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ARI TECHNICAL REPORT
TR-79-A25

Improved ARTEP Methods for Unit Evaluation

VOLUME VII: EXECUTIVE SUMMARY

by

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LEVEL #1

A075663

Vol. VII

AD A 076957

April 1979

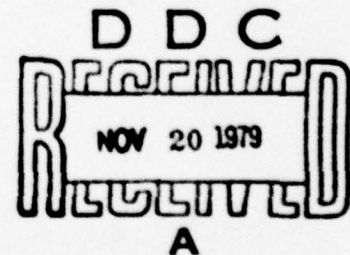
Contract DAHC 19-77-C-0001
Project: PR No. 76-68-PERI-OU
Engagement Simulation Technical Area

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Prepared for



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Unclassified

(18) ARI

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER TR-79-A25	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) IMPROVED ARTEP METHODS FOR UNIT EVALUATION VOLUME VII: EXECUTIVE SUMMARY	5. TYPE OF REPORT & PERIOD COVERED Final Report 8 Nov 76 - 30 Apr 79	6. AUTHORING OR PERFORMING ORGANIZATION NUMBER HSR-RR-79/4-Ca
7. AUTHOR M. Dean Havron, Robert G. Wanschura (Army Research Institute)	8. CONTRACT OR GRANT NUMBER(s) DAHC 9-77-C-0001	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Human Sciences Research, Inc. 7710 Old Springhouse Road McLean, Virginia 22102	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 2Q163743A773	
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Training and Doctrine Command (TRADOC) Fort Monroe, VA 23651	12. REPORT DATE 11 Apr 79	
13. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) U.S. Army Research Institute for the Behavioral and Social Sciences, 5001 Eisenhower Avenue Alexandria, Virginia 22333	14. SECURITY CLASS. (of this report) Unclassified	
15. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation. Volume VII, Executive Summary.		
18. SUPPLEMENTARY NOTES Research monitored technically by Robert G. Wanschura, Engagement Simulation Technical Area, Army Research Institute		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Army Training and Evaluation Program (ARTEP) Battle Simulations Tank/Mechanized Infantry ARTEP 71-2 Engagement Simulation Training Management Training Evaluation Field Exercise Evaluation/Control		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes a two phase, 28-month contract research effort concerning the ARTEP for tank/mechanized infantry units. Products and processes of the research are described. Products are represented by seven report documents, including: ARTEP implementation problem diagnosis and issue identification, analysis of issues and concepts for solution, exercise planning guidance, evaluator/controller training, analysis of alternative training settings in the tank/mechanized infantry battalion training environment, and integration of engagement simulation training methods into unit evaluation focused field		

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IMPROVED ARTEP METHODS FOR UNIT EVALUATION

Army Needs and Research Objectives

A two-phase study of an Army Training and Evaluation Program (ARTEP) for tank/mechanized infantry units¹ was conducted by Human Sciences Research (HSR) for the Army Research Institute (ARI). The purposes of the study were:

- To identify and examine major issues involved in the current implementation of the Army Training and Evaluation Program (ARTEP).
- To provide guidance, products, and recommendations for resolution of the issues identified.

The ARTEP consists of concepts, guidance, and training materials which together embrace all Army training. Guidance and training materials for field users are still being refined. ARTEP manuals and specifically T&E Outlines replace the Army Training Programs which, since World War II, provided the basic mission format for unit field training. The current ARTEP T&E Outlines are performance-oriented. They are designed to provide settings which more realistically represent realities of the modern battlefield and changes in tactics required to better exploit capabilities of new weaponry.

The transition to ARTEP is still in progress. Transitions from one system and set of concepts to another is never easy.² The study sought to provide guidance and training materials that would assist in the transition, helping to assure that the concepts upon which ARTEP is based are wisely and imaginatively applied in unit field training.

¹Contract DAHC 19-77-C-0001, Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation.

²Major General John W. Seigle, "The Army Training System: A Status Report," DCST, HQ TRADOC, AUSA Convention, October 1977.

Results of the study are presented in seven separate report volumes. A scheme showing the work steps, the reports resulting from these steps, and the report titles is shown in Chart 1.

Problem Diagnosis and Issue Identification--Volume I

Methodology

An iterative case study method was used to identify relevant issues and problems. Cases consisted of observations of the conduct of field exercises for battalions drawn from three divisions, and discussions with key planners and supervisors of unit training in a fourth division. This permitted documentation of current field practices in implementation of ARTEP. Comparison of cases permitted identification of recurrent problems.

Along with observation of cases, we interviewed cognizant officers at TRADOC/FORSCOM schools and operational divisions. Two symposia on ARTEP were held. Concepts and methods from the scientific literature (learning theory, systems analysis, psychometric methods, etc.) were reviewed to determine their relevance to problems encountered and for their contributions to solutions. Together, the scientific literature and military sources suggested directions for recommended solutions.

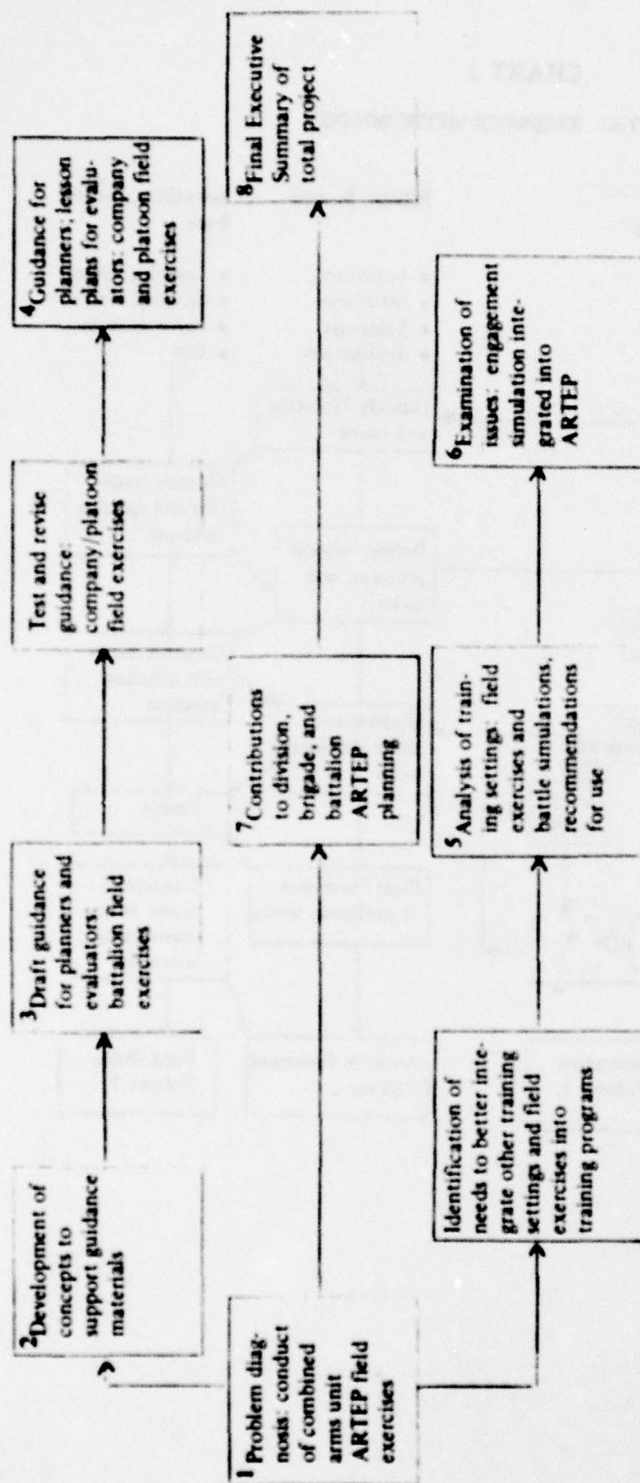
A schematic showing research methodology and products from the first phase of study is presented as Chart 2.

Classification of Issues/Problems

Issues and problems were classified as shown in four columns in Chart 3; they are presented as questions needing resolution. While the four columns do not exactly map the formal functions of Army organizations, they roughly correspond to roles and responsibilities of Army echelons from TRADOC/FORSCOM down in descending order.

- **Column I.** These issues pertain to concepts and guidances which emanate from TRADOC/FORSCOM.

CHART 1: Studies of ARTEP: Steps and Research Products



NOTE: Numbered boxes refer to reports, as listed below.

1. Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume I, Executive Summary: Study Design and Field Research. ARI Technical Report TR-78-A26. November 1978.
2. Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume II, Analysis. ARI Technical Report TR-78-A26.
3. Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume III, Field Guidance. ARI Technical Report TR-78-A26.
4. Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume IV, Guidance for Planning and Conduct of Company-Level Field Exercises. Final Technical Report. Human Sciences Research, Inc., McLean, Virginia: 30 April 1979.
5. Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume V, Analysis of Training Settings. Final Technical Report, Human Sciences Research, Inc., McLean, Virginia: 30 April 1979.
6. Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume VI, Conventional ARTEP Missions and Engagement Simulations: An Examination of Options. Final Technical Report. Human Sciences Research, Inc., McLean, Virginia: 30 April 1979.
7. An Application of Organizational and Managerial Principles as an Improvement to the Current Army Training and Evaluation Program for the Mechanized Infantry. Thesis by CPTs D. P. George and R. L. Gerding. Naval Post Graduate School, Monterey, California: December 1978.
8. Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume VII, Executive Summary. Final Technical Report. Human Sciences Research, Inc., McLean, Virginia: 30 April 1979.

SCHEMATIC: RESEARCH METHODOLOGY



CHART 3: Classification of Major Issues in the Refinement of Tank and Mechanized Infantry Task Force (ARTEP) Evaluations

I. ARTEP System Concept Issues and Initial Applications	II. Evaluation Exercise Preparation and Conduct Issues	III. Evaluation Methodological Issues	IV. Results Formulation, Communication and Use Issues
A. Interpretation of Key ARTEP System Concepts - How operationally define "performance-oriented" training? - How op. def. "mission/task oriented" training? - How op. def. "concurrent/multiechelon" training? - What are the appropriate forms and degrees of "decentralization"? (Also, "realism," "austerity," "readiness," etc.). B. Evaluation as ARTEP Tool - How specify individual unit evaluation requirements? - How much relative emphasis and support for evaluations? - How to use eval. as training tool rather than proficiency test? - How balance evaluation and training goals during the field exercise? C. Unit Contextual Issues - How do TO&E and operational missions shape the evaluation process? - How do the nature and scope of other missions shape the evaluation process? - How do parent unit attributes shape the evaluation process? - How do local training facilities shape the evaluation process? - How do material asset constraints shape the evaluation process? - How do unit proficiency levels and ARTEP evaluation shape the process? D. Evaluation Task Assignment Issues - What are the appropriate degrees and modes of involvement of different command/staff echelons in the preparatory phase? - In the exercise conduct phase? - In the results utilization phase?	A. Basic Field Exercise Format - Which, how many units in what roles? - Where place evaluation priorities and emphasis? - If, when, and how to conduct "sub-unit" evaluations? B. Scenario Construction - Which, how many missions? - How to sequence and coordinate missions? - How shape scenario and missions overall for realism, doctrinal soundness and evaluation validity? C. Tactical Problem Control - What is the appropriate control element organization and procedure? - Engagement simulation: what basic approach to represent force ratios and weapons effects? - Engagement simulation: how employ specific simulation devices and techniques? - How play casualties and equipment losses? D. Administrative Problem Control - How to provide for range and safety requirements? - How incorporate on-line training activities, if any? - How provide for efficient administrative redeployment of evaluated units, etc.?	A. Evaluation Group Attributes - What size, composition and organization for each E/C group? - How to select and train? - What other assets to provide? - How coordinate evaluation and control responsibilities? B. Evaluation Criteria - Reference T&EOs: to what extent (a) explain or expand (b) fill gaps (c) guide rating aggregation? - What other criteria materials should be used, when, where? - How provide above materials on-line or elsewhere? C. Observation Guidance and Procedure - Where position to make observations? - By what means should observations be made? - What types of group coordination and guidance are required during EX? D. Rating Procedures - How distinguish and systematize observation/recording/rating behavior? - How coordinate inter-evaluator observation/recording/rating? - How guide procedures for overall unit mission and final formal evaluation ratings?	A. Results Formulation - What are the appropriate roles for each evaluation team member in the formulation process? - Should the same or "tailored" formulations be provided different users - units, command echelons, staffs? - How do the different chosen media affect content and formulation process? B. Results Communication - What are the appropriate audiences? - What is the optimal mix of feedback "loop" sizes for each audience? - What is the appropriate media mix for each audience? C. Results Use - What are the appropriate degrees and modes of involvement of different command/staff/unit echelons in interpreting results for training purposes? - For applying results to training schedules and procedures? - For conducting and evaluating revised training programs?

- **Column II.** This column describes options available to senior commanders and training managers in planning and conducting field exercises.
- **Column III.** Entries in this column raise questions as to the staffing of evaluator teams, the criteria they use to evaluate, and guidance needed to effectively use criteria.
- **Column IV.** This column raises questions that bear on integration of results from evaluations, the use of results to critique units, and applications of results as diagnostic information for training managers.

Problem Areas; Examples

The initial orientation of the study placed heavy emphasis on improvement of uses of mission T&E Outlines (T&EOs) as instruments for evaluation of performance. While problems exist in the format and use of these instruments, these problems occur within a broader mis of issues and problems. Further, problems of evaluation cannot be resolved without attention to these broader interrelated issues and problem areas. Problems are documented and discussed in the first project report.³ Among major problem areas which, once identified, help to better define research directions are these:

1. **Evaluator Training.** Very little time was devoted to evaluator training. Many evaluators had no more experience than men they evaluated. Evaluator team work is critical in company and battalion field exercises. In no instance did we find instructions bearing on how evaluators should act as a team.
2. **The "Integrated" ARTEP.** Insufficient evaluator training led to further complications in two divisions that attempted to use the so-called "integrated" ARTEP. (Here, two battalions oppose one another.) Since both battalions were given freedom, interactions between battalions led to events that were

³*Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume 1, Executive Summary: Study Design and Field Research.* ARI Technical Report TR-78-A26. November 1978.

not readily predictable. Hence, the T&E Outlines, which presume a predetermined sequence of activities over time, were of limited value. Also, the integrated ARTEP for mobile units in the hands of controller/evaluators *not trained to act as a team* results in frequent muzzle-to-muzzle confrontations. Elements must be disentangled with a resulting loss of training time and tactical realism.

3. Principles of Learning. ARTEP missions are to be used primarily for training, diagnosis, and remedy of performance errors; however, the way in which they were administered is incompatible with well-established principles of learning. Attempts to include as many missions as possible within a three-day exercise provided junior leaders all too little time to practice troop leading procedures. Typically, no critiques were held during the three days; this allowed incorrect actions to be practiced and repeated. (Some evaluators held critiques on an "ad hoc" basis, reportedly with good results.)
4. Integration of Ratings for Diagnosis. With some few exceptions, methods used to integrate ratings did not keep tab of the types of errors/omissions specific battalion elements had made. High costs of conducting battalion field exercises and the existence of other settings in which battalion elements can be trained together revealed a need to examine the merits of alternative training settings (in particular battle simulations) as training instruments.
5. T&EO Formats. Many items in current versions of T&EO formats cram together several parameters and call for a single rating—satisfactory or unsatisfactory. As a result, in critiques, unless evaluators have a most exceptional memory, they cannot "recapture" many of the specific errors/omissions observed.

The above are among major issues/problems which were more or less common to all battalion field exercises observed. They provided a point of departure for further work.

Development of Guiding Concepts—Volume II

Faulty practices in planning and administering field exercises can manifest themselves in a variety of different ways. Guidance, we felt, should consist of more than a long detailed list of "do's" and "don'ts." This belief led to search for broad concepts and principles which, if properly understood by training managers and evaluators, could serve two purposes:

1. They could help training managers and evaluators to better appreciate reasons for specific guidance provided.
2. They could help training managers to formulate procedures conducive to training and effective learning for the great variety of situations they face periodically, but which are not covered by specific guidance.

Accordingly, a document was prepared⁴ which developed guiding concepts and principles. Of these, four are central:

1. Principles Derived from Learning Theory. These bear on feedback to trainees and feedback requirements: promptness; comprehensiveness; validity; credibility; and the manner in which given.
2. Principles Derived from Systems Operations/Analyses. Principles from systems analyses apply to the operations of the battalion in training, OPFOR, and evaluator teams each as a system, and to interactions between these systems in the field. Applied to the battalion in training, they provide evaluators clues as to what to look for. Applied to the evaluator team, they help to prescribe team functions—evaluations, control, safety, administrative responsibilities—and how these must be integrated by coordination among team members.
3. Job Task Analysis and Psychometrics. These technical concepts and tools help to develop training objectives and tasks, and to assess the adequacy of those currently provided in training materials. Psychometrics can help to refine T&E items so evaluators can make more thorough and valid records of field performance.
4. Tactical Theory. Tactical theory is introduced as an antidote to the tendency of task analysts and psychometricians to develop extensive, over-detailed check lists. The task analytic approach is well suited in Instructional System Development for hands-on tasks that can be ordered in invariant sequences. It is less well adapted to description of decision-making incident to direction provided by a battalion staff. As an example, unit A develops a "best" plan of attack. If opposing unit B guesses this plan exactly, unit A's plan of attack can no longer be regarded as "best." Applications of tactical concepts have many ramifications. They argue for providing units in training opportunities to try out innovative solutions. They argue for

⁴*Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume II, Analysis.* ARI Technical Report TR-78-A26. November 1978.

training evaluations not to be rigidly tied to T&EO items, but to record critical actions that may not be anticipated by T&E item formats. They argue that evaluator/trainers in holding critiques should encourage discussion of the merits of alternative courses of action rather than insisting on one rigid "school solution."

The above concepts provided guidance for development of prototype training materials.

Development and Checkout of Guidance Materials for Conduct of Field Exercises—Volumes III & IV

Guidance materials were developed for two audiences: exercise planners and evaluator/controller (E/C) teams. A first attempt to draft such guidance for battalion evaluators was made hastily.⁵ It does not provide adequate coverage of functions of certain key elements of battalion operations; in particular, for operations of the battalion staff to include fire support coordination with artillery and air. It is not recommended for use in its present form.

The second study phase translated the initial draft into guidance for company and platoon-level evaluations. The revised materials were reviewed with personnel of the 80th Maneuver Training Command (MTC) and revised. Guidance was then checked further by observations of personnel of the 80th MTC in their conduct of platoon-level exercises.

The guidance that evolved is directed to company and platoon-level mechanized infantry exercises. It is reported in three modules: the rationale for coverage; a guide for exercise planners, lesson plans for controller/evaluators; and an annex.⁶ The first module shows how Phase I field observations, principles of learning, and good pedagogy combined to define the content and approach used in the second and third modules.

⁵*Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume III, Field Guidance.* ARI Technical Report TR-78-A28. November 1978.

⁶*Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume IV, Guidance for Planning and Conduct of Company-Level Field Exercises.* Technical Final Report. Human Sciences Research, Inc., McLean, Virginia: 30 April 1979.

The second module, a *Command Planning Guide*, is designed for use by battalion level commanders and training managers who must design, plan for, conduct, and supervise company and platoon-level field exercises. It sets forth the sequence of functions to be performed from initial planning to conduct of post-exercise reviews for the planning/evaluation team. Several pertinent points are stressed:

1. Basic ARTEP principles of training and evaluation are reviewed. The importance of exploiting both principles in all field exercises is stressed.
2. Initial Planning/Evaluation Plan Development. The requirement for accurately determining the training/evaluation needs of the unit is emphasized so that exercise objectives can be established. The process of integrating training/evaluation objectives into mission and scenario development is reviewed. Early designation/selection of evaluator/controllers is emphasized.
3. Planning for Evaluator School. This section stresses the importance of well-trained evaluators. It explains that the POI, as constructed, involves much actual planning for the exercise, and integrates the scenario, OP OPORTDs, and sequence of events prepared by the planning committee.
4. Monitoring the Evaluation System. The need for monitoring performance of the evaluation team is stressed. Responsibility for insuring adequate evaluations involves giving good evaluator training, supervision of evaluators during the exercise, and conducting post-exercise reviews for the evaluator team to determine how future evaluation efforts can be improved.

The third module contains the Program of Instruction to be used in evaluator/controller training. The Program of Instruction (POI) has 15 separate lesson plan modules, complete with narratives, graphics, and examples of materials needed to conduct training. The modules are designed from a functional, task-oriented perspective. They are heavily oriented to practical exercises where evaluators actually accomplish their planning required for the exercise. The lesson plan modules have not been field-tested, but represent the culmination of several revisions, incorporating comments from Active Army elements.

Titles and major thrusts of the lesson plans are:

- **Introduction to ARTEP Exercise Objectives.** The emphasis is on training benefits in evaluation exercises and the importance of performance feedback to unit proficiency.
- **Exercise Function and Structure.** The purpose of the exercise, the role of the evaluator/controller team in the exercise, and the need for evaluator/controller teamwork is explained.
- **Introduction to Evaluator/Controller Duties.** This defines and describes the ten major duties of evaluator/controllers and shows how all duties relate to training and evaluation.
- **Evaluator/Controllers Plan for Performing Unit Actions.** Uses an exercise scenario to help evaluator/controllers anticipate critical behaviors of units and unit leaders.
- **Methods of Control.** Explains why control is necessary, when to use it, and permits evaluator/controllers to develop a control plan for their exercise.
- **Communications.** Evaluator/controllers are given communications nets and must develop plans for their communication with each other throughout the exercise.
- **Simulation.** This explains the use of simulation to control engagements, movement of units, and casualty assessment, then permits evaluator/controllers to develop their simulation plan for the exercise.
- **Observing/Evaluating Performance.** Explains how to use T&E Mission Outlines, what actions should be observed, how to evaluate observed actions and apply T&E Outline standards.
- **Preparation and Conduct of Critiques.** Explains the importance of critiques to learning, how to encourage performers to critique and learn from it, points to cover and procedures to follow in giving the critique.
- **Data Analysis and Report Preparation.** Details the critical importance of diagnosing performance deficiencies and making training recommendations. Explains how to "replay" the exercise to make diagnoses, and emphasizes completing T&EO ratings, as well as how to score difficult items.
- **Post-Exercise Critique.** This emphasizes using results from data analysis to provide more feedback to unit leaders/trainers, and also emphasizes positive use of evaluation results for future training.

- Exercise and Terrain Rehearsal. This guides evaluator/controllers through map and terrain rehearsals with their completed plans to check for and resolve problems before the exercise starts.

Guidance Materials for Division/Brigade and Battalion

Concurrently with the above work, CPTs D. P. George and R. L. Gerding, while attending the Naval Post Graduate School, incorporated much of the material from our Phase I reports into a guidance document for training at division, brigade and battalion levels. Working with these and TRADOC sources, HSR scientists have provided suggestions and inputs to their documents.

An Examination of Alternative Training Settings—Volume V

Our Phase I study show that in the transition from ATPs and ATTs to ARTEP, certain guiding concepts and principles for field applications were not well understood by training managers responsible for ARTEP. Among problem areas identified were centralization of responsibility at battalion level; the conduct of effective training in an austere environment; and, in particular, management of concurrent multi-echelon training. Reasons for emphasis on concurrent multi-echelon training—namely, personnel turbulence—were appreciated by all. How to conduct such training efficiently was not. Clearly, the transition from the lock-step training schedule prescribed in ATTs—which, at least, everyone could understand—to concurrent multi-echelon training, places greater requirements for planning on battalion staffs. Further guidance is needed. One focal point for guidance involves better exploitation of several available training settings for the training of units and leaders. Substantial effort was devoted to an examination of alternative training settings. The results of this effort are reported in a separate volume of this report series.⁷ The research issues and processes leading to Volume V are described below.

⁷*Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation—Volume V, Analysis of Training Settings*. Final Technical Report. Human Sciences Research, Inc., McLean, Virginia: 30 April 1979.

Since our Phase I study was directed toward battalion-level field exercises, assessment of training settings can be directed toward integration of other settings that provide opportunities for training into such exercises. In this case, two questions may be asked: What training should *precede* battalion field exercises? Or, having diagnosed training needs in battalion field exercises: What settings are most appropriate for remedial training of battalion elements and leaders? However, whether use of alternative settings is married to battalion field exercises or not, guidance for fully exploiting all settings should be useful to training managers who have been directed to plan concurrent multi-echelon training in a resource-limited environment. The issue becomes more salient in view of certain types of simulations which have been developed in recent years to train unit leaders.

Training Settings Described

Nine settings were identified for study:

- Conventional ARTEP exercises
- Engagement simulation exercises
- CATTS (Combined Arms Tactical Training Simulator)
- CAMMS (Computer-Assisted Map Maneuver System)
- Pegasus
- TEWT (Tactical Exercise Without Troops)
- CPX (Command Post Exercise)
- Dunn-Kempf
- SCUE (Small Combat Unit Evaluation)

Next, some 35 parameters or dimensions were defined so as to provide a full description of each setting:

1. Description of the setting, scenario, and how the tasks are presented to players.
2. Player tasks and how they were conducted.
3. Requirements for administration, to include equipment, controllers/evaluators/auxiliaries.

4. Provisions for measurement of performance, diagnosis, and correction of deficiencies.

Settings were organized as two clusters—field exercises and battle simulations—and comparisons were made between and within clusters.

Comparisons Between Field Exercises and Battle Simulations

Comparisons between field exercises and simulations, or between simulations, are not definitive because in most instances the training value of simulations has not been empirically validated by systematic studies. Nonetheless, certain important conclusions emerge from comparisons.

Simulations are for training leaders. As such, they appear to be superior to field exercises for training battalion staff personnel, and useful for training company and platoon leaders. These conclusions placed stress on using *field exercises* for the training to which they are uniquely adapted.

- Use of field exercises to develop habits of accepting and responding to orders, of practicing troop leading procedures, and to allow junior level leaders to detect and correct errors by subordinates.
- Exploit and encourage opportunities of peers to assist one another and to coordinate their activities without specific instructions from above. Lower echelon personnel who can and will do this—within established mission goals—greatly unburden their leaders.

Comparison of Conventional ARTEP Missions with Engagement Simulation

Engagement simulation such as REALTRAIN and MILES is still under development. Thus far, it has been successfully used at squad, platoon, and company (minus) levels. Nonetheless, certain conclusions are warranted.

Engagement simulation, with rules of engagement properly played, provides a far more realistic means for playing the action and counteractions that occur between sides in the battle. Interactions between sides often lead to key training points that were not anticipated in training plans. Trainees must learn to recognize and exploit these. The competitive environment and high interest, which serve as a motivation during engagement simulation exercises, can be maintained in post-exercise critiques in which players from both sides participate.

Engagement simulation is a more precise training tool than conventional ARTEP missions. It requires added equipment. It *must* be well planned and administered if its potential advantages are to be realized. It requires training controllers so they can quickly reconstruct the battle validly, detect key actions of players not anticipated in mission plans, and effectively conduct After Action Reviews.

Comparisons Among Simulations

Two features that discriminate among battle simulations are whether setup work is to be performed at a central facility or locally, and the extent to which data for players are generated/stored automatically or manually. CATTS and Pegasus are simulations for training battalion staffs that exemplify these differences. CATTS is the most sophisticated simulation for the battalion staff. Rules of engagement are preestablished; intervisibilities are automatically computed; records are made of use rates of logistics. Pegasus is operated entirely manually with game boards. Having a central facility (CATTS) is especially advantageous in reducing the planning requirements placed on local training managers.

Dunn-Kempf and SCUE are designed to train company level leaders. In showing clearly the panorama of (one side of) the battlefield, they unrealistically unburden trainee-leaders. Nonetheless, they seem to have important applications which, however, need to be empirically established. Each (Dunn-Kempf, SCUE) has certain features that the other does not. Advantageous features of each might profitably be combined; in particular, means for recording and measuring performance used in SCUE should be adapted to Dunn-Kempf.

Integration of Engagement Simulation into ARTEP--Volume VI

Engagement simulation (ES) is undergoing continued development as a training method for increasingly larger units. Its inherent advantages of realism and objectivity in play of the battle make it an attractive training alternative. Army organizations and researchers are working on methods to smoothly and effectively incorporate ES into the ARTEP concept. Continued progress is being made in identifying and resolving training-related issues.

As a special part of the overall project, HSR prepared a paper⁸ that explores the issues involved in incorporating ES into ARTEP exercises where unit performance assessment and evaluation are also of interest.

Since ES is an entire training methodology, it has its own procedures for design and conduct of training exercises. These procedures differ from those currently practiced in conventional field exercises within the ARTEP framework. The differences between procedures and their underlying philosophies give rise to several issues which must be addressed if ES is to be incorporated into the ARTEP framework for conducting unit evaluations. The analysis focuses on the following areas:

- Development of accurate and comprehensive criteria and measures of unit tactical performance.
- Structure and functions of evaluator/controller teams who must collect engagement outcome data, observe, and possibly rate unit tactical performance.
- Reduction and integration of unit performance data collected by T&E Outlines or casualty records to provide feedback to units and training managers.
- Delivery and use of performance data collected from exercises to help establish training objectives and assess progress in training programs.

⁸*Improved Army Training and Evaluation Program (ARTEP) Methods for Unit Evaluation--Volume VI, Conventional ARTEP Missions and Engagement Simulations: An Examination of Options.* Final Technical Report. Human Sciences Research, Inc., McLean, Virginia: 30 April 1979.

These issues, as presented, are not independent. Decisions made regarding criteria and measurements influence all other areas. The full range of options in all issue areas are not yet known and could not be explored. However, the paper, as structured, provides a point of departure for further development of sub-issues and analysis of means of resolving them.