not permanently staffed. Instead there are about 40 people, earmarked as individuals rather than by positions, who can be "tasked as required." The cost of this "cadre," said the G3, is that "we pay a price when they are absent from their primary jobs." At Division D there are 3 individuals who staff a more permanent cadre. The G3 at Division D reported, however, that this minimal effort is very unsatisfactory. He said that they "need more people to establish a division standardization program."

At the present time, none of the four divisions has an evaluation section to conduct evaluations of training. The G3 at Divison D said that officers and NCOs assigned to the G3 section are available to perform this

function (I-1). And one of the brigade S3s at Division A reported that he trains "a small task force in the brigade to evaluate ARTEPs." He expressed a need for an evaluation cadre that is "professional, with no other duties than to administer ARTEP." In general, however, there appeared to be no systematically applied criteria for selecting or training ARTEP evaluators. The result may be that personnel selected as ARTEP evaluators are not as professionally or technically qualified as is desirable. One of the squad leaders who was interviewed said that he wished evaluation could be done by "someone who knows what they are doing."

Training the Trainers. Small unit trainers were split in their opinions about their needs for additional guidance or education in their jobs as trainers. Some of them (24%) indicated that they felt no need for additional guidance, but the remainder reported needing additional guidance regarding one or more aspects of training (Q2-7). The need cited most often (i.e., reported by 57% of the trainers) was for information regarding what standards of performance to expect in small unit training. Approximately half of the trainers also indicated needs to know more about techniques of small unit training, about specific subject matters such as weapons or use of terrain, and about field training in general. For each of these areas, respondents in armor units reported needing additional guidance more often than did those in the infantry units suggesting that the small unit trainers in infantry units are more confident than those in armor units. Overall, however, there are many trainers who feel that they need more coaching in several areas in order to develop their expertise as trainers.

Most of the small unit trainers who were interviewed reported that schools were the source of their instruction in how to train (I-17). All of the platoon leaders had been formally instructed in how to train in officers candidate school and/or branch service school. The majority of the NCOs had received formal instruction in how to train at NCO schools. A few of the line trainers, however, indicated that they had either had no trainer training at all or that they had acquired their training on the job. This situation may exist because the shortages in key NCOs is forcing junior grade NCOs into senior grades without the benefit of additional schooling.

The instruction received in the schools was described as "good" or "excellent," but many of the trainers lamented that they had not had opportunities to use it. For example, one of the platoon sergeants said that "BNOC in Germany was good, but I don't get the chance to put it into practice." The trainers related that they need "more time to plan," "more realism and training aids," and "more time to train" in order to put their expertise into effect.

Many of the respondents also emphasized the need for more practical training in the schools. A tank commander said that he believes "field

training is too much a classroom operation," and a platoon sergeant said that the techniques taught in the schools are "out of line with practical training." What is needed, according to several respondents, is "more hands-on type of training."

Some of the company commanders and battalion- and brigade-level interview respondents agreed with this point of view (I-18). One battalion S3, for example, said that "PNOC doesn't train the NCO to be a trainer. They can't use what they learn at PNOC." Several of the respondents thought that formal schooling should be deemphasized to allow trainers to be trained within the operational unit. "We need more OJT," said one of the battalion S3s, "as this is the best way to train." And a brigade S3 said, "OJT makes better trainers." Others of these upper echelon respondents thought that trainer training would be improved if distractors, especially personnel turbulence, could be reduced.

More often, however, the company commanders and battalion - and brigade-level interview respondents thought that the best way to train the trainers is to improve the formal courses of instruction. Some of them thought that particular subject matters should be stressed. A battalion S3, for example, said that the courses should "dwell on 'how to teach' and concentrate on tactical training," and a battalion commander would like to "see them spend a little more time in leadership and counseling." The most popular solution, however, was simply to allow more time for training the trainers. "There is," claimed one of the battalion S3s, "no opportunity to train trainers other than 4 or 5 hours of officer classes and on-the-spot critiques." A company commander said that "we don't have time to train right. When problems occur, we take trainers aside and give them some more training *as time allows*." A brigade S3 suggested that a priority needs to be established for trainer training, and a battalion commander said, "It's a matter of emphasis. We need training on a daily basis; once a year won't do it."

Coping with Turbulence and Diversions from Training. Shortage of resources, turbulence, and diversions from training are the three general categories in which training managers encounter their major problem areas (I-47). The training managers reported shortages of middle-management NCOs, qualified trainees, training space, ammunition and training time. They indicated that problems are associated with personnel turbulence and with mission turbulence. And they reported that they have trouble "overcoming distractors."

At each division there were respondents who claimed that they either do not have enough maneuver/range area or that the space that is available is not adequate in other ways to their purposes. A brigade commander at Division B commented, for example, that "we have adequate terrain, but it does not lend itself to maneuver and fire under combined arms concept."

At other divisions the respondents indicated that ranges are poor, training areas inadequate, and the terrain generally restrictive. A few of the training managers also indicated that there are shortages of training aids or of ammunition.

In the main, however, training managers blamed mission turbulence and personnel shortages for their management problems. They reported that personnel shortage/turbulence causes different problems at different organizational levels, but were most concerned that the "terrible" shortage of qualified NCOs generates constant job rotation, forces the use of inexperienced NCOs in senior positions, and disrupts unit integrity. Mission turbulence was cited as a factor that disrupts progressive training, precludes proper planning, wastes training time, causes training to be poorly done, and erodes confidence in leadership. Personnel shortages and mission turbulence are thus perceived to be factors of multiple impact. They are, according to one brigade commander, "the reasons we are not operationally ready."

Impact of Personnel Shortage/Turbulence. Nearly 40% of the training managers who were interviewed reported that personnel shortage is one of their major problem areas. They reported shortages of personnel in the required MOS and special problems with shortages in the NCO structure. One of the battalion commanders, for example, described his biggest problem as "People--I am presently at 75% of authorized tankers and am projected to 50% in the next 90 days. I am short personnel in leadership positions, having only one out of three platoon sergeants in each line company and no E8." Several respondents reported that they do not have sufficient people to operate the equipment for training. Others reported that their people are not qualified to do the work they have to do. A brigade commander said, for example, "I have the people there, but they are young and inexperienced." Thus, the "people" problem means both that there are too few people and that the available personnel are inexperienced.

A number of the training managers reported that NCO turbulence is their "biggest problem" and indicated that it is largely engendered by shortages in the senior grades (I-84). A brigade commander explained that they "lose a lot on (overseas) levies, and a lot are getting out" of the Army. In consequence, the units do not get "one-for-one replacement" and must often use "lower grades in key slots." One of the brigade S3s described the problem as a "self-inflicted wound as we shift NCOs to the organizations that need them." A brigade commander remarked that "many squads are run by Spec 4's." And a battalion commander reported that he is "missing 29 of the squad leaders in the battalion." Such a situation, he claimed, "puts the entire training program in jeopardy."

The training managers seemed to be less concerned about the impact of personnel shortages and/or turbulence among enlisted men other than NCOs. More than 36% of the training managers who were interviewed failed to comment regarding problems associated with such turbulence. Of those who did comment, however, there were several who reported that personnel turbulence among enlisted men causes units to be undermanned and/or inadequately trained. One company commander, for example, claimed that "I have no tank crews that have ever fired together." A battalion S3 commented that "you never seem to have a full squad or platoon." Others of the respondents indicated that personnel turbulence among enlisted men forestalls progressive training. One of the battalion commanders explained that "a unit cannot progress toward higher level training because you are constantly having an individual training problem or at least an assessment of how good the new guys are." According to one of the company commanders, "all this turbulence takes its toll in training because you have to retrain them again."

The extent of officer turbulence appears to vary at the different divisions. At Division C, for example, the G3 said that officers have "quite an unstable tour; we have a loss of officers every four months." At Division D, on the other hand, a brigade commander reported that the young captains are "burned out because they have been here since they were 2nd lieutenants." Thus, it was not surprising to find that the training managers were divided in their opinions concerning problems caused by officer turbulence. Half of them thought that turbulence among officers is "no real problem," but half reported that officer turbulence causes constant job rotation. Said one of the brigade commanders, "Anytime an officer moves he is usually in a key position. It has a great effect within the battalion because the commanders lack flexibility."

The training managers who were interviewed seemed to feel that personnel turbulence and personnel shortages, particularly the critical shortage of experienced NCOs, are conditions endemic in current social and economic circumstances. A battalion commander pointed out that "the Army NCO authorized strength is only funded at 80%." This commander also commented that the retention rate is low, saying that "the E5s and E6s who exist are in Europe or are getting out because they don't want to go to Europe again." Others of the respondents indicated that personnel shortages are naturally associated with an all volunteer Army. Thus, although they are concerned that "experience and knowledge are ever diminishing quantities because the middle management NCO is getting out" and perceive that personnel shortage/turbulence has detrimental impact on training, the training managers appeared to accept both personnel shortage and personnel turbulence as permanent features of the Army training environment.

Impact of Mission Turbulence and Diversions from Training. Though the amount of mission turbulence was observed to vary at different divisions

and at different echelons within divisions, the interview respondents were substantially agreed that mission turbulence is a serious problem. Approximately 60% of the training managers reported that it is a "severe" problem in their organizations (I-81). They make some allowance for the fact that personnel shortages contribute to mission turbulence--a battalion S3, for example, remarked that "because of the lack of quality EM/NCOs, officers are forced to do the major amount of the load (so that) we are working longer hours to make up for this lack." Priorities thus become confused and mission turbulence is an expected outcome. In general, however, the training managers perceive that mission turbulence is a condition generated by a "top heavy" bureaucracy. One of the brigade S3s who was interviewed opined that "our higher organizational levels are too heavy--too big. When they put out requirements, the tactical unit is stifled."

More than 40% of the training managers indicated that they have too little time to accomplish all that is on their Master Training Calendars. They are, said one battalion S3, "trying to do too many things at one time without enough lead time to plan." A brigade commander made the similar observation that "we have plenty of time to train, but there are so many candidates for the time that is available. According to the training managers who were interviewed, the consequence of overcommitment is that "we are constantly changing our training." A battalion commander at Division D reported that "we have a *dynamic* Master Training Schedule--there have been three different versions in the month of March." His comment was echoed by a number of other survey respondents. Company commanders at Division A, for example, reported that "we have had three Division Master Training Schedules in the last four months" or that "the division changes its Master Training Schedules almost on a weekly basis." The impact of this turbulence in the long-range plan for training was described by a company commander who said that "I am not accomplishing the training I schedule, and what I am able to accomplish is done half-assed." A brigade S3 underscored the point when he said "we often times end up executing most of the requirements, but we don't get much out of them.

Another factor that underlies mission turbulence is the number of unprogrammed requirements imposed with too little notice and allowing too little time to plan. "At the last minute," said one to the company commanders, "I get tasked for my personnel and also for my weapons. Things change so often here that I can't even keep up with them." A brigade commander commented that "the G3 here has been trying to freeze the training program for 18 months in advance, but we have no control over external influences above division." A battalion commander admonished "as long as the Army keeps its mandatory requirements a secret until the last minute, we are going to have mission turbulence."

The survey respondents estimated that 10-30% of the activities on battalion and company training schedules are changed during amber and green

cycles with more disruption of the schedule during amber than during green. The majority of the brigade- and battalion-level interview respondents reported that during green cycles battalions can expect to accomplish "almost all" of the battalion training schedule without major revision (I-82). They indicated that it is harder to accomplish any training scheduled during amber cycles, but said that battalions can expect to accomplish "quite a bit" of the schedule without major revision. Trainers' reactions to mission turbulence at the company level is approximately the same. Training managers who responded to the questionnaire estimated that companies spend approximately 12% of their green time and 25% of their amber time on unscheduled (short-notice) demands (Q1-13). Red cycles are more turbulent, with companies spending approximately 50% of their red time on unscheduled support demands.

Averages for the estimates which training managers made of the amount of time companies spend on unscheduled support demands are shown below. These figures probably reflect the slight differences in mission turbulence at different divisions. Of the four divisions, Division D reported the most turbulence in each of the red/amber/green cycles. Divisions A, B, and C showed similar levels of turbulence overall, though at Division A there was relatively more turbulence in amber and green cycles and relatively less turbulence in red cycle. At each of the divisions, the largest amounts of turbulence caused by unscheduled support demands were reported for red cycles and the least amounts were reported for green cycles. This result is generally consistent with the idea that red cycles are times set aside for support activities whereas green cycles are intended to be free of interruption and dedicated to training activities. Indeed, at Division B and C there is a fair amount of stability in the green cycles. A brigade S3 at Division C remarked on his situation saying that "for the green cycle there is a very high assurance that we will complete all of the schedule."

Average Estimates of Percent of Company Time Spent on Unscheduled Support Demands (From Q1-13)

	Division			
	A	B	C	D
Red Cycle	38.1	50.0	53.7	54.2
Amber Cycle	26.3	15.4	23.7	31.7
Green Cycle	14.4	11.5	8.9	17.1
Overall	26.3	26.6	28.8	35.3

Although the estimates of time spent on unscheduled support demands were approximately the same at each of the divisions surveyed, the interview respondents at Division C were less pessimistic about the impact of mission turbulence. Approximately half of the training managers at Division C reported that mission turbulence is "no problem" at their installation. The other half believed that mission turbulence is a "severe problem," but were optimistic that "the green-amber-red cycle system will change it."

Within each of the divisions surveyed, there was increasing concern about mission turbulence down the chain of command. Company commanders perceive that considerably more of a company's time is consumed by short-notice, unscheduled support demands in red and amber than was reported by respondents at battalion or brigade levels. The estimates made by respondents at the different echelons are shown below.

Average Estimates of Percentage of Company Time Spent on Unscheduled Support Demands (Q1-13)

	Respondent		
	Bde S3	Bn S3	Co Comdr
Red Cycle	45.0	44.3	59.3
Amber Cycle	15.8	27.1	22.9
Green Cycle	7.2	9.3	19.4
Overall	23.0	26.9	36.8

Company commanders believed mission turbulence has a more profound impact on training than was acknowledged by the brigade commanders. Three-fourths (75%) of the brigade commanders indicated that mission turbulence is, at most, a "minor problem," whereas 80% of the company commanders who commented indicated that mission turbulence is a "severe" problem. Since, as was indicated earlier, respondents at each echelon report that mission turbulence is generated by requirements imposed from "higher up," it is to be expected that there would be more concern at the lower levels of command.

The impact of turbulence which is caused by the addition of unprogrammed requirements is that it precludes proper planning and/or contributes to the problem of overcommitment. "How do you have 'ninety days locked and planned in detail,'" queried one battalion commander, "when you are wrestling with commitments that come one week prior to the actual date?" According to one of the company commanders, you "get missions late and lack the preparation time to do them well." The problem is then aggravated,

said one of the bridage S3s, by the fact that "we don't seem to be able to replace the old requirement, we just add the new one."

A number of the interview respondents (28%) also reported that sound training often gives way to competing requirements that are non-training oriented. There are, said a brigade S3, "outside influences which affect battalions--tasks and commitments other than training that are levied from above." One of the company commanders, for example, reported that "a great effort has been made to unburden the company commander of administrative tasks, but it hasn't helped because now the administrator tells the trainer when he wants my men--in other words, my job as trainer is secondary." As another example, a battalion commander said that his biggest problem is "having my resources committed to activities that have nothing to do with training--like support a parade for Miss Sweet Onion." The result of such diversions from training is, according to several of the survey respondents, that they are often unable "to get everyone together in one spot so you can train them." There are, in fact, "so many diversions from training that we can't muster a full squad or platoon."

The training managers also reported that diversions from training and mission turbulence "cuts our training to a very small period," causes maintenance to be "dropped out," and renders management personnel "unable to train the trainers." Thus, although there was an occasional individual who felt that "it is not as bad as it used to be," the consensus was that mission turbulence is a serious obstacle for the training manager and a detriment to sound training.

Current Practices and Problems in Conducting and Evaluating Training

Type, Amount, and Frequency of Tactical Training. Several major field training events were annotated on Master Training Calendars at the different divisions. At divisions A and B, one week had been programmed for Division FTX and two to four weeks were scheduled for Brigade FTX. At Divisions, A, B, and D, one week was designated for combined arms or company team live fire exercises. At least three weeks of tank gunnery was scheduled at each division. And, with the exception of Division C, all the calendars designated at least one week for external ARTEP evaluations.

The amount of tactical training appears to be quite similar at the different divisions. Trainees at each division reported that they get enough individual training to prepare them for their duties as squad/crew members (Q3-3). They were less in agreement concerning the training they get in preparation for SQT. Respondents at Division B reported that they do not get enough preparation, but respondents at other divisions generally indicated that they get enough individual training to prepare for SQT. At each division the complaint was lodged that training is too often concentrated at company and battalion levels; i.e., that there is too little

training at the small unit level. However, when they were asked to estimate the number of days spent conducting "separate" training at the various levels, responses suggested that approximately equal amounts of time are spent on separate training for squad/crew, platoon, and company-sized units and that slightly less time is spent on separate training for company team sized units (Q1-14; Q2-10).

Despite differences in the durations of cycles at different divisions, the survey respondents were generally agreed about the number of days of separate training conducted by different sized units during red and amber cycles. The majority judged that squad/crews, platoons, companies, and company teams conduct separate training fewer than 8 days each during a red cycle and fewer than 16 days each during an amber cycle. Within these confines, the survey respondents perceived that more red and amber time is spent conducting separate training for squads/crews and platoons than for companies and company teams. They estimated that company teams conduct no separate training during red cycles and that neither company teams nor companies spend more than 7 days conducting separate training during amber cycles.

Though there was less consensus concerning green cycles, the data suggest that a similar situation exists for green or prime time training. The majority of the survey respondents estimated that squads/crews, platoons, companies, and company teams conduct training fewer than 16 days each during a green cycle. Averages of the estimates made by the survey respondents are shown in the figures below. It must be pointed out that these estimates are *very approximate*. The differences in cycle duration at the different divisions, the different amounts of experience which respondents had had with the cycle system (e.g., Division C was in the initial phase of adopting the cycle system, whereas, Division B was abandoning it), and the different perspectives afforded at different echelons must all have had effects on the estimates made by individual survey respondents. Indeed, the variability in the estimates was substantial (e.g., estimates for tank platoons during green cycles ranged from 0 to 30 days, with M = 9.46, S = 8.71). The figures shown below are, therefore, provocative rather than definitive, and they may be overshadowed by platoon leaders' insistence that "platoon level training is lacking," that "when I do get any time it's during an FTX," that "I don't have much time to train my platoon," and that "I don't remember the last time I was in the field with my platoon."

Averages for Estimates of Days Spent Conducting Separate Training for Different Sized Units*

	During Red Cycles** (Support)	During Amber Cycles	During Green Cycles (Prime-time)	Totals
Armor Units:				
Tank crews	6	8	9	23
Tank platoon	4	9	14	27
Tank company	4	8	10	22
Company team	3	8	11	22
Infantry Units:				
Rifle squad	4	9	8	21
Rifle platoon	3	9	9	21
Rifle company	3	11	13	27
Company team	1	2	7	10

* These estimates are *very* approximate, and are presented here only to suggest the ways in which Army personnel perceive that training time is distributed across different sized units.

** On the average, armor units were scheduled 2 red cycles of approximately 4-weeks duration, 6 amber cycles of approximately 4-weeks duration, and 4 green cycles of approximately 5-weeks duration during a 52-week period. Infantry units were scheduled 3 red cycles of approximately 5-weeks duration, 6 amber cycles of approximately 3-weeks duration, and 6 green cycles of approximately 3-weeks duration during a 52-week period.

The majority of brigade S3s, battalion S3s, battalion operations NCOs, and company commanders estimated that a company spends no more than 50% of its prime time conducting collective training, including ARTEPs (Q1-12). Indeed, when estimates were averaged, response indicated that an armor or an infantry company spends approximately 40% of its prime time conducting training. The majority of the respondents reported that a company spends 25% of its prime time preparing for collective training. Substantial portions of the remaining prime time are taken up by non-training activities--with the survey respondents estimating that a company is likely to spend between 25 and 50% of its prime time on such requirements. On the average, they perceive that a tank company spends more of its prime time preparing and conducting training than does a rifle company, with the

infantry company spending as much as 40% of its prime time engaged in non-training activities. These data, which are summarized in the figures shown below, support the contention that "even our green periods are not very solid."

Average Estimates Regarding Percentage of Prime Time a Company is Likely to Spend on Certain Activities

	Preparing Training	Conducting Training	Non-Training Activities
Tank Company	26%	43%	25%
Rifle Company	19%	38%	39%

The group of brigade S3s and battalion S3s was divided in opinion regarding the amount of worthwhile tactical training which a unit receives during support tasking. Half of them said that some individual and leadership training is accomplished. The remaining half were blunt in the assertion that no tactical training benefits are derived during support (I-74). Some suggestions were made as to how conditions might be improved. One battalion S3, for example, said that it "could be improved by using a less controlled scenario for OPFOR." Several of the respondents intimated that more tactical training could be accomplished "if we were not blocked into a support period." A battalion S3 explained that "it is hard to make use of training time if a support mission is cancelled," and a brigade S3 indicated that "it is a little difficult gearing up for field training" during a red period.

Integration of Individual and Collective Training. Although there were some who reported that individual training is an integral part of unit training programs, the survey respondents more often indicated that individual and collective training are not well integrated. At Divisions A, B, and D the interview respondents reported that individual training is supposed to take place continually (I-69). "We use a continuous multiple level individual training concept," said one of the battalion S3s. At Division C the report was that individual training is designated during red and amber cycles. Respondents at several of the divisions remarked that individual training intensifies prior to SQT and/or EIB. Said one of the battalion S3s, "we make time for these events." The survey respondents were divided in their opinions about how well their program for integrating individual and collective training is working. A number of them indicated that the program works "fairly well," but others complained that it isn't working at all.

Trainees generally supported the observation that individual and collective training are not as well integrated as they should be. Approximately 40% of the trainees reported that they do not spend enough time in individual training, though they feel that they spend plenty of time in unit tactical training (Q3-5). They perceive that this condition exists despite the fact that individual training, particularly SQT training, has a facilitative interface with collective training. Virtually all of them reported that at least "some" of what they learn when preparing for their SQT helps them with their duties as squad/crew members, and 42% of them said that "almost all" of their SQT learning helps them with their squad/crew duties (Q3-4).

Trainers and training managers were less enthusiastic than the trainees concerning the role of SQT training in the overall training program. Brigade S3s and platoon sergeants were especially critical claiming that SQT takes away more than it adds in terms of unit proficiency (Q1-10; Q2-6). One of the battalion S3s remarked that "we stress individual training during SQTs. It works OK, but we lose valuable collective training time."

Several other factors were cited as reasons why individual training isn't being integrated in the training program as intended. "It's a failure of junior NCO leadership--they are afraid to take charge," said one company commander. "The junior leaders don't have time to prepare," said a battalion S3, "so I would just as soon they not mess with it." Others said that they try to conduct individual training "anytime there is a lull," but that the system can't work because "the number of people available daily to train is low." One of the company commanders confirmed the point by remarking that "Policy or not, I have not been able to conduct any. My time is all taken by other things."

Perceptions, Use, and Suggested Revisions for the ARTEP. The ARTEP is widely used and appears to be quite well accepted. Suggested modifications were aimed at tailoring the ARTEP to fit special types of units or at providing specific scenarios and/or checklists for training tasks and for evaluation.

All but three of the officers who were interviewed indicated that their units had utilized the ARTEP (I-19). The majority of the trainees reported that they had participated in ARTEPs at least "a few times." Of these, the majority reported that there had been a post-exercise analysis following their most recent ARTEP, though many of them had not had the opportunity during the post-exercise analysis to describe what they did in the ARTEP (Q3-8).

The officers who were interviewed were generally satisfied with ARTEP tasks, conditions, and standards (I-21). Most of them indicated that

they are able to use ARTEP without additions or modifications. One of the battalion S3s, in fact, said that "it is the only thing a battalion needs--one book provides all we need to conduct field training."

Some of the officers, however, indicated needs for slight modifications or changes. Several expressed a need for more detail. "They are a little bit general" reported one company commander, they "need to include an appendix that would detail the things you're going to be graded on." A brigade commander wanted "a more detailed guide for the evaluator to use." A battalion commander agreed and commented that "you have to have more detailed feedback than 'Sat' or 'Unsat.'" Other respondents reported that they sometimes expand the ARTEP to include additional subtasks required by their units. One G3 said, "We do devise some evaluation plans for the Division Cavalry Squadron." A brigade commander said he has to make specific additions to the ARTEP in order to train combat support and headquarters' companies. A few of the respondents reported, on the other hand, that they are forced to contract the ARTEP requirements because they do not have the resources to perform tasks as they are currently written.

Preparation for external ARTEP evaluation was reported to have a "moderate" or "great" influence on the planning of field training (Q1-15). One or two respondents at various echelons indicated that training planning is "entirely" governed by preparation for external ARTEPs. Respondents at each of Divisons A, B, and C also indicated that circumstances "seldom" or only "sometimes" provide the unit opportunities to conduct prompt remedial field training (Q1-16; Q2-2). The implication is that ARTEP is *not* being utilized as a "complete" training program. It is being used to develop training exercises for "formal" evaluation, but it is not being used to develop training to overcome weaknesses discovered in evaluation. At Division C, where the policy calls only for internal ARTEPs, nearly all of the respondents indicated that opportunities are "sometimes" or "usually" provided for the unit to conduct prompt remedial field training. Thus, it may be that Division C, which does not schedule external ARTEP evaluations, is utilizing ARTEP as a more complete program.

Several officers indicated that ARTEP is thought of as a test. "My perception," said one of the brigade S3s, "is that ARTEP simply replaces ATT." This impression is no doubt nourished by the fact that the term "ARTEP" is used on the Division Master Training Calendars to mean "external ARTEP evaluation." And because "ARTEP is usually the last thing in your collective training" and is used to "evaluate what happened during the year," it gives the impression of being a report card. Enlisted men apparently share this "test" interpretation of ARTEP. Nearly a third of them reported that they had never or only once been in an ARTEP, thus suggesting that they believe ARTEP to be an event rather than a continuous training program. When asked to relate reasons for going throught their last ARTEP, the majority reported that the purpose was to "find out what

training the unit needed most" and/or "see how good the unit was" (Q3-7). Less than half of them reported that "training" was a reason for going through ARTEP.

Despite the "test-oriented" overtones, ARTEP is generally accepted as a good training tool. Officers described ARTEP as "a good concept," "a fine program," and "an excellent tool." Trainees reported that they had received "some" or "a lot" of good training in their most recent ARTEP (Q3-9). They also said that, in addition to being good for diagnosis and evaluation, ARTEP is "good" or "very good" for both individual and unit training (Q3-10).

Thus, except for the admonition that ARTEP should be kept "in the category of training/evaluation not as tests of unit proficiency," ARTEP is both accepted and appreciated. "It is," said a brigade commander, "so much better than what we had before, and the standardization of tasks allows every unit to shoot for the same thing." The consensus seems to be that, as one of the battalion commanders said, "ARTEPs are, without question, going in the right direction. Let's improve them without making any drastic changes."

Manner in Which Training Deficiencies/Needs are Identified. Trainers and training managers utilize a variety of methods to determine the state of their subordinate units' training. Nearly all of them (98%) indicated that they are heavily dependent on personal observation as a principal means for determining the state of training. The majority of them reported that they also depend "much" or "very much" on ARTEP evaluation results and qualification test results. Approximately half, company commanders and platoon leaders in particular, reported that conference with junior leaders is yet another method which they often use in determining the state of unit training (Q1-1; Q2-1).

Perhaps because they are heavily dependent on personal observation as a means for determining the state of training, senior commanders and staff make frequent field visits during prime-time training periods. Such visits occur, said the majority of platoon leaders and platoon sergeants, at least twice a week (Q2-11). Field visits from seniors are more frequent occurrences in armor than in infantry units. Infantry platoon leaders/ sergeants reported that they expect only one or two such visits each week. In three of the four armor platoons which were surveyed, the platoon leader and/or platoon sergeant indicated that visits from senior commanders and staff are daily occurrences during prime-time training periods.

Though ARTEP evaluation was indicated by the majority of trainers and training managers as a primary method for determining the state of training, 33% of the brigade S3s, battalion S3s, and company commanders claimed that they had had no ARTEP experience and could not, therefore, comment on the

detail and precision adhering in such evaluations (I-58). Those who were experienced with external ARTEP reported that they rely on the after-action analysis and on-the-spot corrections as the principal means for advising the evaluated unit of its training deficiencies (I-57). This oral advice is sometimes followed up in a written report. Approximately two-thirds of the respondents indicated that the diagnosis includes specifics of the deficiencies (I-78). They said that detail is provided in narrative and/or in checklist format. Others of the respondents, however, reported that diagnosis is frequently made in generalities. One company commander claimed, for example, that "all I have ever gotten is a "Hi-how-are-you-doing visit'." A battalion S3 said that he feels "deficiencies should be rather generally defined." Some of the respondents claimed that the precision of diagnosis sometimes depends on the proficiency of the evaluators. A company commander reported that he had "been through two external ARTEPs --the first did wonders for the company, but the second evaluation did not provide much information because the chief evaluator did not know very much." He qualified this remark, however, by adding that in his opinion "most evaluators do take their job seriously and do a very thorough critique at the end."

The survey respondents were divided in their opinions concerning the amount of detail included in instructions from higher headquarters on how to correct diagnosed deficiencies. Slightly more than half of them indicated that the instructions are "vague." But others indicated that instructions which they receive are at least "fairly detailed." A company commander said that the instructions he received following his first ARTEP were "very detailed and very constructive, indicating areas that should be concentrated on, exactly what you did wrong, etc." One of the brigade S3s said that instructions are "specific, but not detailed enough to include description of the remedial action required." Others of the respondents indicated, however, that instructions are "just a general statement as to deficiency" or are stated "in basically general terms." One platoon leader claimed, in fact, that "a lot of times the evaluator can only state that he didn't like what he saw, but can't come up with specifics--they have a 'feeling' it's not right and say 'correct it, make it better, go back to the book'."

There were mixed feelings concerning the amount of detail and specificity in evaluation reports. Some respondents at each echelon were of the opinion that detail encumbers the freedom of the unit leader. One of the platoon leaders, for example, said that instructions are "pretty detailed," almost too much at battalion level--it allows the unit leader too little freedom." One of the G3s concurred saying that his preference is for instructions which are "generally stated as this gives the unit the widest latitude to decide what remedies should be applied." But other respondents expressed a desire for more detail. "It would be better," said one of the

brigade S3s, "if instructions were related in more specific terms." One of the platoon leaders reported that he "would rather have a lot of detail --in that way I can get right to the solution of the training deficiency."

Although, as was indicated earlier, company commanders and platoon leaders indicated heavy reliance on conferences with junior leaders as a means for determining the state of unit training, it is not clear that small unit leaders are active assistants in the process of identifying training needs. One brigade commander complained, in fact, that "the company commanders continue to identify things that they would like to do and try to include them in an already full program--we try to counsel him and show him how to set priorities." At the platoon and company levels, several of the survey respondents indicated that they would "like to have more to say about what needs to be done to become more proficient." The problem, said one platoon leader, is that guidelines for training "usually apply to organizational levels higher than platoon, and it's hard to apply such guidance at my level."

Impact of Resource Availabilities and Trainer Knowledge. Shortage of resources was the factor which trainers cited most often as their major problem area. More than 70% of the platoon leaders, platoon sergeants, infantry squad leaders, and tank commanders mentioned personnel shortages, shortage of time for small unit training, shortage of available training areas, equipment shortages, or some combination thereof as specific instances of resource shortages which cause difficulties in their job as trainers (I-48). Substantial numbers of these line trainers also cited a lack of emphasis on small unit training, inexperienced or unqualified personnel, and/or diversions from training as major problem areas for the small unit trainer.

The line trainers who were interviewed seemed to feel that shortages of time and personnel are basic reasons why unit proficiency is no better than it is. Many of them indicated that there is too little time scheduled for training at the small unit level. "We usually go out with the company," said one squad leader, "and sometimes they forget about us." Others echoed his thought, claiming that they "train too much at the company level" or that they are "too busy doing higher unit FTXs where all we do is move from one place to another." "We don't get anything out of offensive training," lamented one of the tank commanders, "because all we can do is just ride around." What is needed, according to these trainers, is for the emphasis to be "on crew, platoon, company, and then up" because "each small unit has to learn to work as a team before the next higher unit can work as a team."

Other reasons which line trainers cited for there being too little time to train are that they are "over committed" and that they do "too many things that are not necessary." One of the platoon sergeants expressed a desire "to get away from the maintenance and support requirements and work

with the men." Another of the trainers agreed with the idea that they do too much support and maintenance. According to him, the result is that "our vehicles are ready--we just don't know how to use them."

Problems created by having too little time to train at the small unit level are exacerbated by personnel shortage/turbulence. Trainers indicated that they have difficulty "getting the platoon together for training," that they often fail to have "an adequate number of personnel available for training," and that there are "too many post detail and administrative appointments." One tank commander claimed that he had "never had a full crew since I've been here--right now I have a driver, myself, and a gunner, but the gunner will leave before we have our gunnery." Thus, it is not surprising to find that nearly all of the company commanders, platoon leaders, and platoon sergeants rated personnel turbulence and inadequate manning levels as "serious" or "major" obstacles to better unit training (Q1-5d,g; Q2-4d,g).

The availability of training areas/ranges did not appear to be a major encumbrance in small unit training. Senior commanders and staff reported that weapons ranges, classrooms, and areas for individual and small unit training are "usually" available when needed for training (Q1-11). They were divided in their opinions about the availability of adequate general field training areas. Approximately half of them indicated that such areas are only "sometimes" available when needed, but the other half maintained that general field training areas are "usually" available when needed for training. When asked what steps would be taken to obtain training areas or ranges in order to conduct previously unscheduled field training should a break in the schedule allow, interview respondents (brigade S3s, battalion S3s, and company commanders) indicated that it might be possible to borrow or share a training area/range with the "priority" or "green" unit (I-93). Thus the availability of existing training areas/ranges[17] appears to be no serious obstacle. Indeed, problems with training area or range availability were cited by only 3 of the 32 small unit trainers who were interviewed.

A number of the trainers did, however, indicate some concern regarding the availability of equipment for training. They reported that there are shortages of equipment and that the available equipment is in poor condition. Said one of the platoon leaders, "All of our equipment is unserviceable and we are waiting for parts to come in from the maintenance battalion."

[17] It should be noted, however, that when asked to describe their major problems, a number of trainers indicated that they experience a shortage of available training areas (I-48).

More than 40% of the platoon leaders, platoon sergeants and squad/crew leaders cited the qualifications of their personnel as a major problem area for the trainer (I-48). They complained that AIT doesn't provide good training, that personnel lack experience, and that morale and/or attitudes are bad. They also indicated several areas of technique and subject matter in which their own expertise is less than desired (I-4). Indeed, with the exception of respondents at Division B (where the qualification of junior personnel was not indicated as a problem), 65% of the trainers and training managers reported that inadequate qualification of junior personnel is a "serious" or a "major" obstacle to better unit training (Q1-5i; Q2-4i).

Line trainers reported that "the quality of EM is not up to standards," that the soldiers "lack interest, knowledge, and education," and that morale is poor. One platoon sergeant cited poor morale and bad attitudes as the reasons why "the training has been poor quality--just thrown together." A squad leader elaborated the problem saying that "we have people that don't want to work." "Training suffers," said one platoon leader, because of "the caliber of people we have to train--I spend too much time dealing with 'duds' and neglect better soldiers." The indications are, therefore, that trainers believe soldier motivation to be a root problem in the training environment.

Some consternation was expressed that today's squad/crew leaders are "weak," that they are "smart but lack initiative," and that they are "not prepared or trained." The squad leaders and crew commanders were somewhat critical of their own expertise. Approximately one-third of them indicated that lack of training in small unit training techniques, lack of expertise about specific subject matter (e.g., weapons, land navigation), and lack of familiarity with the techniques of field training in general are at least "moderate" obstacles to better unit training (I-4). Most of them felt, however, that they have sufficient knowledge about what standards of performance to expect and that, in this area at least, their level of expertise is not an obstacle to the development of better unit training. Thus, it would appear that a basic complaint against the qualifications of small unit leaders is that they lack training in the general area of "how to" conduct training. "I had to learn everything by myself--no training from people above me," said one tank commander. The ultimate consequence, as described by another tank commander is that "we get into a major field exercise, and nobody seems to know what is going on."

Trainers and training managers indicated that lack of imagination among junior personnel is, at most, a minor obstacle to better unit training. And they seemed confident that there is no lack of knowledge about exactly what changes need to be made to facilitate better unit training. But 40% of the company and platoon level leaders and staff reported that lack of *interest* on the part of their subordinates is a "serious" or a "major" obstacle to better unit training (Q1-5c,f,h; Q2-4c,f,h).

Other Obstacles to Planning, Preparing, and Conducting Unit Training. Although more than 53% of the trainers and training managers indicated that lack of interest by immediate superiors is *not* a factor which forestalls better unit training (Q1-5b; Q2-5c), nearly 70% of them reported that insufficient priority set by higher headquarters is a "serious" or a "major" reason why there is not better unit training (Q1-5a; Q2-4a). This result seems to suggest that lack of emphasis is more likely to result from competition among priorities than from any dearth of command interest in small unit training.[18]

Survey respondents[19] did not feel that requirements to comply with environmental, cultural, and energy restrictions have generated any very serious difficulties for unit trainers (I-77). According to one of the brigade S3s, "There are some restrictions on where and how we maneuver--we have to be careful not to destroy the habitat of a particular kind of woodpecker that lives in the area and there are some Indian artifacts on a ridge area which cuts off about 25% of that area." Other minor complaints suggested that some realism and/or time is lost when the use of smoke and/or weapons and illumination firing is restricted from areas near highways or is confined to the daytime hours. But, the consensus was, as indicated by one G3, that these impositions constitute "no real problem--just a management problem."

Although a number of the line trainers reported that lack of ammunition and pyrotechnics is sometimes a problem for unit training, training managers indicated that ammunition is "no problem." Several of these training managers reported that they "usually have ammunition or can get it in a few days." They indicated that the same situation exists with respect to POL, though some anticipate that POL may become a problem. At present, however, there appears to be no shortage of expendables.

The trainers and training managers were generally confident that their budget is sufficient to their needs. The majority of them averred that budget is, at most, a minor obstacle in the planning, preparation and conduct of unit training (Q1-5e; Q2-4e).

Battalion commanders and S3s reported that there are certain problems peculiar to training the combat support company. More than half of them said that combat support companies are especially susceptible to resource shortage, that its three diverse subunits must be taken into account, and

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[18] See also the section headed "Command Emphasis."

[19] Target respondents for I-77 were G3, brigade S3s, battalion S3s, company commanders.

that problems are sometimes encountered because the combat support company is considered a detail company.

Desired Changes to Army Training

Suggested Revisions in the Way Training is Managed and Conducted. Only a very few of the survey respondents seemed satisfied with training and the training environment as they now stand. The vast majority indicated that there is need for substantial change in the way training is planned, supported, and conducted. Some of the platoon and squad/crew level respondents even went so far as to say that they have difficulty "making training interesting enough to get full attention of the troops," that they "don't get anything out of training," or that they "don't like the training at all."

Stabilizing the training calendar and ruling out distractors were the factors cited most often by trainers and training managers as changes which they would like to see in the way training is planned, supported, and conducted (I-90). Other changes which they thought would benefit unit training were putting more realism into training and making the decentralization concept more of a reality.

Nearly half of the survey respondents[20] said that stabilizing the training calendar is the most desirable change that can be made in the way training is accomplished. Many of them complained that they were unable to plan or to execute vital training because the schedules generated higher up the chain of command are unstable. One of the company commanders emphasized the point as made by several of the survey respondents when he said that "the thing we need to do is to stop all the blasted changes that start all the way up at FORSCOM and work their way down to us--by the time it reaches battalion and company level, we are changing all the time."

More than one third of the respondents cited "ruling out of distractors" as the most desirable change that could be wrought in the way training is planned, supported, and conducted. They indicated that personnel turbulence and post support requirements are major sources of distraction. One battalion commander claimed that his battalion "pulled seven straight weeks of guard duty this year--and just look at the people on leave, sick call, special duty, and the other things that are going on." One platoon leader at Division A proferred the suggestion that "we need to set aside a period of time for training only--post details should be assigned for extended periods so we can *get training in during the remaining*

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[20] Target respondents for I-90 were brigade commander, brigade S3, battalion commander, battalion S3, company commander, and platoon leader.

period." His is an incisive comment on the realities of the current training environment. As he sees it, there is *no* prime-time for training. And, what is more, his opinion is that training time could, if the effort were made, be worked in *around* post support activities. The obvious implication is that it is the distractors which comprise the "framework" into which training is eventually fitted. Indeed, one brigade commander confided that "even our 'green' periods are not very solid--of interest is the fact that a 'red' period is the most solid because these events *have* to be done."

Different groups of the survey respondents tended to desire different sorts of change. Brigade and battalion commanders were more concerned with ruling out distractors, while company commanders and platoon leaders wanted to stabilize the training calendar. This result may suggest that the training calendars are "dynamic" because brigade and battalion commanders feel compelled to accommodate "distractors" in their long-range programs for training. If they could rule out the distractors they could, perhaps, provide more stability in the training calendar.

A few of the survey respondents indicated that the more rigorous application of principles of decentralization is a change that should be made in the current training environment. Some of these respondents looked to the cycle system as a means for providing uninterrupted intervals of prime-time training. Others said that longer cycles than are currently in use would facilitate decentralized prime-time training. Regardless of the scheme used to schedule time, however, the desire is, as described by one of the battalion commanders, "just to be let alone--then I would not have any problems." A brigade S3 added that he "would like to see outside influences eliminated so the battalion commander can do his job."

Finally, there were some respondents who indicated that the largest requirement for change in the training environment is the addition of more realism in training. One brigade commander said that he thinks "there are too many things we do that are not related to fighting." Another said that "to do better training we need to add realism." He said that his troops had been enthralled by REALTRAIN/SCOPES because of the realism they have, but he said there is need for "a complete representation of the battlefield --not just direct fire." Several squad/crew leaders also remarked that, at the present time, there is not enough realism in training. One of the tank commanders said that "we need something like MILES to make small unit training effective."

Perceptions and Attitudes Toward the National Training Center. One possible solution which survey respondents foresee for their current problems with distractors and lack of time is the National Training Center (NTC) concept. Most of the respondents, battalion commanders in particular, were very enthusiastic about the NTC (I-10). One brigade S3 said it would allow him to "get the troops together for training and nothing else." A brigade

commander said it is "one of the best viable solutions we have--time away from the pressures normal to a post such as meetings, phones, coordinations. When you can stay together as a unit for a month or more, you find you are an entity playing under the rules you would in combat-we need that." Another of the battalion commanders said that NTC is a good idea because "I like to get off post--to have all my troops at one time to train." He said he "would like it to include MILES, ranges, ammunition, and result-readouts quick enough to correct deficiencies." There were a few survey respondents who had some reservation regarding NTC. One battalion S3, who said that he is "opposed" to the NTC idea, indicated that he "would much prefer opportunities be made available on post." Several other respondents thought that the costs may be prohibitive. One brigade S3 said that "it would take too much time to prepare to go and then return and unpack," and a G3 commented that he "would hate to lose money for training on post." In general, however, response to the idea of a National Training Center was quite positive.

SOME IMPLICATIONS CONCERNING TACTICAL ENGAGEMENT SIMULATION

Unique Requirements for Use of the MILES in Armor and in Infantry Units

There are apparent differences in armor and infantry requirements for improved training methods and programs. Personnel in infantry units seemed at least marginally satisfied with the current state of training, were receptive and even enthusiastic about current engagement simulation training methods, and line trainers indicated confidence in their own expertise as trainers. The chief concern among infantry respondents was that they have too little time to train. They perceive that infantry units spend too much time on non-training activities and on short notice support demands. The improvement which they seek, therefore, is a "stabilized" schedule to permit more time to train. Though personnel in armor units often indicated a similar need for more training time, they reported that armor units spend relatively more time engaged in tactical collective training. But they are more dissatisfied with the current state of training than are personnel in infantry units. They judged that a substantial number of tank platoons are poorly trained, and line trainers in armor units were critical of their own expertise as trainers. These results may suggest that armor units stand in special need of improved methods for training.

Training managers for armor units, like those for infantry units, estimated that two-thirds of their platoons would be rated fair to good. But they reported that most of the remaining third of the tank platoons would be rated "poor" or "very poor." Training managers for infantry units, on the other hand, reported that most of the remaining third of the rifle platoons would be rated "very good." This difference in the reported state of training exists despite the fact that armor units spend a larger share of their time engaged in collective tactical training. Respondents in armor units estimated that tank companies can expect to spend nearly 70% of their prime time preparing and conducting collective tactical training. In contrast, rifle companies can expect to spend less than 60% of their prime time preparing and conducting collective tactical training while devoting approximately 40% of their prime time to non-training activities. While most of the training managers for infantry units reported that more than 50% of a rifle company's time is spent on short notice support demands, only a few of the training managers for armor units reported this. Thus, it would appear that infantry units achieve what is to them a more satisfactory level of training in spite of the fact that they have rather less time to train. Since there were no obvious differences in the reported qualifications of trainers or the aptitudes of trainees for armor and infantry units and no apparent difference in the availability of training resources and support, the implication is that it is "method"

rather than "time and resources" that is currently driving the results of training. Infantry units apparently obtain their objectives within the bounds of current training methods, but armor units are not satisfied with the outcomes of training using current training methods.

Though they seem to be in special need of improved training methods, personnel in armor units were not as enthusiastic about engagement simulation as were their counterparts in infantry units. Training managers at Division D reported that REALTRAIN is "never" used in their armor units though SCOPES is occasionally or even frequently used by their rifle platoons and squads. The majority of tank crew members surveyed at both Divisions A and D reported that they had never participated in REALTRAIN exercises. At Division C, where REALTRAIN is occasionally used at the small unit level, the majority of tank crew members surveyed reported that they *did not* like REALTRAIN.

Armor respondents suggested, however, that the MILES may be better suited to their needs. One tank commander claimed that they "need something like MILES to make small unit training effective" because at the present time "all we can do is ride around." The commander of one armor battalion said that his units "need tank gunnery more often than once a year" and then said that he thinks "MILES will help in this area." Indeed, the commander of an armor company praised the MILES idea because "for the first time in U.S. Army history we are going to be able to combine gunnery with tactics" in field training exercises.

Trainers and training managers in infantry units, like those in armor units, expect that MILES will help their units do better training. While the armor respondents expressed particular hope that MILES will meet their needs for improved combat gunnery training, infantry respondents generally indicated that the MILES will "enrich" their field training. Respondents in both types of units anticipate that the MILES will mitigate current problems with soldier motivation and learning. They foresee that the immediate feedback provided in MILES exercises will facilitate learning because "today's soldier has to see how he is doing--needs feedback on right and wrong actions." And they foresee that the "realism" in MILES will "create interest on the young soldier's part" and get them more "involved" in training. Thus, respondents in both infantry and armor units expect MILES to meet their needs for training methods that improve soldier motivation and facilitate learning.

As indicated earlier, infantry trainers and training managers, when compared to their armor counterparts, are more satisfied with the current state of training. They rate their platoons "fair" at the least and believe that a substantial number would be rated "very good." They appear confident about current training methods. Very few line trainers in infantry units expressed any need for additional education or guidance

in how to train. Though trainers and training managers in infantry and armor units expressed approximately the same interest in engagement simulation training methods, trainees in infantry units were slightly more enthusiastic about the benefits of REALTRAIN/SCOPES than were trainees in armor units. Armor trainees gave the methods marginal ratings, but infantry trainees indicated that REALTRAIN/SCOPES is "good" for improving individual combat skills, making soldiers want to train, finding out what training a unit needs most, and improving unit tactical performance. Thus, respondents in infantry units seem content with the currently available training methods, but they feel that infantry units are constrained by the small amount of training time afforded under present conditions.

It is perhaps for the latter reason that training managers in infantry units were especially enthusiastic about the National Training Center (NTC). More than 75% of them indicated that NTC is a "superior" idea. Respondents in armor units were a little more guarded in their enthusiasm for the NTC concept. They indicated that they "like it" but often expressed concern about the costs, anticipating that it will be "time expensive" and "will cost a lot of money." The respondents in infantry units were, however, effusive in their opinions that NTC will provide the opportunity to "get off post and have all my troops at one time to train," to "get everybody together dedicated to training," and to "go out there, draw a set of equipment, and get some realistic training accomplished." What they seemed to be saying is that, while they welcome training innovations that introduce more realism and increase soldier motivation, the thing they really need in order to achieve the desired results of training is the opportunity to do it.

Requirements for Development of Delivery Techniques and Guidance Materials

General. There are three areas in which the development of specially focused delivery techniques and/or user guidance materials can facilitate the improved utilization of engagement simulation training methods. First, attention needs to be focused on means for overcoming the resistance apparent in current attitudes regarding the usability of engagement simulation training methods. Potential users are skeptical about utilization of the MILES. They fully expect that it will be imposed on them as an additional training requirement, but they are generally pessimistic that the system can be integrated into their unit training programs. They doubt that the system will work "as advertised." Instead, they expect that the equipment will either not work at all or will break down under the ordinary stress of soldier handling. Something needs to be done to remove their doubts and provide positive indications that the MILES can fit into the unit training environment.

The second area for focus concerns the special skill training or retraining experiences which potential users feel they will need in order to cope with problems that may arise when they use new engagement simulation methods. They fear that the training equipment may be too sophisticated for the ordinary soldier, that they lack the special skills for repairing or maintaining the equipment, and that they may need refresher training or at least periods of intensified "pretraining" to be in a position to benefit from the use of complex engagement simulation methods.

The third area in which delivery techniques and guidance materials can play a facilitating role concerns the materials, resources, and assistance which potential users perceive they will need in order to initiate or implement the use of engagement simulation methods for unit tactical training. Users are concerned that they do not have the facilities or the experienced personnel to maintain and account for sophisticated training devices, and that they will not have access to informed groups or cadres who can provide assistance or instruction if and when required.

Overcoming Initial Resistance to Use of the MILES. Though tactical engagement simulation methods were generally acknowledged as technically superior and much more interesting than current unit tactical training methods, there appears to be considerable resistance to the idea that they are practical training innovations. Unprofitable experiences with REALTRAIN/SCOPES coupled with the problems of managing and conducting training in the "hostile training environment" have made potential users skeptical about the eventual utilization of MILES in CONUS Army divisions.

The realism, instant feedback, improved gunnery training, and objective casualty assessment promised in the MILES are features which survey respondents endorsed as legitimate and desirable advantages of engagement simulation training. But many of them appear convinced that resource shortages, mission turbulence, competition for training areas, and maintenance/accountability requirements for the training devices are features of the environment which will make the MILES a training method that causes more trouble than profit.

Their particular anxiety focuses on the extra taskings which they expect will be associated with the MILES training equipment. They are concerned about maintenance, storage, and security for the laser devices. They want to know "who is going to be in charge of it? How much of it is there going to be?" They are afraid that access to the equipment and accountability may create too much "administrative hassle" or that there will be too little equipment available to allow flexibility in scheduling. The anticipated consequence is that "if once a unit tries to get it to use it and can't, they give up and don't go back." Trainers and training

managers are also unconvinced that the equipment will stand up against the "rough" treatment it is likely to receive in the hands of trainees. Because they believe that the equipment is not going to work or that it will be easily incapacitated, they expect that it will "require continuous effort on our part to keep it up and more diversions of skilled labor that's already needed elsewhere." Finally, they are suspicious of "complex" methods and devices. They feel that the equipment "may be too sophisticated for the soldier to comprehend, use, and maintain." And their opinion is that "if the equipment exceeds the ability of the unit to use it with the current MOS training and requires OJT or other new skills, then we will have *another system that is going to be ineffective.*" According to one battalion commander, "the more complex a system is, the less it will be used."

The survey respondents suggested several possiblilties for allaying their doubts and anxieties. One of the most prevalent suggestions was that the MILES should be housed and maintained at the National Training Center. Respondents in infantry units were particularly keen on this idea. One of their battalion S3s commented that "MILES should be located at NTC--so long as equipment is on post we will not use it because division will have us doing things they want us to do." And a battalion commander said that he thought they could do "a better job of setting up MILES at NTC." A second solution which some respondents suggested was to "add a post maintenance component with trained personnel." Others suggested that "perhaps TASO will maintain the equipment," but still others were concerned that "TASO isn't geared for the system" or that "if it is held at TASO level, it will be forgotten." Many of the survey respondents thought that a specialized cadre to store, maintain, and account for the equipment is the desirable solution to problems anticipated with MILES equipment. Still another possibility is that "exposure will sell the product." One platoon leader who had experienced MILES "out at CDEC" reported that "it had less problems than I thought we would have. The maintenance people out there kept things going and if that can be the case, then the maintenance problem will be cured."

The implication of these findings is that the "advertising" and delivery techniques for MILES will need to take into account the problems anticipated and the solutions suggested for overcoming user resistance concerning the usability of the MILES equipment.

Requirements for Specialized Training to Facilitate Use of the MILES. Since MILES is understood to be a complex and sophisticated training system, potential users are aware that special training or retraining experiences will be required to prepare both trainers and trainees for effective use of the system. Survey respondents indicated that users will need to have already attained some fundamental training expertise before they can benefit from engagement simulation exercises, that

special training will be required to teach personnel how to use the laser equipment, and that trainers will need special instruction in how to train using engagement simulation methods.

Several of the survey respondents commented that units would need to be trained to squad or platoon levels, and that individuals would need to be already proficient in SQT tasks before they would be able to derive maximum benefits from engagement simulation training. Other respondents suggested that training in particular skills such as gunnery would need to be intensified just prior to use of engagement simulation. The implication is, therefore, that the use of engagement simulation methods needs to be timed to allow the unit to achieve these minimum proficiencies before participating in engagement simulation exercises.

The survey respondents acknowledged that "time will be needed to train people how to use MILES." The problems involved in training people to use REALTRAIN/SCOPES were reported as major constraints on the use of these methods. It is, therefore, likely that users will expect considerable assistance in this phase of tactical engagement simulation implementation. A number of the trainers and training managers, in fact, specificlly expressed concern about access to specially trained personnel to maintain the equipment.

Though those trainers and training managers who had learned about REALTRAIN/SCOPES through the assistance of the REALTRAIN Mobile Training Team or through service schools rated their training as excellent, the most frequent source for learning about REALTRAIN/SCOPES was on-the-job experience or doctrinal publications (TCs). It was not surprising, therefore, to find that REALTRAIN/SCOPES exercises are often conducted without After Action Reviews or "without using the whole package." The implication seems to be that courses of formal instruction in how to use MILES and/or special teams or cadres need to be established in order to ensure that MILES is used as intended.

Indeed, since fewer than 30% of the officers and NCOs surveyed reported that they had learned about REALTRAIN/SCOPES in service schools, it would appear that formal instruction on TES methods has not been visibly integrated into the schools' curricula. If the schools are to serve as a constant source of prepared MILES trainers and controllers, then it will be necessary to take steps to ensure that the schools give the MILES higher visibility than was accorded for REALTRAIN/SCOPES.

It seems likely that small unit trainers will need some "refresher" training in how to train as well as requiring specialized training regarding the use of MILES. Approximately half of the small unit trainers participating in the survey expressed a need for more guidance or instruction in their job as trainers. This response was more frequent among trainers in armor units than among those in infantry units. Tank platoon leaders and platoon sergeants reported that they need to know more about small unit training techniques, about specific subject matters, and about techniques of field training in general. The implication is that courses of instruction in how to train using engagement simulation methods for armor units may be more effective if they include material to cover these fundamentals as well as the special or advanced material on utilizing tactical engagement simulation techniques.

Since platoon leaders, platoon sergeants, and tank commanders in armor units were also more likely to express a need for more "hands-on" or "practical" types of training for trainers, they may be particularly receptive to hands-on formats in tactical engagement simulation instruction which is prepared for them.

Although small unit trainers in infantry units appeared to be more comfortable with their current expertise in how to train, some of them indicated that there should be more realism and more training aids for trainer training. These comments may indicate that they too will be particularly receptive to hands-on formats for instruction in how to train using tactical engagement simulation methods.

Requirements for Materials and Assistance to Facilitate Use of the MILES. Survey respondents indicated a number of material resources which will be required in the full utilization of tactical engagement simulation training methods. Since they reported that the availability of suitable field training areas and the availability of ammunition and pyrotechnics were sources of special difficulty in planning and preparing for REALTRAIN/SCOPES exercises, it is reasonable to suppose that these resources will also have special impact on the MILES. Indeed, a few respondents indicated concern that field training areas available on post may not be suitable for MILES exercises. They mentioned that they expect "some trouble with trees and foliage" or that they have "very short engagement ranges." The material resource about which they showed the greatest anxiety, however, is the MILES equipment itself. They are concerned that the equipment will not be available when needed for training and/or that it will not work when they are able to get it. One company commander explained that "the crews are going to have to have the feeling that MILES is going to work all the time or we will have to force them to use it." Other respondents anticipate that they are going to "end up with a bunch of lasers that don't work" or that the "prescribed Load List with the equipment will be inadequate."

In conjunction with their anxiety about the availability and durability of the MILES devices, trainers and training managers were concerned that they will not have the support they need in order to store and maintain the equipment. More than 70 percent of them perceive that there will be problems with garrison logistics for MILES. They cited maintenance of the equipment as the central issue but also anticipate problems with drawing, storing, and securing the equipment. To cope with these problems, they feel that they will need special support. One brigade commander summed up the situation saying that "MILES has tremendous potential, (but) it will require special people to run and maintain it--if you saddle a unit with all the requirements, MILES will go the way of REALTRAIN."

It also appears that units will need special assistance in the preparation, conduct and evaluation of engagement simulation exercises. A substantial number of line trainers reported that they need additional education and/or guidance concerning small unit and general field training techniques. Since they also indicated that REALTRAIN/SCOPES exercises are harder to prepare and harder to run than conventional field training exercises, it seems likely that they will require field assistance in their initial attempts to prepare and conduct exercises utilizing the MILES.

At the present time, however, none of the divisions surveyed has a group or cadre that could provide this assistance locally. G3s at each division provided an emphatic "no" in response to the question asking whether they have a cadre or section that could take responsibility for managing the employment of MILES in their divisions. Others of the survey respondents suggested various ways in which the MILES might be managed. Some thought that TASO should have primary responsibility for the equipment. Others thought that MILES equipment should be held at the unit level. It was frequently suggested that "NTC would be the ideal place for MILES." In all of these suggestions, there is the implicit statement that additional field implementation support is essential to utilization of the MILES.

Relationship of Training Practices to the Use of the MILES

General. There are two general ways in which current practices in the management, support, and execution of unit training appear to be incompatible with the use of tactical engagement simulation techniques. First, it appears that the current practices for programming activities and assigning task priorities cannot provide the time and personnel which are required in the full utilization of tactical engagement simulation training methods. Indeed, there is a ubiquitous complaint that current practices provide too little time and too few personnel even to conduct collective training utilizing conventional training methods. Since tactical engagement simulation methods are known to require extra time and specially qualified personnel, this management problem can be expected to have noticeable negative impact on the use of engagement simulation techniques. The second way in which current practices appear to be incompatible with the use of tactical engagement simulation is that they provide no incentives for the extra effort which is required to implement new training systems. On the contrary, the current practice, according to the survey respondents, is to "impose" new systems as "added requirements." This negative approach, together with the observation that trainers and training managers at each echelon perceive that training is *not* the real number one priority of their superiors, makes it seem likely that when commanders down the chain of command are forced to

"ignore some requirements" because there are too many of them, it will be this "added" requirement--i.e., the use of engagement simulation techniques--which is allowed to "fly out the window."

The Battalion Training Management System (BTMS) as a Solution for Problems Affecting the Use of the MILES. Comments made by battalion commanders suggest that they do not feel that they are free to determine and pursue their own programs based on their own assessment of needs. At Divisions A and B, battalion commanders claimed that "the overall scheme is dictated by higher headquarters" or that they "get a lot of guidance" and/or work "within the constraints placed by higher headquarters." At Divisions C and D, training management appeared to be slightly more decentralized. At these divisions, the brigade and battalion commanders commented that they have total or "almost total" freedom to decide what training is needed. They also indicated (and were confirmed by the company commanders) that the battalion commanders "decentralize" or coordinate with company commanders in determining the plans for training. At both these divisions, however, the complaint was lodged that "freedom to decide on training just isn't enough when you consider other requirements." According to a battalion commander at Division D, "what we say we are going to do and what we carry out are two very different things." It would appear, therefore, that rather than selecting training missions based on Soldier's Manuals, ARTEP, and operational missions, the battalion commander's task is primarily to assign priorities to requirements imposed by higher organizational levels. "What I do," said one of the battalion commanders, "is place emphasis on things with priority--this emphasis normally comes down from higher headquarters."

The survey data also suggest that battalion commanders believe they have little freedom or responsibility for allocating time or facilities. Only one of the four G3s who were interviewed indicated that they "leave it up to the battalion commander" to plan for different types of maneuver-arms elements in preparing the organization's Master Training Calendar. One of the G3s claimed that "decentralization has been the hallmark of our training," but then avowed that "resources must be centrally controlled--time/resources drive the results you achieve." The implication is that battalion commanders do not feel that they are in a position to allocate time and provide the resources that they feel are required to achieve results.

There is some reason to suspect that training appears to be more centralized than is intended because the division and brigade level personnel do not believe that their control of scheduling and resources robs the battalion level of its freedom to manage training. For example, a brigade commander at Division A claimed that his units have no problem meeting all the requirements imposed by higher headquarters because "we

have a quarterly briefing in which each battalion presents a briefing to the assistant division commander, and all company commanders are present." Yet one of his battalion commanders reported that his unit is not able to meet all the requirements and that he is forced to "ignore some of them and establish my own priorities." He added that "they don't check enough to catch me anyway." One wonders whether he "checks" enough to "catch" his company commander who says that he must "set priorities on what I think needs to be accomplished" and that "you just have to let certain things fly out the window." The task of training management, thus, looks different to persons at different levels in the hierarchy. One of the brigade commanders captured the essence of this observation when he said of his subordinate units, "I think they feel the training schedule is turbulent and, at times, feel overcommitted; but *I* don't feel that they are as overcommitted as they do."

Implementation of the BTMS, however, should improve these circumstances. If the BTMS works to provide battalion commanders with the resources and the freedom that they feel are required to develop and pursue their own program based on their own assessed needs, it can be hoped that they will have the time and the resources to make maximum use of tactical engagement simulation in accomplishing their training objectives.

Incentives for Utilization of the MILES. Current practices and conditions in Army unit training provide little incentive for the use of tactical engagement simulation. The fact that tactical engagement simulation techniques are known to provide results that are far superior to those obtained with conventional combat training methods ought, of course, to be a built-in incentive. That would probably be the case if trainers and training managers believed that training was the real number one priority in today's Army. But personnel at all echelons reported that their superiors do not give training the emphasis it deserves and that, in fact, training trails a list of priorities that includes providing replacements for USAREUR units, housekeeping and post support activities, vehicle maintenance, and support for reserve components. Given this perspective, the prudent course for trainers and training managers is to select and utilize training methods with low costs in terms of time and personnel. The time and personnel savings can then be spent on activities which have priorities higher than that for training. In this scheme, the effectiveness of training is at most a secondary consideration.

Today's trainers and training managers are not, of course, so calculating that they choose training methods on the basis of cost with no regard for the possible benefits. On the contrary, the individuals participating in the survey indicated that effective training is a

mission to which they personally attach high importance. They showed that they are very much interested in improving the conditions and the outcomes of combat training. But they reported that both the amount and the quality of training which they are able to accomplish is severely constrained by factors controlled at "higher organizational levels." Commanders at battalion level and down do not feel that they have the freedom to plan and carry out the training they need. They are constrained by overcommitment, short-notice requirements, and personnel shortages. They have neither the time nor the support that would allow them to choose a training method that is time-and-personnel-expensive even when the training benefits of that method are greatly superior to those deriving from "cheaper" methods. When you cannot afford a thing, it does not matter that it would make you stronger, more effective, and might even save your life someday. The tremendous training potential of REALTRAIN/SCOPES training methods was no incentive for their utilization because they cost more time and more personnel than the budget would allow.

The survey respondents expect that the MILES, which is a more fully automated system, will require fewer assets than the costly REALTRAIN/SCOPES methods. They indicated that this reduction in costs makes the MILES a more attractive training innovation. Since, however, they also indicated that they have no "extra" time or resources to devote to training, it is possible that even large reductions in the costs may not bring the MILES within the price range of most units.

Short of redesigning the environment to make training the true "top priority" activity and thereby making the benefits available from tactical engagement simulation methods a major incentive for their use, there are some "marketing" alternatives which could provide incentives for tactical engagement simulation utilization.

One possibility is to make tactical engagement simulation training a periodically scheduled "event." At the present time external ARTEP, SQT, and EIB are scheduled as major calendar events. Survey respondents indicate that training "intensifies" in the period preceding these events. The implication is that events provide the necessary incentive to complete the preparatory training that will make the event a success (i.e., that will allow units to "pass"). If the MILES training were scheduled as an event either in conjunction with external ARTEP or as an independent event, it seems likely that units would devote their time to the necessary preparations and intermediate training that would allow maximum benefit during the "event."

Tracking the Products and Programs of the Training Revolution. Perhaps the broadest implication in the current survey data is that there is need for a method or scheme to track the progress of training innovations as they are applied in the training environment. The tremendous Army investment in research, development, and operations testing of training innovations has succeeded in developing innovations which look and sound like excellent solutions to the problems they have been designed to solve. There is no doubt that tactical engagement simulation methods are far superior to conventional field tactical training methods. Other innovations, such as ARTEP, have been endorsed as major improvements over their predecessors. But these innovations have not been integrated into the training environment in the ways intended. They have not been systematically applied to the problems for which they were developed. Current tactical engagement simulation methods are seldom used and when used are often accomplished "in concept" but without using "the whole package." ARTEP is being treated as a new and improved version of the old ATT. The consequence is that valuable training innovations are underutilized in the current training environment.

There are a variety of reasons why potentially useful training innovations might not be successfully implemented into unit activities: An obvious problem encountered in the implementation of REALTRAIN/SCOPES, for example, is that the potential users believe that the methods require more time, personnel, and other assets than are available for most field training exercises. An apparent problem in the implementation of the ARTEP is that the trainers and training managers seem to have adapted it to their needs for a standardized accountability system rather than using it as a complete program for training, evaluation, diagnosis, and training to correct diagnosed deficiencies. Thus, innovations are sometimes rejected out of hand, as has been the case with REALTRAIN/SCOPES, and others are degraded in use by foreseeable but previously unrecognized problems and requirements which arise in the process of implementing the innovation.

The Army's research and development community has made a concerted effort to determine what training problems exist and to develop fine solutions for those problems. But the inevitable difficulties which arise when innovations are introduced into a crowded and stressful environment have been largely ignored. Such systems as the Life Cycle System Management Model follow innovations only until they are delivered to the user unit. What is now needed is a concerted effort to monitor and interface problem solutions with conditions that exist in the unit. There needs to be a systematic way to anticipate and cope with problems that are likely to arise in the process of introducing change. What seems to be required is a new concept of training systems development which includes a means for tracking and intervening where necessary throughout the development, delivery, implementation, and eventual institutionalization of innovation in its user environment.