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CONTINUATION OF DEVELOPMENT OF AN INDIVIDUAL EXTENSION TRAINING--ETC(U)
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# (6) CONTINUATION OF DEVELOPMENT OF AN INDIVIDUAL EXTENSION TRAINING SYSTEM FOR MANAGING AND CONDUCTING TRAINING IN THE ARMY UNIT

by

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**ARI TECHNICAL REPORT**

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Army Project Number 2Q763731A770 Individual Training

This is a report on an advanced development research project designed to meet military management requirements for research on a specific management problem. A limited distribution is made, primarily to the operating agencies directly involved.

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# SUMMARY AND CONCLUSIONS

## PROBLEM

With decentralization of Army training, there is a need to develop and implement performance-oriented training programs for developing individual skills in units. The work reported here was devoted to the development and field test of a comprehensive and integrated prototype training and evaluation system for combat units.

## APPROACH

Five separate activities occurred during the second year of the project: (1) a one month feasibility field test of system components which provided encouraging results; (2) continuation of component development and refinement, having as its goal approved instructional materials and aids for all the duty positions in MOS 11B and 11C; (3) continuation of three research studies — a study of turbulence and time utilization in an Infantry Division, a report on incentives for individual skill training, and further investigations of cost/effective screening procedures; (4) development of guidelines for developing materials for other MOS and application plans for applying the system to other MOS, and (5) preparation for a large scale field test of the system and a study of retention of individual skills. Results are in the form of the following products:

1. A formal report entitled *Personnel Turbulence and Time Utilization in an Infantry Division.*

2. A report entitled *Enlisted Ratings of Possible Incentives for Skill Acquisition.*

3. Material Development

   3.1 Front end analysis for all 11B and some 11C duty positions.
   3.2 Completed task lessons for three duty positions.
   3.3 Partially completed task lessons for two duty positions.
   3.4 Record Keeping Forms.
   3.5 Management documents drafts.
   3.6 Workshop Guideline drafts.

4. Implementation guideline drafts on training material development and application plans.

5. A detailed plan for the design and conduct of a large scale field implementation tryout of the IETS.

6. A detailed experimental design for a large-scale field skill maintenance study.

## CONCLUSIONS

Based on the results of the effort to date, it is feasible to develop an individual extension training system (IETS) for implementation in Army units. An IETS like that developed here will mesh with requirements of the Enlisted Personnel Management System (EPMS). It will be consistent with the planned use of the Skill Qualification Tests (SQT), and it will fill a long-standing need in the Army's training progression from individual institutional training to operational collective readiness.

## PREFACE

This report summarizes the accomplishments of the second year's efforts on a contract to develop a performance based training and evaluation system for the combat arms. The work was performed by the staff of HumRRO's Western Division, Presidio of Monterey, California of which Dr. Howard H. McFann is director. Dr. John E. Taylor served as the project's principal investigator. Members of the staff included: Dr. H. M. Bialek, Col Mark Brennan (Ret), Ms. Nancy Ellsworth, Mr. J. T. Harden, Ms. Jacklyn Hungerland, Mr. John Joyner, Dr. William Melching, Mr. Michael McCluskey, Ms. Wendy McGuire, Dr. Morris Showel, Mrs. Janis Young, and Ms. Susan Schmidt. Miss Rhonda Talley supported us all with her good spirits and quick fingers on the typewriter.

HumRRO's work on the project was conducted under Contract Number DAHC 77-C-0010 under the sponsorship of the U.S. Army Research Institute for the Behavioral and Social Sciences. Mr. Jack J. Sternberg served as Contracting Office's Technical Representative (COTR). Dr. Jack Hiller served as acting COTR. Administrative and logistical support for the study was provided by the U.S. Army Research Institute Field Unit, Presidio of Monterey, with MAJ Tom Ritenour as R&D Coordinator.

Several members of the research staff of ARI's Presidio of Monterey Field Unit supplemented the HumRRO staff in accomplishment of the project's second year objectives. These were Drs. Jack Hiller and Richard Bloom.

We were fortunate in having the services of a number of officers and sergeants from the 7th Division at Fort Ord who served as subject matter experts and provided invaluable assistance in the development of the training materials. We appreciate their support and the continued support and cooperation of personnel in the 7th Infantry Division.

## BACKGROUND

### Current Trends in Army Training

Major shifts have been occurring in the Army's training establishment. Training is being decentralized, efforts are being made to move individuals through the training base faster, and there is a need to reduce training costs (funds, personnel, time, facilities) without reduction of training effectiveness. Army training philosophy is shifting away from the instructor-centered, classroom/knowledge setting to the student-centered, hands-on/skill development, job setting. The EPMS is decidedly performance oriented as are the Army Training and Evaluation Programs (ARTEP). Enlisted career progression and individual and collective training and testing are becoming more job relevant and training emphasis is shifting from the institutional to the unit setting.

As the Army undertakes implementation of the EPMS, the need for a comprehensive system of training to support it becomes acute. The recently introduced techniques of performance training and testing in the training base have had impact on skill testing — e.g., in the development and validation of ARTEP and SQT. A need has been recognized to extend performance-based training and testing beyond the training base to all skill levels in the EPMS.

The overall problem being addressed by this three-year project is the development and implementation of a performance-oriented training system for individual skill development in unit settings. Training programs for training supervisors and instructors must be evaluated and implemented in order to facilitate institutional change in the direction of performance-based training. The successful performance of the required individual skills is the key at all levels, for the failure of individual skill performance will contribute greatly to degradation of unit performance.

During the second year of the project (being reported here), one general project objective was to continue the program of R&D which was underway to develop a prototype performance-based system for training and evaluating the individual soldier in combat units. This system, designated as the Individual Extension Training System (IETS) was combined with the CATB-developed Battalion Management Program (BMP) during the second year. It is being designed to provide the unit commander and his training managers with an operational system for conducting individual training in the unit. Its major components are management procedures, record keeping techniques and forms, packages (modules) of task training materials and per-

formance checkouts for developing and assessing soldier skill proficiency, and guidance for trainers and training supervisors in the operation of the IETS. The IETS is being designed to be compatible with the other innovations mentioned above which are being introduced into the Army's training establishment, i.e., the Skill Qualification Tests (SQT) of the new Enlisted Personnel Management System (EPMS), Soldier's Manuals (SM), Training Extension Courses (TEC), and the Army Correspondence Program (ACP).

To provide the background for reporting on the achievement of the second year of the project a brief summary of the first year's efforts is presented:

A program of R&D was initiated in November 1975 to design, develop, and field test the IETS. The first year's work consisted of three major sub-efforts: (a) Design of an IETS model; (b) Development of IETS components; and (c) A series of research studies to generate information on the effects of major system variables on the IETS.

## Model Design

In order to generate the training information required for designing a feasible model of the prototype IETS, a number of activities were conducted early in the project in order to insure that the IETS model was firmly based within Army training doctrine and plans, philosophy, resources, procedures, and "real world" problems.

Relevant guidance documents, e.g., TRADOC regulations and planning documents, Soldier's Manuals, ARTEP, task lists, POI, and training circulars were surveyed for their impact upon individual training in units.

An inventory was made of all extant resource materials, e.g, TEC lessons, Training Aids, Training Films, FM, and TM to determine their suitability and availability for the conduct of individual training to units.

Observations of then current training operations were made and extensive interviews were conducted with commanders, training supervisors, and trainers at all levels (varying from the ADC and G-3 to squad leaders) in the 7th Infantry Division, Fort Ord.

What evolved was a simple system for conducting individual training in the unit that had the following characteristics: (1) decentralization of training; (2) individualization of training; (3) job-performance orientation of training; (4) self-pacing of training; and (5) no formal school structure for training. The major management and training functions of IETS were identified as follows for three training roles:

Training Supervisor (platoon leader/platoon sergeant), with the responsibility to train squad leaders to be trainers, schedule training, provide quality control, and support training.

Trainer (squad leader), with the responsibility to diagnose individual training needs, train and test squad members, and record performance.

Trainee (squad member), with the responsibility to learn job skills for and perform in his duty position, cross-train in other duty positions, and prepare for advancement.

## Development of IETS Components

Following the IETS model design, three concurrently running developmental efforts were undertaken:

1. A prototype set of training management and record keeping procedures was constructed for use by the training managers involved with the IETS. This set of procedures provided the information needed for making training decisions at various management levels.

2. A sample of approximately 30 infantry officers and NCOs rated the difficulty of all the 11B and 11C, Skill Level 1 and 2 tasks listed in the Soldier's Manual. A sample of some of the most difficult and moderately difficult tasks, representing both MOS and both skill levels, were selected for development of modular sets of prototype performance-oriented instructional materials. The corresponding performance tests for the same tasks were also developed for each module.

3. These sets of instructional materials and performance tests were then combined into 37 integrated job-task training/testing packages (TTP) and prepared for try out in the 7th Division, along with the management and record keeping procedures. The general subject areas covered in the instruction were land navigation, mines, surveillance, intelligence, NBC, and training.

## Research Studies

Three major studies were undertaken in support of the developmental objectives of the project to provide information needed in areas related to the development and implementation of the IETS:

Personnel turbulence. Turbulence impacts heavily upon the state of readiness of units in the field. A study was undertaken to determine the amount of turbulence, and its specific patterns and consequences for training, in selected units of the 7th Division. Interim results of the study showed a high degree of turbulence, and an effect upon the conduct of training.

Individual Screening Procedures. For an individual training and evaluation system to be cost effective it is imperative that those who do not require training can be identified and separated from those who do. A study was conducted to find the most valid methods/instruments for screening individual candidates for training under the IETS.

Incentives to Train. A study was undertaken to determine soldier preferences and attitudes toward 25 potential forms of reward for successful completion of training goals (skill acquisition and cross training) under the conditions of the IETS.

## ACCOMPLISHMENTS OF 2ND YEAR

### Phase I: Feasibility tryout of prototype components with 7th Division.

The purpose for designing the test was to study the operational feasibility of the new IETS using prototype (a) evaluation instruments; (b) training packages, including guidelines for instruction and performance evaluation; and (c) training management/record keeping procedures. Original plans called for a three month tryout but after many meetings and coordination attempts with the Division G-3 operationl constraints within the 7th Division limited the tryout to a concentrated 3½ week period.

Three rifle companies from an infantry battalion in the process of reactivation participated in the study. The actual training period extended from the 1st to the 23rd of November 1976 and involved 15 actual half-days of training. Each company's training schedules called for individual (squad level) training from 1300 to 1700 every afternoon ex-

cluding Friday. Thus, a total of 60 hours of IETS training was officially scheduled for each company. As a matter of fact, however, training rarely, if ever, began before 1330 and rarely, if ever, went beyond 1630. We therefore regard the available time for training as three hours, rather than four, and thus a total of 45 hours, rather than 60 hours.

All the personnel in the companies had been there less than two weeks. When the field test started, there were 88, 73, and 58 squad members participating from the three companies. At the end of the test period, the numbers were 91, 90, and 78 respectively. Thus, the companies were slowly filling during the period and none was at full strength.

A week and one-half before the start of the field test, orientation and training for the training managers was provided. The company commanders, platoon leaders, and platoon sergeants of the three companies were assembled in two training sessions of approximately three hours each. The initial session was an orientation on the field test and a walk-through of the two training documents *"Managing Individual Training"* and *"Conducting Individual Training"*. It was observed that all the officers and a high percentage of the NCOs had previous training or experience in performance oriented training methods so the material discussed was not new to them.

The second training session was devoted to actually conducting a performance oriented training class, as the program was designed for every manager to conduct a class. Although this was not possible within the three hour session, companies continued training on their own under company control.

These people, in turn, trained and tested their squad leaders in preparation for their roles in the field test. This training was accomplished under company control, using the training document *"Conducting Individual Training"*. Although the program was designed for each platoon leader/sergeant to train and check out his SLs in how to give a performance-oriented training class, one company commander elected to centralize his instruction. Before the field test was started, all squad leaders were checked for their understanding of the content of the lessons and the principles of performance oriented training.

Evaluation of the IETS tryout was based on data obtained through one or more of the following sources:

I.1 Weekly Performance Sheets — Each week, each squad leader was expected to turn in to his platoon leader or sergeant a sheet which listed every man in his squad and a list of the IETS lessons in which each man both started and qualified (or non-qualified) during the week. The date on which each man started a lesson, the date on which he was checked out, and the outcome of the checkout test (or re-test) were also recorded. These sheets provided a week-by-week and unit-by-unit record of effort and achievement.

I.2 Pre and Post Questionnaires — Separate questionnaires were administered to training managers, squad leaders, and squad members in an attempt to analyze their reactions to aspects of IETS.

I.3 Interviews — Training managers and a sample of SLs from all companies involved were interviewed in order to obtain further feedback and evaluation of the system.

I.4 Daily Observation — Each day two trained observers spent the entire period (1300-1700) with a randomly selected squad from the three companies. Thus, two squads a day for the 15 days of the field tests were observed and at 15-minute intervals the observers recorded the activities of the SL and squad members. In addition, they recorded the 15-minute-by-15-minute presence and absence of each member of the squad.

I.5 Contractor Observer — A staff member accompanied each company every training day. He observed and provided ongoing feedback and guidance as required.

From observation, it was estimated that about one-quarter of the SLs had previous training and experience with performance-oriented training methods. During the training sessions, the example set by these experienced SLs considerably assisted in training others who had no previous performance-oriented training.

From observation, it was estimated that each platoon took from six to eight hours to train and check out their four SLs in how to conduct a performance-oriented training class.

Following are the results of the field tryout:

I.6.1 Amount learned: The maximum number of lessons available for MOS 11B was 25 and for 11C, the number was 37. On the average, a squad member mastered 11 lessons during the scheduled training period. Amount learned in a squad ranged from a low of six tasks per man to a high of 17.

I.6.2 Time to learn: About two hours of actual training time was required, on the average for a soldier to master a task.

I.6.3 Application of Performance Oriented Training (POT) Principles: All of the squad leaders observed conducted POT. Of the total time the SLs spent presenting POT. 13% was devoted to screening, 23% to orientation and demonstration, 31% to practice, and 33% to check-out testing. Cases were reported where SLs would screen out knowledgeable men, check them out, and use them to help with training the others. There was, however, a tendency for SLs to give "platform" demonstrations when, with more guidance, they could easily engage in more "hands on" demonstration. Over 80% felt the specially prepared lesson booklets were as good or better than existing FMs and TMs in helping a squad leader prepare and conduct POT individual training.

I.6.4 Operation of the IETS: The platoon leader, along with the platoon sergeant made the decision as to which tasks would be taught and it was usually coordinated with the company commander. Availability of training materials, training areas (when required) and evidence that the squad had not been exposed previously were the deciding criteria. Except for some of the land navigation lessons, which were based on earlier lessons, there was no sequence or pattern of instruction. Availability of space and equipment plus need determined the sequence as well as the selection of tasks.

I.6.5 The reporting system: The transmittal of performance information from the squad leader up the command chain worked only moderately well. Because of the research pressure for the information, most of the Weekly Performance Sheets (these contained the names of each man in the squad, along with the title of every lesson he started, and, if applicable, qualified on for the previous week) were turned in to the platoons. The precision and accuracy of these sheets varied from platoon to platoon, suggesting varying degrees of command emphasis at the platoon level. There was also company level variation in the quantity and quality of these reports. Almost all of the training managers indicated that the SLs' records of individual performance kept them informed of the training status of each man in his platoon and felt that the information was reliable.

I.6.6 Quality Control System: Overall, the quality control system appeared effective. A total of 366 audits were made during the tryout. (There was considerable variation among the three companies, with one company conducting about two-thirds of the audits.) Analysis reveals that about 10% of the men who had been scored "qualified" by their SL failed the audit. Acceptable failure rates have not been established, but the

10% error observed appears to be a reasonable level. The strong consensus among SLs and training mangers interviewed was that quality control was a very desirable and useful aspect of the system.

I.6.7 Effects of turbulence (details presented in Phase II): The study design had called for establishing three degrees of personnel turbulence: Co A - High; Co B - Moderate; and Co C - Low. The attempts to control turbulence were not successful. There were virtually no differences among the three companies in the availability of men for training during the hours scheduled. Specifically, the overall rate of 53% (man hours used for training divided by the man hours available) is made up of a 52%, a 53%, and a 50% rate for each company respectively.

I.6.8 Reactions to the tryout: The battalion commander and S-3 participated fully in the setting up of the field study. Both made frequent inspections of ongoing training and both supported the basic concept of IETS. They recognized, however, that certain logistical procedures would have to be changed (materials allotment, space scheduling) but that such changes were certainly possible. The battalion commander was especially enthused over the prospect of having better trained SLs on board as a result of this system.

Over 90% of the squad leaders involved viewed their role positively as the person primarily responsible for providing individual training. In addition, they felt they were given the needed freedom to carry out their responsibilities, and strongly approved of the overall instructional approach. About 80% of the training managers, platoon leaders, and platoon sergeants agreed.

Squad members, overall, tended to be unimpressed preferring the "old" system to the new. The majority agreed that:

a. Most of what they learned in the field test would help them in their present assigment.

b. Training was a little better in their past unit than the present one.

c. Instructors in past unit knew a little more than in present one.

d. Instructors in past unit were a little better teachers than in present one.

e. Present unit tended to teach skills they already knew.

f. They had more time than they needed for practicing before checkouts.

g. Present unit tended to waste more training time.

h. The checkouts tended to be fairly easy.

i. Men received more individual attention in their present unit.

I.6.9 Summary of and conclusions from initial field tryout: An IETS involving primary instruction at the squad level can produce qualified soldiers and enhance the role and responsibility of the squad leader. An auditing system to maintain quality instruction is feasible, because of the performance-oriented nature of instruction, and is seen positively by training managers and squad leaders.

Developing instructional materials in small "lesson" packages is feasible, functional, and is seen as extremely valuable. The existing format, language, and content of the lessons need only minor modifications. Support problems in terms of training materials, scheduling, and space need to be worked on further.

Further development work should be focused on (a) further development of duty position instruction packets, (b) refining and trying out recording systems, and (c) effectively integrating IETS within a regular operational unit.

## Phase II: Continuation of Research Studies

II.1 Turbulence: The study of turbulence in an Infantry Division designed to reveal something of the extent and pattern of personnel movement and availability was completed and reported in: *Personnel Turbulence and Time Utilization in an Infantry Division*, Bialek, H., Zapf, D., and McGuire, W., HumRRO Report 77-11, June 1977. The study involved a representative sample of rifle companies drawn from an infantry division. Data from two primary sources were collected: (1) company manning reports, and (2) direct observation of the daily activities of squads. Manning report information was the primary source of information concerning the movement of men in and out of the companies. Direct observation data focused on time utilization and daily movements of individual squad members within companies. The basic data unit was a fifteen minute time period of observation for each squad member. Observations extended for three months and a total of approximately 40,000 such units were collected during that period. In summary, the study found:

The amount of movement both in and out of a company and within a company is considerable. At the end of a four month period, of the original company roster:

a. 36% of the men stayed put; they were in the same job in the same squad.

b. 24% of the men had left.

c. 16% were in the same squad but had changed jobs.

d. 21% had changed jobs and changed squads.

e. 03% had changed squads and kept the same job.

The typical squad experienced one movement per week (a person either entering or leaving the squad).

During a typical training day, less than 20% of the time is actually devoted to training. The major share of the day (43%) is devoted to support/garrison activities. Men were absent on average 16% of the time.

Suggestions for further exploration into causes and possible ameliorations of the conditions observed are reported.

II.2 Cost-Effective Screening: During the second year, ARI personnel accomplished the following in this area: variables that affect the amount of time saved or lost by employing pretests were identified and defined. An algebraic model which takes into account measurement accuracy and the effect of pretesting time was constructed so that the amount of time saved (or lost) by pretesting could be estimated. Alternative pretest procedures were formulated. A limited sample of empirical data was gathered to test the cost-effectiveness of the alternative pretest procedures, using a highly efficient data collection procedure.

II.3 Incentive Study: This area was also primarily an ARI effort. An ARI report entitled *Enlisted Rating of Possible Incentives for Skill Acquisition*, Bloom, R., dated February 1977 was produced. A summary of the effort is as follows:

One major training goal is to ensure that soldiers maintain and enhance their combat relevant skills. In support of this goal, attention was directed to the possible use of incentives as prompt awards for demonstrated skill proficiency. While the technique of using incentives as a motivational strategy is simple, their implementation within unit settings may be complex. For one thing, a decision must be reached regarding what potential incentives are likely to represent attractive or valued awards to a target population of soldiers. Accordingly, a study was carried out to determine preferences by enlisted men for various possible training incentives. Using a sample of approximately 200 enlisted men, the results indicated that monetary awards and autonomy incentives (such as choice of squad assignment) were highly valued. Recognition oriented awards such as a letter of commendation and being provided with time off were also judged as valuable though to a lesser extent than either monetary or autonomy oriented awards. It was concluded that many of the moderately valued incentives (those dealing with recognition and time off) are probably managerially feasible. The possible effectiveness of such feasible incentives is suggested by the fact that the preference ratings assigned to them are roughly comparable to financial awards of $5 a month increase in salary or a $50 one time bonus.

Phase III: CATB's Assumption of Sponsorship

As noted in the coordination section, a change in sponsorship from TMI to CATB occurred during the second year. Along with the shift in sponsorship came a shift in responsibilities among the contractor, sponsor, and COTR. The IETS was now to be integrated into a larger Battalion Training Management Course being developed by CATB. Furthermore, the USAIS was included in the development of the training and management materials. Under this change contractor staff required a period of time to adjust to the new accountability/responsibility roles. New review/approval procedures (to include USAIS) for material development were introduced to facilitate communication between the designers and producers of the materials.

As a result of the change in responsibility for system design, the IETS differs from the contractor's original conception in the following areas:

1. The procedure for developing instructional material is more systematic and formal (see page 16).

2. Trainer and Trainer Supervisor Workshops are more formal and extensive.

3. The record keeping system was extensively redesigned.

4. The reporting system has been made less extensive and more informal.

5. The Squad Leader's role in determining training content has been delimited by acceptance of training priorities set through the chain of command.

Phase IV: Continuation of System Component Development & Refinement

The procedures that were developed during the project's first year for developing system components were substantially modified as a result of the change in sponsorship referred to earlier. After many lengthy meetings the COTR presented the following 12-step cycle for material development which the contractor has subsequently followed:

1. Select specific duty position, and thereby determine specific set of SM tasks.

2. a. Critique each SM task, conditions, and standards to insure completeness, internal consistency, and validity. Revise and note reasons for revision.

b. Analyze each task in detail to identify its subtasks, and draw task road map.

c. List steps required to perform each task or subtask in the order required for their performance.

d. Submit for review to local expert, and revise as needed.

3. Construct a draft road map for the duty position.

4. Perform detailed analysis of the road map and its tasks to identify:

a. Subtasks that need to be added to any task lesson in order to complete the lesson.

b. Tasks that need to be added to the set of duty positions tasks.

c. Redundant subtasks or tasks that should be deleted.

d. Inconsistencies or ambiguities.

5. a. Revise task, conditions, and standards; the individual task road maps; and task or subtask steps, as needed.

b. Revise duty position road map.

c. Prepare explanation of any proposed revisions to task, conditons, and standards, and any proposed additions or deletions of SM tasks.

6. Submit items 5a, 5b, and 5c for CATB/INFANTRY SCHOOL review.

7. Receive review, and resolve any questions.

8. Complete development of each TTP lesson.

9. Submit each completed TTP lesson, as individually produced, to CATB/INFANTRY SCHOOL for review.

10. Receive review, and resolve any questions.

11. Finalyze each TTP lesson, and construct its TTO cards.

12. Submit TTP to local expert to insure TTO clarity, completeness, and validity, and revise TTOs as needed.

Repeat cycle of steps described above for the next duty position.

As things turned out there have been innumerable delays in the turn around time between steps 6 and 7 above so that only now as the contract year ends has the contractor been able to proceed to steps 8-12. This is reflected in Table 1 below which shows the training material development status.

Three major categories of component materials are in development. The first, *Training and Evaluation Materials* includes approximately 200 individual Task Training Packages (TTP) which consist of all materials necessary for conducting training and for checking task proficiency. These TTP are assembled into Duty Position Packages. There are 12 Duty Position Packages for MOS 11B and 9 Duty Position Packages for MOS 11C. Each Duty Position Package is accompanied by its own Management Plan for managing training in the tasks for that duty position. Each Management Guide includes a "road map" specific to those tasks, a resource list, and guidance for both the squad leader trainer and the individual soldier learning the tasks. Current status for the development of this material is shown in Table 1.

The second major category of component materials is the *Management Documents* which includes a SOP (see Appendix A) as general guidance and information, a Trainer/Supervisor Manual providing detailed guidance for those platoon leaders and platoon sergeants who supervise training and the squad leaders who conduct training, and in Workshop Manager's Guide for conducting a Trainer/Supervisor workshop.

TABLE 1. TRAINING MATERIALS DEVELOPMENT STATUS: END OF 2ND YEAR

| Duty Position | Front End Analysis | | Undergoing Sponsor Review | Training Materials Development | |
|---|---|---|---|---|---|
| | In Process | Completed | | In Process | Completed |
| 11B10 | | | | | |
| Machinegunner | | X | | | X |
| Scout | | X | | | X |
| Rifleman/Grenadier | | X | | | X |
| Wheeled Vehicle Driver | | X | | X | |
| 90mm Recoiless Rifle Crewman | | X | | X | |
| Dragon Crewman | | X | | X | |
| 106 Recoiless Rifle Crewman | | X | | X | |
| TOW Crewman | | X | | X | |
| Radio-Telephone Operator | | X | | | X |
| 11B20 | | | | | |
| Fire Team Leader/Assistant Scout Squad Leader | | X | | X | |
| 106 Recoiless Rifle Squad Leader | | X | X | | |
| TOW Squad Leader | | X | X | | |
| 11C10 | | | | | |
| 81mm Crewman, Ground Mounted | | X | X | | |
| 107mm Crewman, Ground Mounted | | X | X | | |
| 81mm Mortar Wheeled Vehicle Driver | | X | X | | |
| 107mm Mortar Wheeled Vehicle Driver | | X | X | | |
| 11C20 | | | | | |
| 81mm Ground Mounted Squad Leader | X | | | | |
| 107mm Ground Mounted Squad Leader | X | | | | |
| Forward Observer | X | | | | |
| Computer (M16 Plotting) | X | | | | |
| Computer (Firing Chart) | X | | | | |

The third major component is the *Record Keeping Forms* which includes three items: a Trainer's Notebook, a Squad Member's Job Book, and a Squad Member's Transcript. The Trainer's Notebook is kept by the squad leader and is used to record information on the task proficiency and training status of each of his squad members. The Squad Member's Job Book is a personal record maintained by the indiviudal soldier. It serves as the soldier's log of his own task proficiency and training status. The Squad Member's Transcript is an up-to-date record of each soldier's task proficiency and training status which accompanies the man when he transfers from one squad to another. It is prepared by the losing squad leader for delivery to the gaining squad leader. A fuller description appears in Appendix B.

## Phase V: Application Guidelines

### A. Training Materials Development

So that others may be able to develop task lessons and associated training materials for an IETS, special guidelines are being developed. These guidelines, a major product of the project, describe systematically the procedures to be followed by the developer in (1) analyzing Soldier's Manual (SM) tasks, (2) developing duty position road maps, (3) constructing task lessons and task checkout materials, (4) constructing task training outline cards, and (5) designing simple forms by which to record progress of men in individual training. These guidelines are not intended for use by people unfamiliar with (a) task analysis, (b) behavioral objectives, and (c) the subject matter of the MOS. Given these prerequisites, the guidelines should allow any developer to proceed. The outline for these guides is, as would be expected, very similar to the 12-step cycle for material development presented to the contractor by the COTR. The tentative outline is as follows:

Training Materials Development Guidelines: Outline

1.0 Select specific duty position, and thereby determine specific set of SM tasks.

- 1.1 Review SM to identify tasks making up each duty position in a given MOS.
  - 1.1.1 Review SM to identify tasks making up each duty position in a given MOS.
  - 1.1.2 Note overlap among positions in tasks required.

2.0 Critique each SM task, conditions, and standards to insure completeness, internal consistency, and validity. Revise and note reasons for revision.

- 2.1 Fractionate each task in terms of actions, conditions, standards.
- 2.2 Fractionate each task into subtasks, if warranted, using criteria:
  - 2.2.1 Task "naturally" divides into meaningful subtasks.
  - 2.2.2 Subtasks can be taught in relatively short periods (15-30 minutes).
  - 2.2.3 Learning will likely be facilitated.

2.3 Analyze each task in detail to identify its subtasks, and draw task road map.

2.4 Generate statements of subtask actions, conditions, and standards.

2.5 Arrange the subtasks to show learning sequence.

2.6 Prepare, for each task and subtask, the steps that show how it should be performed.

2.7 2.6.1 Locate useful illustrations and incorporate them into steps.

2.7 Submit each task analysis to subject matter expert for review of technical accuracy.

2.7.1 Make necessary revisions to steps as result of review.

3.0 Construct a draft task/subtask learning sequence (road map) for the duty position.

3.1 Use road map to determine learning relationship between tasks of a given duty position.

3.1.1 Identify and fill gaps in skills as necessary.

3.1.2 Determine and correct inconsistencies and redundancies.

3.1.3 Identify or prepare "super" tasks.

3.1.4 Sequence tasks for optimal learning.

4.0 Revise task, conditions, and standards; the individual task road maps; and task or subtask steps, as needed.

4.1 Revise duty position road map.

4.2 Prepare explanation of any proposed revisions to task, conditions, and standards, and any proposed additions or deletions of SM tasks.

5.0 Submit items 4.0, 4.1, and 4.2 to doctrine department for official review.

6.0 Receive review, and resolve any questions.

7.0 Complete development of each TTP lesson.

7.1 Draft lessons using enclosed format (see Appendix D).

7.2 Locate and insert additional illustrations as needed.

7.3 Conduct staff review of lessons; request expert review if doubtful about accuracy.

7.4 Type lesson in preparation for duplication.

8.0 Submit each completed TTP lesson, as individually produced, to doctrine department for review.

9.0 Receive review, and resolve any questions.

10.0 Finalize each TTP lesson, and construct its TTO cards.

10.1 Draft cards using enclosed format (see Appendix D).

10.2 Type final draft of cards.

11.0 Submit TTP to local expert to insure TTO clarity, completeness, and validity, and revise TTOs as needed.

Repeat cycle of steps described above for the next duty position..

B. Application Plans

Development of these plans is in a preliminary stage since the intent was to wait until material and system development had reached an advanced stage so that as error-free a system as possible could be described.

Application plans have two major purposes. The first is to provide a potential consumer with information he needs to wisely decide whether or not the BTP/IETS is in fact appropriate for his unit needs. The second follows from the first. If the decision is affirmative, then the second purpose of the application plans is to provide the potential consumer with directions for using all of the implementation materials, other relevant Army documents, and workshop manuals and guides.

Because unit organizational structure varies somewhat from the squad-platoon-company structure of Infantry (the context in which the IETS was developed), some reasonable means of translating the Infantry structure and training roles to other structures was needed. Other types of units designated for application of the IETS were: armor, air defense, field artillery, engineer, combat support, and combat service support. Relevant FMs and Special Texts covering TO/E for these types of units were reviewed. In addition, interviews were conducted with commanders and staff personnel in the 7th Division in the following types of battalions: Medical, Engineer,

Supply and Transportation, Maintenance, Field Artillery, Air Defense, Military Police and Signal. Information was collected in unit structure, training, role functions equivalent to Infantry, amount and type of training provided (individual vs. collective), and evaluation of training needs/achievement.

As a result of the literature review and interviews, it became apparent that battalion commanders in the field would not be responsible for deciding whether or not they would use the IETS nor for developing the materials that constitute the IETS components. Since decisions related to implementation of the IETS will be made at proponencies, the draft application plan was prepared as guidance to developers of instructional materials and those agencies responsible for the conduct of training and maintenance of unit job skills.

One section of the application plan provides step-by-step procedures for use by proponencies in deciding (on the basis of cost-benefits) whether or not implementation is appropriate for a given MOS. Decision factors include (a) consideration of the nature of the soldier's predominate activity in the MOS under consideration (is the soldier acquiring new skills or actually performing his job with skills previously acquired?), (b) the availability of first line supervisors as individual skill instructors, (c) level of skill training needed in unit, and (d) duty position density. Other factors may be identified as application plan development proceeds.

A second section of the plan provides references and guidance for the development of IETS materials, once the decision has been made in favor of its application in an MOS. References include (a) relevant Army training management literature, (b) the SOP for the BTMS/IETS, (c) Task Training Packages (the core of the IETS) guidelines, and (d) guidelines for conducting workshops for trainers and training supervisors on how to implement and manage the BTMS/IETS. The application plan will direct users through a sequence of application of these documents.

The draft application plan will be field reviewed and refined during the third contract year.

## Phase VI: Preparation for System Field Test and Skill Maintenance Study

Considerable thought and preparation went into the design of a large scale study planned for the 3rd year of the contract to assess the operational effectiveness of the BTMS/IETS. This plan and design is a reflection of the Statement of Work for the third year contract provided by ARI and as such has received the sponsor's concurrence.

A brief summary of the plan follows:

Fifteen sub-objectives are listed in the statement of work. To meet these objectives, two infantry battalions would be engaged in the preparation for and operation of the IETS for approximately eight months. Only the rifle and combat support companies of each battalion would participate in the study -- the headquarters companies having no 11B or 11C on their rosters -- making a total of eight companies (six rifle and two combat support). More pertinent, however, is the fact that there is a total of 61 squads in each battalion or, in terms of this proposed study, a total *squad* population of 122. Output -- number of skills presented, number of skills learned, and identification of skills learned -- will be obtained for each of these 122 squad units. Such information can be combined to obtain platoon, company, and battalion outputs. In general, data collection will consist of observations, incumbent surveys, interviews, questionnaires, and examination of training records. Included in the preparation of this study was the initial development phase of prototype assessment instruments including observation schedules, interview outlines, and questionnaires.

The fifteen subobjectives of the study are:

1. Measure rate of mastery.

2. Determine effects of scheduled vs. non-scheduled training time.

3. Determine effects on job satisfaction.

4. Estimate ability of system to deliver training despite turbulence.

5. Evaluate effectiveness of trainer and training supervisor workshops.

6. Evaluate efficiency of trainer and supervisor workshops.

7. Evaluate training time planning procedure.

8. Evaluate utilization and effectiveness of course management plan for 21 duty positions.

9. Estimate the capability of trainers to prepare themselves to teach specific tasks.

10. Estimate training supervisors' ability to support trainer with learning assistance and with training resources.

11. Evaluate Task Training Packages (TTPs), Task Training Outlines (TTOs), the conduct of training, and the conduct of testing (to include pre-testing and checkouts).

12. Determine capability of squad members to self-train.

13. Evaluate record-keeping system.

14. Evaluate quality control mechanisms.

15. Estimate global acceptability of IETS.

The design and planning for a skill maintenance study was the second major effort under phase VI. The study was designed to provide skill decay data which could be used in determining when skill maintenance activities should be conducted.

A task classification system was identified for categorizing all Skill Level 1 and 2 job tasks for MOS 11B and 11C. The general descriptions of the categories were as follows:

A. Difficulty of Task Performance

   1. Hard -- A relatively long time is required to learn to perform the task at the performance standard.

   2. Easy -- A relatively short time is required to learn to perform the task at the performance standard.

B. Type of Activity

   1. Cognitive -- Discrimination; identification; information search, reception, and processing; problem solving; decision making.

   2. Psychomotor -- Simple, complex, continuous, and discrete.

Each 11B and 11C job task was placed in one of these four categories following a detailed review of the soldier's manuals and TTPs. The assignement of tasks to the difficulty categories was based on data furnished by the government. The tasks were assigned to either cognitive or psychomotor categories based on the judgments of five TTP developers. When the five individuals were not in perfect agreement, they met and discussed the task until consensus was reached.

Subject to the availability of the required number of subjects for the test, longitudinal data on skill decay will be collected on 11B and 11C job tasks during the third year.

## Coordination During 2nd Year to Accomplish All Phases

The following meetings were held during the year to facilitate progress:

1. November 1976: Meeting with ARI and HumRRO personnel to discuss the first phase of work to be conducted. The result of the meeting was a reexamination of the functional grouping of tasks that had been developed previously.

2. December 1976: Meeting with ARI and HumRRO to discuss task groupings. A rationale for grouping was accepted to be used for subsequent material development. Also agreed upon was that the rationale could also serve to organize instructional material for all combat and combat support MOS.

3. January 1977: CQR briefing in which ARI, TMI, and HumRRO personnel were in attendance. A review of the last quarter's work as well as a preview of the coming year's work was conducted.

4. January 1977: A briefing for the 7th Division ADC to present results of the November field study as well as a preview of coming year's work.

5. January 1977: A briefing with the 2nd Brigade commander and his staff in order to orient them to the coming year's support needs and implementation plans. (At that time, plans to conduct field studies were still in effect.)

6. February 1977: Representatives of HumRRO and ARI, Fort Ord, met with ARI Central Office staff to make plans for a large operational test to be conducted at Fort Ord during the third contract year.

7. March 1977: HumRRO and ARI representatives coordinated plans for the third year operational plan with representatives of TMI and TRADOC.

8. March 1977: HumRRO representatives met with the 7th Division ADC to provide background information for his attendance at a briefing on the 3rd year project planned for the DCSIT, TRADOC.

9. March 1977: HumRRO, ARI, TMI, and 7th Division representatives participated in a project briefing for the DCSIT, TRADOC.

10. April 1977: In the early part of this month TRADOC made arrangements to reassign sponsorship of the project from TMI to CATB. (Actual sponsorship changes occurred later in the month.) ARI and HumRRO personnel briefed CATB on current accomplishments and projected plans. CATB indicated that they were working on a Battalion Training Management System and that their direction from MG Gorman was to integrate the IETS effort, and other efforts as well, into one training package. Accordingly, changes had to be made to accommodate this new interest as well as to enhance a more meaningful and successful training package. This required a modification of some of the IETS sub-objectives. In particular, formatting of the TTPs and the development of Course Management Packages. Furthermore, it was agreed by ARI and the sponsor that the USAIS should take an integral part in reviewing and developing Task Training Packages and Course Management Packages on the assumption that General Gorman felt early participation of the Infantry School was necessary in order to enhance later acceptability.

11. April 1977: A second meeting with ARI, HumRRO, TMI, and CATB was held to reach further agreement on work to be accomplished.

12. May 1977: Further meetings with HumRRO and ARI were held to clarify new directions and new organizational relationships stemming from CATB's assumption of sponsorship.

13. August 1977: A two day meeting held at Fort Benning with CATB, Infantry School, ARI, and HumRRO for further clarification of project directions and goals.

14. September 1977: Meeting with CATB representatives and ARI and HumRRO personnel to agree on material development content and procedures.

In addition to these coordination meetings, monthly reports were regularly submitted and the COTR met on an almost daily basis with one or more contractor staff members.

APPENDIX A

# STANDARD OPERATING PROCEDURE FOR THE INDIVIDUAL EXTENSION TRAINING SYSTEM (IETS)

## I. INTRODUCTION

This document provides important information for the officers and men of infantry units in the field who are to be involved in the conduct of individual skill training. The document briefly describes the background and development of the IETS and its major components and it provides a detailed description of the structure and functions of the system.

Its purpose is to provide an overview of the system which simply and clearly describes: (1) how the system is structured and the levels of organization that are involved; (2) the functions that are performed in operating the system, i.e., managing, training, supervising and supporting, conducting, and evaluating individual training; and (3) the individuals who perform these functions, varying from the battalion level training manager to the individual squad member.

## II. BACKGROUND

The Army's Enlisted Personnel Management System (EPMS) has established five skill levels for career development. These skill levels (I-V) apply across all Career Management Fields (CMF) and their component MOS.

The Army has developed Skill Qualification Tests (SQT) to govern each soldier's advancement through the EPMS skill levels. Each MOS has a series of SQT which are administered on a regular basis to verify each soldier's ability to perform the job tasks of his present skill level (I-V) and to determine his qualification for advancement to the next skill level.

Soldier's Manuals are being developed which specify the individual soldier's detailed job tasks that are required at each skill level in the several duty positions of each MOS.

The IETS was developed as a prototype system for accomplishing individual job-task training in infantry units in the field. The IETS provides a third leg supporting the Army's EPMS. That is, the Soldier's Manual constitutes one leg, providing detailed job task descriptions for the soldier's performance of each duty position; the SQT constitutes a second leg, providing measures for determining the soldier's job competence; the IETS constitutes the third leg, providing procedures and

materials for managing and conducting training by units in the field to develop the job skills required by the various job duty positions of the soldiers' MOS.

At the present time, the prototype system's structure, functions, and component training and management materials have been developed in detail for the infantry's two highest density MOS (11B and 11C) at Skill Levels I and II. The sections which follow present details of the SOP for conducting training in all the duty positions for MOS 11B and 11C at Skill Levels I and II, as prescribed by the IETS.

## III. DESCRIPTION OF IETS

### A. Purpose

The IETS was developed as a system for the Army to meet its needs for improved individual training in units brought about by recent major shifts in Army training philosophy. These shifts have (1) decentralized instruction, (2) emphasized performance/skill development over classroom/knowledge development, and (3) increased the proportion of individual training conducted in the unit setting. The EPMS is decidedly performance oriented as are the Army Training and Evaluation Programs (ARTEP). Thus enlisted career progression and individual and collective training and testing are becoming more job relevant.

The IETS provides performance-oriented/job-relevant training procedures and materials for accomplishing individual skill development in the soldier's unit setting. The essential need for a system to teach required individual job skills is apparent - the failure of individual skill performance contributes greatly to the degradation of unit performance.

### B. Characteristics of IETS

The system displays six major characteristics which make it consistent with and responsive to the shifts in Army training philosophy referred to above. These characteristics are as follows:

1. The system with its supporting instructional materials meshes with the EPMS and its supporting SQT. The Soldier's Manual tasks comprise the foundation from which both the SQT items and the IETS training materials are derived. The Soldier's Manuals spell out the tasks, the IETS materials spell out the training for the tasks, and the SQT items spell out the materials and standards for demonstrating task proficiency for promotion.

2. The system is MOS-duty position oriented. The instructional materials are specifically tailored to teach the skills and information required for performance of 11B and 11C job tasks. All materials required for learning a given task are provided in a Task Training Package (TTP).

All the TTPs required for learning to perform the tasks that comprise a duty position are assembled into integrated instructional modules, one for each duty position. The duty position modules are in turn organized into groupings reflecting the job tasks of a particular MOS. This packaging makes available to the soldier task training material for all tasks required in his MOS whether they be job-duty specific or common across two or more duty positions.

3. The system is tailored for application in units rather than in schools or training centers. The focus is on learning the skills the soldier requires to round out his present job duty performance, to cross-train in order to perform in other duty positions, and/or prepare himself for advancement to a higher skill level. The emphasis is on the soldier's active, hands-on learning with unit personnel, equipment, and facilities while serving in a unit assignment. This is in contrast to the more traditional school approach in which the soldier is in a passive student role attending scheduled classes to acquire information for later application on the job.

4. The system decentralizes training responsibility to the squad leader. The squad leader is provided with complete materials, guidance, and support for conducting the training of his individual squad members, and, within limits, it is he who decides who needs to be trained and in which tasks. Supported by his platoon sergeant, the squad leader diagnoses individual job-task deficiencies, conducts the required training, and administers the appropriate performance checks to assure task proficiency.

5. The system calls for the conduct of job training at the level of the individual squad member. The specific job-skill needs of each individual are determined and provided for as quickly as possible. Group instruction is conducted only when it is determined that more than one member of the squad is in need of the same job-task training. Because individuals have quite differing needs for training depending upon their experience and training histories, the squad leader will usually be involved in training each of his individual squad members in quite differing job skills at any given time.

6. The system calls for self pacing of instruction. There is no set time for completing a task; there is no prescribed schedule to be followed in achieving task proficiency. Because the squad leader's goal is to train each of his men to achieve job-task proficiency as quickly as possible, he spends only the amount of training time that is actually required by each man. Where one man may be close to proficiency in a given task, another man (new to the squad) may be completely inexperienced in the same task. The squad leader may be able to bring the first man up to proficiency in an hour's instruction while he may have to devote several hours to reach the same level with the second man.

The system also provides for self-instruction in those tasks where a squad member can study or practice on his own or with his squad-member peers. Depending upon a particular individual's abilities and motivation, and upon the task being learned, the squad leader may elect to have the training conducted by himself or his assistants, have the man study and practice independently, organize peer-instruction sessions, or employ an appropriate combination of all of these.

## IV. IETS COMPONENTS

The IETS provides three major categories of component materials as follows:

*Management Documents* include this SOP as general guidance and information, plus a Trainer/Supervisor Manual providing detailed guidance for those NCOs who supervise training (platoon sergeants) and those who conduct training (squad leaders).

*Training and Evaluation Materials* include approximately 200 individual Task Training Packages (TTP) which consist of all materials necessary for conducting training and for checking task proficiency. These TTPs are assembled into Duty Position Packages. There are 12 Duty Position Packages for MOS 11B and 9 Duty Position Packages for MOS 11C. Each Duty Position Package is accompanied by its own Management Guide for managing training in the tasks for that duty position. Each Management Guide includes a "road map" specific to those tasks, a resource list, and guidance for both the squad leader trainer and the individual soldier learning the tasks.

*Record Keeping Forms* include three items: a Trainer's Notebook, a Squad Member's Job Book, and a Squad Member's Transcript. The Trainer's Notebook is kept by the squad leader and is used to record information on the task proficiency and training status of each of his squad members. The Squad Member's Job Book is a personal record maintained by the individual soldier. It serves as the soldier's log of his own task proficiency and training status. The Squad Member's Transcript is an up-to-date record of each soldier's task proficiency and training status which accompanies the man when he transfers from one squad to another. It is prepared by the losing squad leader for delivery to the gaining squad leader.

## V. DETAILS OF IETS STRUCTURE & FUNCTIONS

### A. Overview

The IETS is a training system designed to operate at company level and below. It operates within, and supports the collective training goals of, the parent battalion.

Because of the inter-locking ties that exist among the individual tasks required in battalion and company-level ARTEP, the tasks specified in the Soldier's Manuals, the tasks that are tested by the SQT for advancement through the EPMS, and the Task Training Packages of the IETS, the IETS serves as the unit commanders' most direct training vehicle for achieving the task proficiency required by the EPMS and ARTEP collective training goals.

Figure 1 presents a skeletal diagram of the structure of the system indicating the essential functions that are performed by key personnel at each organizational level. The boxes in the figure represent five levels of organization ranging from battalion, down to individual squad member, arranged in hierarchial order. The short statements in each box indicate the major functions performed at the level. The two-way arrows in the upper left of the figure connecting the battalion and company levels depict the two-way communication and negotiations that occur in determining priorities and scheduling training. The multiple two-way arrows that interconnect battalion, company, platoon, and squad levels on the right side of the diagram represent the communication lines for requesting and providing support.

The diagram shows that at the most general level of description, the system operates as follows: battalion level officers establish training priorities and manage training; company level officers schedule training and provide for its support; platoon leaders/platoon sergeants supervise, guide, and support squad leaders in the conduct of training; squad leaders train and determine the task proficiency of their squad members; individual squad members train on selected tasks and keep track of their developing task/duty position proficiency.

B. Detailed Discussion

This discussion of the operation of the system traces through the five organization levels depicted by the boxes in Figure 1. Discussion begins with the highest level (battalion training managers) and proceeds down through the lowest level (squad members).

1. Battalion Training Managers

Three major functions are performed at this level in operaing under the IETS.

a. *Determining Training Goals.* Following the procedures specified for the Battalion Training Management System (BTMS) training managers at this level determine the long range training goals and the priorities for accomplishment of these goals by their subordinate companies. The establishment of these battalion goals and priorities is done in coordination with the company commanders so that the different company readiness states and the training implications of these differing readiness states may be taken into account and provided for by the subsequent individual training.

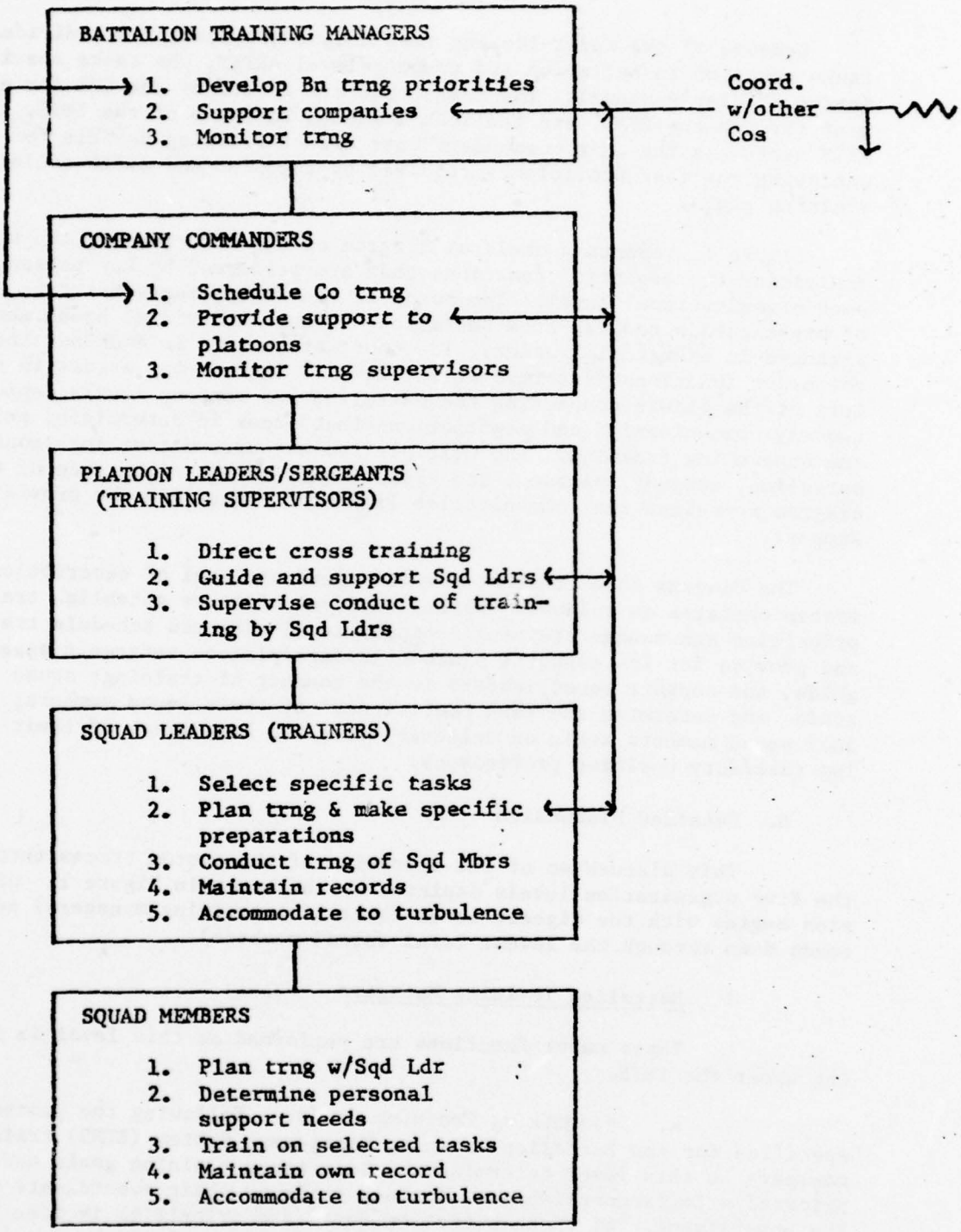



Figure 1. Diagram of Structure & Functions of IETS

b. *Support Training.* During conduct of the subsequent company individual training program, the battalion training managers receive and process requests for support and coordinate the provision of such support, and the required scheduling of equipment and facilities, across all companies. Battalion training managers provide and coordinate those items of support which company officers cannot provide from their own resources.

c. *Monitor Training.* As the day-to-day conduct of individual training proceeds in the companies, battalion training managers monitor training activities to provide proper guidance and command emphasis. This monitoring of training is accomplished through three activities:

(1) Information on the progress of company training is obtained through meeting with company officers and informal status reports. Such information is used to keep track of company progress toward achieving established training goals and to facilitate the provision of support for company training activities.

(2) Squad leaders are asked on a random basis to describe the progress of task training in general and the specific records that are being kept to track each man's developing task proficiency. The squad leaders provide the primary information on the current task proficiency of each squad member.

(3) Quality control checks are made to verify the squad leaders' training status information. Individual squad members are selected on a random basis to demonstrate their ability to perform the tasks which their squad leaders indicate they have learned to perform to standard.

The frequency with which these functions are performed is determined by the battalion commanders' assessment of the need for close monitoring of training. As the company level officers and training supervisors become more familiar with IETS procedures, responsibility for monitoring the conduct of day-to-day training will decentralize to the company level and battalion training managers will perform these monitoring activities only occasionally.

2. Company Commanders

Three major functions are performed at company level in operating under the IETS.

a. *Develop company training schedule.* Given the long range battalion training goals and the priorities for accomplishment of these goals, company commanders will assess their current readiness states and their ability to support these goals with the priorities of effort indicated. They will determine what areas of individual training they must pursue

within their companies to insure that their individual soldiers will be able to perform at the levels required by the stated battalion goals. They will develop their proposed long-range company schedules in coordination with battalion training managers.

b. *Provide support for conduct of training.* During the day-to-day conduct of individual training, requests for training support are received from the subordinate platoon leaders/platoon sergeants. These support requests, for training materials, equipment or facilities, that the platoon level training supervisors cannot provide from their own resources, are processed and coordinated at company level. Those requests that are beyond company capability or which require higher level coordination are referred to the battalion training managers as company support requests. Company commanders provide support for the conduct of training within their companies by using both their own internal resources and those available in common to the battalions' subordinate companies.

c. *Monitor supervision of training.* During the conduct of platoon-level individual training, the company commander monitors training activities to insure that the selected areas of individual training and the projected schedule for accomplishing the training are being implemented. The company commander engages in the same three activities as those employed by the battalion training managers in their monitoring of training:

(1) Information on the day-to-day progress and status of individual training in the platoon is obtained through meetings with their platoon leaders/platoon sergeants and from informal status reports. Information on the adequacy of the supervision, guidance, support, and assistance provided their subordinate squad leader trainers is gathered by observation of segments of training and by discussion with the platoon-level supervisors and squad-level trainers.

(2) As specified above for battalion training managers, company commanders also gather first-hand information on the current task proficiency of individual squad members by interviewing squad leaders at random to determine the extent of their information.

(3) The company commander also makes quality control checks to verify the accuracy of squad leaders' information by having randomly selected individuals perform tasks which they have learned.

The frequency with which these three specific activities are performed by company commanders is determined by the individual commander's judgment as to need. If the IETS is in the process of being implemented in the company, if the personnel of particular platoons are new to the system and need close attention, or if a particular platoon appears to be having difficulty in meeting company training goals, the frequency of these monitoring activities must be high enough to reflect command interest and to provide

the guidance and assistance necessary to insure that each platoon leader/ platoon sergeant is implementing the system according to the SOP. Over time, as the individual training supervisors and their squad leader trainers become proficient in employing IETS procedures, as shakedown occurs and implementation of the system becomes routine, company commanders will find it less and less necessary to monitor training closely. The monitoring of day-to-day training will be performed routinely by platoon level supervisors.

3. Platoon Leaders/Platoon Sergeants (Training Supervisors)

These individuals provide the first line supervisors required in operating under the IETS. To provide this supervision they perform the following three functions:

a. *Direct cross training.* An important aspect of the IETS is that it facilitates training within or across the several duty positions of an MOS. All materials (TTP, management guides, and record keeping forms) have been prepared in such detail that training can be readily conducted in any task(s) in any duty position(s) called for. The materials are so organized (each duty position package contains detailed training and testing materials and guides for their use) that it is a simple matter to assemble the materials wanted for any task or group of tasks in a given duty position or across several duty positions. Inasmuch as the squad leader trainer has immediate access to all these materials required in his squad members' MOS, he is in a position to provide task training within and across duty positions, depending upon the directions received from his supervisor.

The supervisor directs his squad leaders to conduct cross training as required to accomplish the company's needs for depth across critical duty positions and to efficiently achieve the optimum balance of cross training with single duty-position performance.

b. *Guide and support squad leaders.* In performing this function the first-line supervisors engage in three specific activities:

(1) They instruct squad leaders in IETS procedures and check them out to insure that they understand the system and its component materials so that they are competent to perform their squad leader trainer functions.

(2) On a timely basis, they insure the ability of their squad leader trainers to provide training in the specific duty position and subordinate tasks projected by the company training program.

(3) They arrange for any equipment/facility support that squad leaders will require, but cannot provide for themselves. They review such support requests from their squad leaders and take whatever steps are necessary to provide them with the support.

c. *Supervise conduct of training by squad leaders.* Three required activities are:

(1) They stay up-to-date on the current training status of the members of the squads under their supervision by close observation of the conduct of training and by conducting frequent planning/reporting meetings with their squad leaders. They frequently review training objectives, support needs, and progress with their squad leaders.

(2) They review the training status of each squad member and they remain current of each man's progress through the TTP and duty positions packages.

(3) They make frequent quality control checks to ascertain that each squad member's task performance matches with the current training status information. The supervisor performs the first-line quality control required by the IETS, insuring that the prescribed tasks, are being learned to the standards specified by the Soldier's Manual.

4. Squad Leaders (Trainers)

The decentralized character of the IETS gives all responsibility for the day-to-day conduct of individual training to the squad leaders. To discharge this responsibility they perform five distinct functions:

a. *Select specific tasks.* In accordance with the projected company training program, and with the guidance and assistance of their supervisors, they select the specific tasks in which they will conduct training. The major sources of information used in making these task selections are: the guidance received on duty positions to be addressed, the management guidelines and "road maps" for those duty positions, the task proficiency and training histories of individual squad members, Trainer Notebook records, and any performance analyses they have performed on their individual squad members.

b. *Plan training and make specific preparations.* In performing this function they do the following:

(1) Determine which individuals are to be trained in which tasks and lay out a provisional plan/schedule for conducting training.

(2) Insure their own competence to train on these selected tasks by reviewing the TTPs, and having themselves checked out by their supervisor.

(3) Coordinate their provisional plan/schedule and support requirements with their supervisor.

c. *Conduct training of squad members.* The IETS materials for training in the duty position task(s) are used (TTP, "road maps", management guides) along with related sources as specified in the TTP (TEC, FM, ACC). The conduct of task training proceeds generally as follows:

(1) Squad leaders conduct appropriate pre-tests to determine the present task proficiency of each squad member to be trained. This determines the starting point for each squad member.

(2) Squad leaders assess each individual's status, ability, and motivation to determine the appropriate training options to be chosen for accomplishing training. Depending upon the option chosen, the squad leaders arrange for training to be provided by:

- Themselves and/or their assistants as appropriate.
- Other squad members as peer tutors.
- The individual soldier's self-study of the TTP.

(3) Squad leaders conduct task and subtask checkouts, using their assistants where appropriate.

d. *Maintain records.* In performing this function squad leaders follow the procedures prescribed for maintaining an individual training record for each of their squad members by entering information in their Trainer's Notebook. They also instruct their squad members in maintaining their own personal training records in the Squad Member's Job Book.

e. *Accommodate to turbulence.* Personnel turbulence is a continuing problem to be considered in conducting individual training in units. In order to maintain training continuity in the face of high personnel turnover rates and to limit the disruptive effects of frequent inter-squad transfers, squad leaders take the following actions:

(1) They provide departing squad members with transcripts of their personal task-skill development records. The information is taken from the Trainer's Notebook and entered into the prescribed Squad Member's Transcript.

(2) They introduce arriving squad members into the squad's ongoing training program according to the prescribed IETS management procedures. Based upon their analysis of the entries on the arriving squad members' transcripts and with the guidance of their platoon supervisor,

they integrate the arriving members into the performance of functions a through d above for the duration of their assignment to the squad.

5. Squad Members

Because of the characteristics of the IETS, individual squad members may be training in quite differing job tasks at any given time and they may be proceeding at differing rates. Further, they may be training under supervision or on their own. Under the IETS, individual squad members perform the following five general functions.

a. *Plan training.* Squad members and squad leaders plan each individual's approach to developing the task-skill proficiencies that have been selected. Options available are: supervised instruction by squad trainers, peer instruction and practice, and self study.

b. *Determine personal support needs.* With guidance provided by their squad leader, individual squad members determine their personal support requirements if the peer-instruction and practice or self-study options have been elected.

c. *Train on selected tasks.* Following the plan that was worked out with their squad leader, and depending upon the particular task(s) to be learned, the training activities engaged in by the individual squad members will be:

(1) Under direction of squad leader or his designated assistant, and/or

(2) With other squad member peers, and/or

(3) In self-study.

d. *Maintain own records.* As squad members find they are ready for task or subtask checkouts, they arrange to be checked out by their squad leader or his designated assistant. They maintain a running record of their task-proficiency development in their personal training record, the Squad Member's Job Book.

e. *Accommodate to turbulence.* To insure that personnel turbulence and their transfers from squad to squad do not result in discontinuities in the record of their task-proficiency development, they do the following upon transfer:

(1) Request a copy of their personal training record, the Squad Member's Transcript, from the losing squad leader.

(2) Deliver the transcript to the gaining squad leader so that, with the gaining squad leader's guidance, they may become integrated into the new squad's ongoing training program. They then perform functions a-d above for the duration of their assignment to the squad.

APPENDIX B

DESCRIPTION OF IETS COMPONENTS

The components of the IETS fall into three general categories: instructional materials, records of performance, and management materials. The components under each category are briefly described below.

1. INSTRUCTIONAL MATERIALS

A. Task Training Package (TTP): Each TTP consists of a task lesson and a set of Task Training Outline (TTO) cards. The lesson provides the basic instruction for each job task. The lesson contains the actions, conditions, and standards for each task, and a specific list of all actions required to successfully complete the tasks. Also included in the lesson are the support requirements, and procedures for task training and checkout. The TTO cards outline the training content, task checkout, administrative procedures, and support requirements. These cards are intended to provide the trainer with a handy field reference during the conduct of training and checkouts.

2. RECORDS OF PERFORMANCE

A. Trainer's Notebook: The trainer's notebook is maintained by the squad leader and provides a record of the performance of each squad member on each job task. The information in the notebook will give the trainer the current proficiency level of each squad member.

B. Squad Member Transcript: This individual transcript contains a record of a given squad member's performance, and it is transmitted to subsequent units in the event of transfer. The transcript identifies the individual and his organization, the task number, and the date of successful task checkout.

C. Job Book: This book is a performance record that is maintained and retained by each squad member. The job book is used to direct and focus each squad member's individual study and practice. Tables 1 through 3 are examples of the three kinds of record keeping forms.

3. MANAGEMENT MATERIALS

A. Trainer/Supervisor Manual: This is the basic document that is used to instruct trainers and supervisors on the implementation and use of IETS. The manual provides an orientation to the system, procedural information on maintaining performance records, operation of TEC equipment, establishing training priorities, preparation for instruction, and conducting training and checkout.

B. Workshop Manager's Guide: The workshop guide provides information on the administration of an IETS workshop for trainers and supervisors. The primary document to be used by the workshop attendees is the Trainer/Supervisor Manual. There are separate guides for the Trainer and Supervisor Workshops, and they provide information on attendee and manager qualifications, facilities and materials required, preparation for the workshop, and administration of the workshop.

C. Course Management Plan: Each duty position package of instructional materials contains a course management plan which provides administrative guidance to the trainer or supervisor. The plan includes a list of resources required for training and checkout, a guide for self study, tips to the trainer, and the road map for the duty position. The road map illustrates tasks and clusters of tasks, and indicates any learning sequences that should be followed in the administration of training. Figure 1 is an example of a road map for the Radio-Telephone Operator.

TABLE 1. TRAINER'S NOTEBOOK.

LIGHT WEAPONS INFANTRYMAN
SKILL LEVELS I & II

All Duty Positions

Squad __ Plt ___ Co ____ Bn _____

| BASIC TASKS (DP / SL / NAME) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| - - - Battlefield Survival - - - | | | | | | | | | | | |
| FIRST AID | | | | | | | | | | | |
| Apply the Four Life Saving Measures (071-11A-0001) | | | | | | | | | | | |
| Clear the Air Passages | | | | | | | | | | | |
| Stop the Bleeding & Protect the Wound | | | | | | | | | | | |
| Treat for Shock | | | | | | | | | | | |
| Apply First Aid Measures for Burns (071-11A-0002) | | | | | | | | | | | |
| NUCLEAR, BIOLOGICAL, & CHEMICAL | | | | | | | | | | | |
| Maintain Protective Mask & Accessories (071-11A-0101) | | | | | | | | | | | |

TABLE 2

SQUAD MEMBER TRANSCRIPT

LIGHT WEAPONS INFANTRYMAN
SKILL LEVELS 1 & 2

Sqd Ldr's Name (print) _____

Signature _____

| Name | Duty Psn | Skill Level | Sqd | Plt | Co | Bn | Date |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| TASK NO. | DATE | TASK NO. | DATE | TASK NO. | DATE |
|---|---|---|---|---|---|
| | | | | | |

TABLE 3

JOB BOOK

Name _____ SSN _____

Duty Psn _____ Skill Level _____

LIGHT WEAPONS INFANTRYMAN
SKILL LEVELS I & II

All Duty Positions

Squad _____ Plt _____ Co _____ Bn _____

BASIC TASKS

| | |
|---|---|
| - - - Battlefield Survival - - - | |
| FIRST AID | |
| Apply the Four Life Saving Measures (071-11A-0001) | |
| Clear the Air Passages | |
| Stop the Bleeding & Protect the Wound | |
| Treat for Shock | |
| Resuscitate the Casualty | |
| Apply First Aid Measures for Burns (071-11A-0002) | |
| NUCLEAR, BIOLOGICAL, & CHEMICAL | |
| Maintain Protective Mask & Accessories (071-11A-0101) | |

DUTY POSITION ROAD MAP

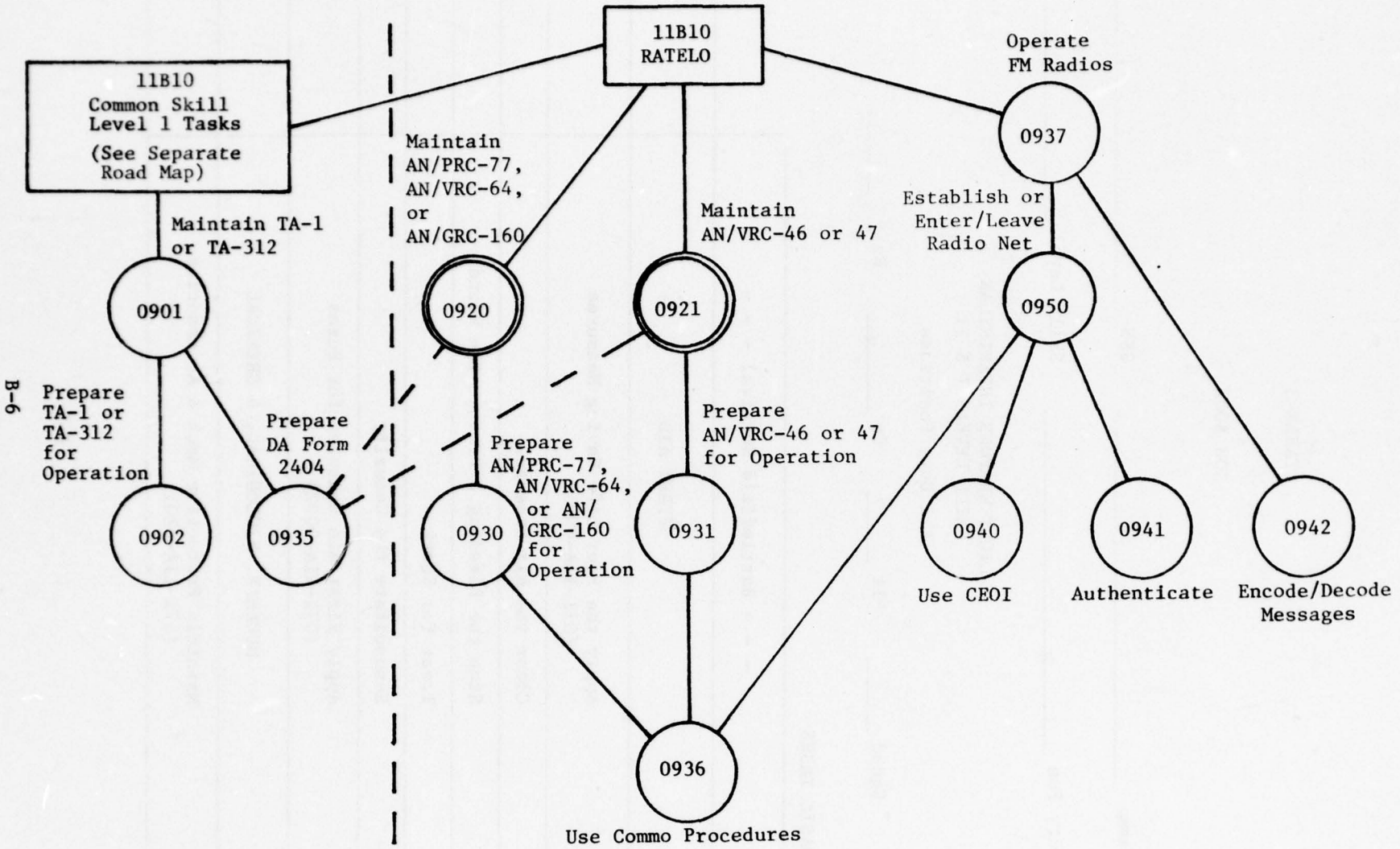



Figure 1. Example of a Road Map.

# APPENDIX C
# LIST OF DUTY POSITION AND TASK TRAINING PACKAGES

Instructional materials are being developed for the following 11B and 11C duty positions:

11B10
- Rifleman/Grenadier
- Machinegunner
- Radio-Telephone Operator
- Scout
- Wheeled Vehicle Driver
- MAW Crewman (90mm RCLR)
- MAW Crewman (DRAGON)
- HAW Crewman (106mm RCLR)
- HAW Crewman (TOW)

11B20
- Fire Team Leader/Assistant Scout Squad Leader
- HAW Squad Leader (106mm RCLR)
- HAW Squad Leader (TOW)

11C10
- 81mm Mortar Crewman
- 107mm Mortar Crewman
- 81mm Mortar Wheeled Vehicle Driver
- 107mm Mortar Wheeled Vehicle Driver

11C20
- 81mm Mortar Squad Leader
- 107mm Mortar Squad Leader
- Forward Observer
- Computer (M16 Plotting)
- Computer (Firing Chart)

The instructional materials for the duty positions listed above are in various stages of development, review, and revision. The status of training materials development for each duty position at the end of the second year is shown in Table 1.

During the second year of contract 0010, duty position instructional packages were completed for the Rifleman/Grenadier, Machinegunner, Radio-Telephone Operator, and Scout. Each of these duty position packages consisted of numerous task lessons, task checkout procedures, and task training outline cards. The number of task training packages in these duty position packages was 56 for the Rifleman/Grenadier, 10 for the Machinegunner, 11 for the Radio-Telephone Operator, and 17 for the Scout. The

56 TTPs developed for the Rifleman/Grenadier will also be included in the instructional packages for the other three positions. A total of 81 different Task Training Packages were completed as indicated on the following list, and because some tasks overlap duty positions the total number completed does not equal the sum of the four positions.

Instructional materials for the remaining duty positions will be completed early in the second quarter of the third contract year. When all duty position packages have been completed, there will be a total of approximately 200 different task training packages. This number cannot be precisely specified at this time because of the amount of development, review, and revision yet to be completed. This process has led to both combining and subdividing of tasks.

The task training packages that have been developed or will be developed include the following job tasks by skill level and MOS.

SKILL LEVELS 1 AND 2

11B/11C

| | Completed Task Training Packages |
|---|---|
| **FIRST AID** | |
| Apply the four life-saving measures (clear the air-passages, stop the bleeding, treat for shock, protect the wound). | X |
| Apply first-aid measures for burns. | X |
| **NUCLEAR, BIOLOGICAL, AND CHEMICAL** | |
| Maintain protective mask and accessories. | X |
| Put on a protective mask. | X |
| Take cover as protection against NBC hazards. | X |
| Decontaminate self and individual equipment. | X |
| Administer antidote to a nerve-agent casualty. | X |
| Apply artificial respiration to a chemical-agent casualty. | X |
| Determine personnel needs and personnel hygience in a chemical environment. | X |
| Identify NBC hazards and take appropriate actions. | X |
| **INDIVIDUAL FITNESS** | |
| Maintain individual physical fitness appropriate to unit mission. | X |
| **SECURITY AND INTELLIGENCE** | |
| Use challenge and password. | X |
| Process known or suspected enemy personnel. | X |

| | Completed Task Training Packages |
|---|---|
| Collect/report information - SALUTE. | X |
| Conduct day and night surveillance without the aid of electronic devices. | X |
| **CAMOUFLAGE, COVER, AND CONCEALMENT** | |
| Camouflage/conceal self and individual equipment. | X |
| Camouflage/conceal equipment. | X |
| Camouflage/conceal defensive positions. | X |
| Select temporary battlefield positions. | X |
| Construct individual defensive positions. | X |
| Clear fields of fire. | X |
| Move under direct fire. | X |
| React to indirect fire. | X |
| React to flares. | X |
| Move over, through, or around obstacles. | X |
| Estimate range. | X |
| **M16A1 RIFLE** | |
| Maintain an M16A1 rifle, magazines, and ammunition. | X |
| Load and unload an M16A1 rifle magazine. | X |
| Load, reduce a stoppage, unload, and clear an M16A1 rifle. | X |
| Zero an M16A1 rifle. | X |
| Engage targets with an M16A1 rifle. | X |
| Maintain a caliber .45 pistol and ammunition. | X |
| Load, reduce a stoppage, unload, and clear a caliber .45 pistol. | X |

| | Completed Task Training Packages |
|---|---|
| Engage targets with a caliber .45 pistol. | X |
| **LIGHT ANTI-TANK WEAPON (LAW)** | |
| Prepare an M72A2 LAW for firing; restore M72A2 LAW to carrying configuration - MANDATORY TASK. | X |
| Engage targets with an M72A2 LAW - MANDATORY TASK. | X |
| Apply immediate action to correct a malfunction on an M72A2 LAW. | X |
| **M203 GRENADE LAUNCHER** | |
| Maintain an M203 grenade launcher and ammunition. | X |
| Load, unload, and clear an M203 grenade launcher. | X |
| Zero an M203 grenade launcher. | X |
| Engage targets with an M203 grenade launcher and apply immediate action to reduce a stoppage. | X |
| **HANDGRENADES** | |
| Maintain hand grenades. | X |
| Engage enemy targets with handgrenades. | X |
| **MINES** | |
| Install/recover/fire an electrically armed Claymore mine. | X |
| Detect enemy mines. | X |

| | Completed Task Training Packages |
|---|---|
| Drive a wheeled vehicle cross-country. | |
| Drive a wheeled vehicle on roads, in vehicle parks, and in built-up areas. | |
| Drive a wheeled vehicle using blackout drive/ night vision devices. | |
| Start a wheeled-vehicle engine using auxiliary power (M151, M715, and M561). | |
| Perform an ESC (equipment serviceability criteria) inspection on a wheeled vehicle (M151, M715, and M561). | |
| Maintain required TAMMS records on a wheeled vehicle (M151, M715, and M561). | |
| Perform operator maintenance on a wheeled vehicle. | |
| Maintain field telephones (TA-1 and TA-312). | X |
| Install/operate field telephones (TA-1 and TA-312). | X |
| Maintain tactical FM radios (AN/PRC-77, AN/VRC-64, and AN/GRC-160). | X |
| Maintain tactical FM radios (AN/VRC-46 and AN/VRC-47). | X |
| Prepare/operate tactical FM radios (AN/PRC-77, AN/VRC-64, and AN/GRC-160). | X |
| Prepare/operate tactical FM radios (AN/VRC-46 and AN/VRC-47). | X |
| Use a Communications-Electronics Operating Instructions (CEOI) extract to determine call signs, frequencies, and item number identifiers. | X |

| | Completed Task Training Packages |
|---|---|
| Authenticate transmissions and encrypt/decrypt numbers and grid zone letters using KAL 61 with KTC 1400 numeral code. | X |
| Encode and decode messages using a tactical operations code, KTC-600. | X |
| Establish and enter or leave a radio net. | X |
| Transmit or receive a radio message. | X |
| Call for/adjust indirect fire (using grid coordinate method of target location and bracketing method of adjustment). | X |
| Identify terrain features (natural and manmade) on the map. | X |
| Determine the grid coordinates of a point on a military map using the military grid reference system. | X |

Skill Levels 1 & 2 11B

90-MM RCLR

Maintain 90-mm RCLR.

Boresight the 90-mm RCLR.

Load, reduce a stoppage, unload, and clear 90-mm RCLR.

Prepare range card for 90-mm RCLR.

Engage targets with 90-mm RCLR.

Prepare MAW position.

Camouflage/conceal MAW position.

| | Completed Task Training Packages |
|---|---|
| DRAGON | |
| Maintain Dragon system. | |
| Perform preoperational checks on Dragon tactical system. | |
| Prepare range card for Dragon. | |
| Engage targets and perform misfire procedures with the Dragon. | |
| TOW | |
| Maintain TOW weapons system. | |
| Load, correct malfunctions, unload, clear TOW. | |
| Engage targets with TOW. | |
| Make a TOW launcher self-test and preoperational inspection. | |
| Prepare a range card for a TOW. | |
| Construct TOW position. | |
| Camouflage/conceal TOW position. | |
| 106-MM RCLR | |
| Maintain caliber .50 spotting rifle, M8C. | |
| Load, reduce a stoppage, unload, and clear the caliber .50 spotting rifle, M8C. | |
| Maintain the 106-mm RCLR. | |
| Load, reduce a stoppage, unload, clear 106-mm RCLR. | |

| | Completed Task Training Packages |
|---|---|
| Engage targets with the 106-mm RCLR. | |
| Conduct 106-mm RCLR weapon system alinement. | |
| Prepare a range card for a 106-mm RCLR. | |
| Construct 106-mm RCLR position (mounted). | |
| Construct 106-mm RCLR position (dismounted). | |
| Camouflage/conceal 106-mm RCLR position. | |
| **M60 MACHINEGUN** | |
| Load, reduce a stoppage, unload, and clear an M60 machinegun. | X |
| Engage targets with an M60 machinegun. | X |
| Use aiming and firing stakes for the M60 machinegun. | X |
| Construct M60 machinegun position. | X |
| Maintain an M60 machinegun and ammunition. | X |
| Zero an M60 machinegun. | X |
| Prepare a range card for an M60 machinegun. | X |
| Mount/dismount an AN/PVS-2 (Starlight scope) on an M60 machinegun. | X |
| Zero an AN/PVS-2 (Starlight scope) to an M60 machinegun. | X |
| **BASIC INDIVIDUAL TECHNQIUES** | |
| Move as a member of a fire team. | X |

| | Completed Task Training Packages |
|---|---|
| Prepare and use aiming and firing stakes for the M16A1 rifle. | X |
| Prepare and use aiming and firing stakes for the M203 grenade launcher. | X |
| Emplace and recover M16A1 AP mine. | X |
| Emplace and recover an M21 AT mine. | X |
| Determine a magnetic azimuth between two known points on the ground. | X |
| Identify threat vehicles and weapons. | X |
| Recognize vulnerabilities of enemy armor to individual (M16A1 and M203) and crew-served (M60) weapons. | X |
| NIGHT VISION DEVICES | |
| Maintain AN/PVS-2 (Night Vision Sight). | X |
| Conduct surveillance using an AN/PVS-2. | X |
| Mount/dismount AN/PVS-2 on M16A1 rifle. | X |
| Zero AN/PVS-2 when mounted on M16A1 rifle. | X |
| Engage a target with a rifle using AN/PVS-2. | X |

Skill Levels 1 & 2 11C

| | |
|---|---|
| BASIC INDIVIDUAL TECHNIQUES | |
| Move as a member of a dismounted mortar squad (81-mm mortar). | |
| Call for/adjust indirect fire using the creeping method of adjustment. | |

| | Completed Task Training Packages |
|---|---|
| LAND NAVIGATION | |
| Determine azimuth using an M2 compass. | |
| Determine the elevation of a point on the ground using a map. | |
| COMPUTING | |
| Prepare M16 plotting board for operation and determine initial firing data for mortars (pivot point). | |
| Process subsequent FO corrections using M16 plotting board (pivot point). | |
| 81-MM MORTAR (GROUND MOUNTED) | |
| Place a ground mounted 81-mm mortar into action. | |
| Boresight 81-mm mortar. | |
| Perform safety checks on 81-mm mortar. | |
| Lay mortar for deflection and elevation. | |
| Prepare 81-mm mortar ammunition for firing. | |
| Maintain 81-mm mortar and associated fire control equipment. | |
| Remove a misfire from the 81-mm mortar. | |
| Engage target using fire without FDC. | |
| Refer sight and realine aiming posts. | |
| Reciprocally lay mortar using M2 aiming circle and place out aiming posts. | |
| Manipulate mortar for traversing and searching fires. | |

Completed Task Training Packages

107-MM (4.2-in) MORTAR (GROUND MOUNTED)

Ground mount 107-mm (4.2-in) mortar.

Boresight 107-mm (4.2-in) mortar.

Perform safety checks on 107-mm (4.2-in) mortar.

Lay mortar for deflection and elevation.

Prepare 107-mm (4.2-in) mortar ammunition for firing.

Maintain 107-mm (4.2-in) mortar and equipment.

Remove a misfire from the 107-mm (4.2-in) mortar.

Refer sight and realine aiming posts.

Reciprocally lay mortar using M2 aiming circle and place out aiming posts.

Manipulate mortar for traversing fire.

Engage targets using fire without FDC.

Skill Level 2 11B/11C

TRAINING

Conduct a performance-oriented training session.

LEADERSHIP

Inspect personnel/equipment.

Supervise maintenance on individual and TOE equipment.

Enforce preventive medicine program (includes personal hygiene).

| Completed Task Training Packages |
|---|
| Supervise subordinates. |
| Supervise/evaluate construction of individual positions. |
| Enforce noise, light, and litter discipline. |
| Emplace and recover field-expedient warning devices. |
| Emplace/recover pyrotechnic early warning devices. |
| Emplace/recover electronic anti-intrusion devices. |
| Determine a location on the ground. |
| Navigate from one position on the ground to another point. |
| Determine distance while moving between 2 points on the ground. |
| Measure a ground distance on a map. |
| Convert a magnetic azimuth to a grid azimuth (or a grid azimuth to a magnetic azimuth). |
| Determine a grid azimuth between two given points on a map. |
| Control 106-mm RCLR squad fires. |
| Control TOW squad fires. |
| Control rate and distribution of fire. |
| Organize a tank hunter/killer team. |
| Employ a tank hunter/killer team. |
| Control fire team movement. |
| Select fire team (scout vehicle) overwatch position. |

Destroy a mine in place.

Install/recover a mechanical ambush.

Prepare and detonate a demolition charge.

Clear demolition misfires.

Orient a map using a compass.

Orient a map to the ground by map-terrain association.

Determine the elevation of a point on the ground using a map.

Skill Level 2 11C

COMPUTER (M16 PLOTTING BOARD)

Prepare M16 plotting board for operation.

Determine firing data and process subsequent FO corrections for mortars using M16 plotting board.

Determine data for sheaf adjustment.

Determine data for re-registration and application of corrections.

Record information on firing data sheet (81-mm).

COMPUTER (FIRING CHART)

Prepare a firing chart for operation and determine initial firing data.

Process subsequent FO corrections using the firing chart.

Determine data for sheaf adjustment.

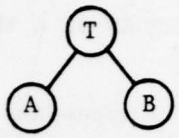
| Completed Task Training Packages |
|---|
| Determine data for re-registration and application of corrections. |
| Record information on firing data sheet (107-mm). |
| Call for/adjust a coordinated high explosive and illumination mission. |
| Call for/adjust a screening mission. |
| Determine vertical interval to adjust indirect fire. |
| Assist unit commanders in the preparation of fire support plan. |
| Locate a point on the ground using the polar coordinate method. |
| Prepare/operate an AN/TVS-4, (NOD). |
| Adjust fire using an AN/TVS-4, (NOD). |
| Construct mortar position. |
| Adjust fire without an FDC. |
| Lay mortar for direction using direct alinement method (fire without FDC). |
| Lay mortars for direction using M2 aiming circle. |
| Lay mortars for direction using M2 compass (ground mounted). |
| Lay mortars for direction using M2 compass (carrier mounted). |
| Supervise squad during the conduct of fire. |
| Determine a magnetic azimuth between two known points on the ground. |
| Identify threat vehicles and weapons. |

## APPENDIX D

## EXAMPLES OF A FRONT-END ANALYSIS, A TASK LESSON, & TTO CARDS

This appendix contains examples of a completed front-end analysis, a task lesson, and the TTO cards for the lesson. Work on the front-end analyses began with a HumRRO review of materials provided by CATB and the Infantry School. These materials were revised through a series of interactions between HumRRO, CATB, and the Infantry School. The rough draft front-end analysis included in this appendix (Prepare an M72A2 LAW for Firing; Restore M72A2 LAW to Carrying Configuration) reflects the revisions agreed upon by all three groups. The corrected and revised front-end analyses were used as the basis for TTP development. Following the example front-end analysis, a task lesson and TTO cards are given for "Apply Immediate Action to Correct a Malfunction on a M72A2 LAW".

TASK: Prepare an M72A2 LAW for Firing;
Restore M72A2 LAW to Carrying Configuration.




SUBTASKS:

A. Prepare an M72A2 LAW for Firing

B. Restore M72A2 LAW to Carrying Configuration

CONDITIONS: Given:

An M72A2 LAW in carrying configuration.

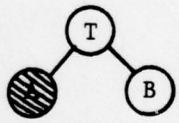
(NOTE: An expended LAW may be used for this lesson.)

STANDARDS: Within 30 seconds conduct a visual prefiring satety inspection. If the LAW passes the inspection:

Within 30 seconds extend the launcher and lock it in position, clear the backblast area, place the launcher on the shoulder in firing position, and move the safety handle to the arm position.

Restore the weapon to carrying configuration by placing the safety handle on SAFE, collapsing the launcher tube, placing the sights in the "down" position, and replacing the sling assembly and pull pin.

TRAINING OBJECTIVE




SUBTASK A: Prepare an M72A2 LAW for Firing.

CONDITIONS: Given an M72A2 LAW in carrying configuration.

(NOTE: An expended LAW may be used.)

STANDARDS: Within 30 seconds conduct a visual prefiring safety inspection. If the LAW passes the inspection:

Within 30 seconds extend the launcher and lock it in position, clear the backblast area, place the launcher on the shoulder in firing position, and move the safety handle to the ARM position.

ACTIONS TAKEN TO PERFORM THE SUBTASK

A. VISUALLY INSPECT THE LAUNCHER, CHECKING TO SEE THAT:

1. Tube is not cracked, punctured, or crushed.
2. All seals are intact.
3. Pull pin and trigger handle are in proper place. IF DAMAGED, DO NOT FIRE!

4. Data inscription on the right front end of the LAW bears the notation: "(W/COUPLER)".

B. IF LAUNCHER PASSES THE VISUAL INSPECTION:

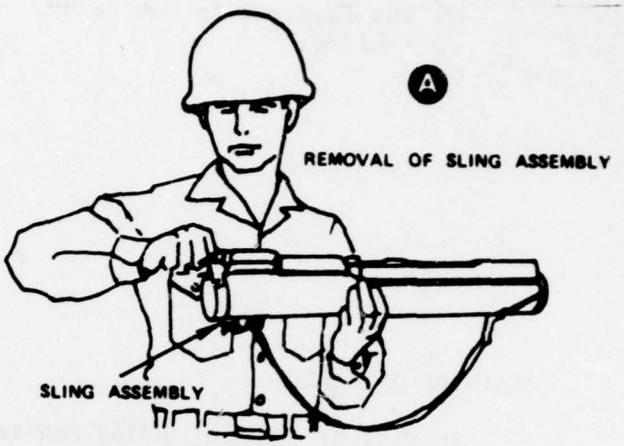
1. Remove the pullpin and rotate the rear cover downward, allowing the front cover and sling assembly to fall free (see Figure A). Do not discard the sling assembly until after the rocket is fired.

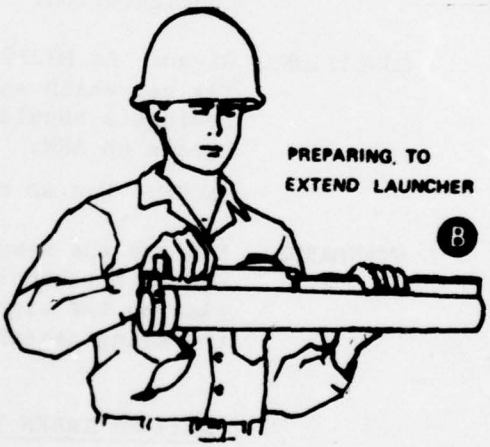
2. Extend the launcher by grasping the rear sight cover (see Figure B) and sharply pulling the launcher to the rear until it is locked in position (see Figure C).

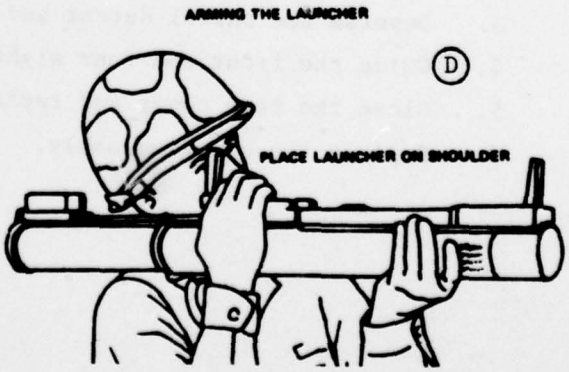
3. Insure the launcher is locked by reversing the motion of your hands and trying to push the launcher to the collapse position.

4. Check the backblast area (at least 40 meters to the rear of the launcher). If friendly soldiers are in the backblast area, warn them and wait for them to get out of the area before arming the launcher.

5. Now the weapon is ready to use. Pick it up and position it on your shoulder as shown in Figure D.

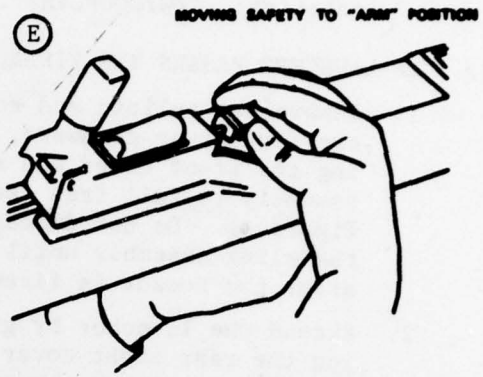


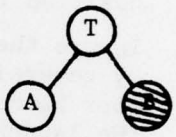


6. When the area is clear, move the safety handle to ARM (see Figure E).

   The launcher is now ready to fire.




TRAINING OBJECTIVE




SUBTASK B: Restore M72A2 LAW to Carrying Configuration.

CONDITIONS: Given: An M72A2 LAW, ready for firing, which should be set on the trainee's shoulder in firing configuration, with the safety handle on ARM.

(NOTE: Use an expended M72A2 LAW for this training.)

STANDARDS: Restore the weapon to carrying configuration by placing the safety handle on SAFE, collapsing the launcher tube, placing the sights in the "down" position, and replacing the sling assembly and pull pin.

ACTIONS TAKEN TO PERFORM THE SUBTASK

1. Return the safety handle to SAFE.
2. Remove the LAW from the shoulder.
3. Deperss the barrel detent and collapse the launch tube.
4. Guide the front and rear sights into position.
5. Close the rear cover and replace the poll pin.
6. Replace the sling assembly.

TRAINING OBJECTIVE

TASK: Apply Immediate Action to Correct a Malfunction on an M72A2 LAW.

CONDITIONS: In a field location with a firing range suitable for the LAW, given an M72A2 LAW. NOTE: an expended one may be used for training.

(T)

STANDARDS: Within two minutes after a misfire (real or simulated) immediate action is applied and an attempt is made to fire the LAW. NOTE: to simulate a misfire, the squad leader simply says: "You have a misfire".

If the weapon still fails to fire (real or simulated), the appropriate action is taken and the LAW disposed of, in accordance with the unit SOP.

## PREPARE FOR TASK TRAINING

*PREREQUISITES*

Prepare M72A2 LAW for Firing (071-11A-2201).

OBTAIN RESOURCES

1. Equipment: For each soldier, an M72A2 LAW (an expended one may be used for training).
2. Location: Field with a suitable firing range.
3. Training Aids:
   a. TEC Lesson - 948-071-0005-F, Operating the M72A2 LAW.
   b. Standard Training Aids - None.
   c. Other Aids - None.

PREPARATION

1. Rehearse and insure that assistant instructors know their job.

2. Use the TEC lesson. It is particularly good for defining a malfunction and emphasizing safety precautions.

## GUIDE FOR TASK TRAINING

TRAINING OBJECTIVE

(Tell the soldier in your own words.)

PRETEST

ORIENTATION

Give the soldier this information: "THE MOST COMMON MALFUNCTIONS ARE THE MISFIRE AND THE HANGFIRE. A MISFIRE IS A COMPLETE FAILURE TO FIRE, WHICH MAY BE DUE TO A FAULTY FIRING MECHANISM OR A FAULTY ELEMENT IN THE PROPELLING CHARGE EXPLOSIVE TRAIN. A HANGFIRE IS A DELAY (OF UNPREDICTABLE LENGTH AT THE TIME OF FIRING) IN THE FUNCTIONING OF THE PROPELLING CHARGE EXPLOSIVE TRAIN. A MISFIRE IS NOT AS DANGEROUS AS HANGFIRE IS, BUT BOTH MUST BE TREATED AS SUCH, SINCE IT IS IMPOSSIBLE TO IMMEDIATELY DISTINGUISH THEM."

SAFETY

KEEP THE WEAPON AS NEAR THE ON-TARGET POSITION AS POSSIBLE. BE CERTAIN THE BACKBLAST AREA IS CLEAR OF PERSONNEL, EQUIPMENT, AND FLAMMABLE MATERIAL. PLACE TRIGGER SAFETY HANDLE ON SAFE WHEN NOT ATTEMPTING TO FIRE. TAKE CARE IN REMOVING THE WEAPON FROM YOUR SHOULDER. DO NOT COLLAPSE THE LAUNCHER AFTER YOUR LAST ATTEMPT TO REFIRE.

DEMONSTRATION

Demonstrate how to apply immediate action to correct a malfunction on a M72A2 LAW.

TASK STEPS (Perform in order)

Apply the following immediate actions:

1. RESQUEEZE THE TRIGGER AND WAIT 10 SECONDS, if the round does not fire.

2. While keeping the LAW trained on the target, PLACE TRIGGER SAFETY HANDLE ON SAFE; REMOVE LAW FROM SHOULDER.

3. WAIT 1 MINUTE, DEPRESS DETENT, AND COLLAPSE LAUNCHER about 4 inches.

4. RE-EXTEND LAUNCHER AND PLACE ON SHOULDER.

5. PULL TRIGGER SAFETY HANDLE TO ARM POSITION; AIM AND ATTEMPT TO REFIRE.

Apply the following actions, if the weapon still fails to fire:

6. AIM LAW AT TARGET FOR 10 SECONDS longer.

7. PLACE TRIGGER SAFETY HANDLE ON SAFE; AIM LAW AT TARGET FOR 1 MINUTE longer.

8. DISPOSE OF LAUNCHER, as directed by the unit SOP.

SKILL PRACTICE

Have soldiers practice until they can perform to standards.

## GUIDE FOR TASK CHECKOUT

TRAINER PREPARATION

Assemble and set up for each soldier an M72A2 LAW (an expended one may be used for training).

SAFETY

KEEP THE WEAPON AS NEAR THE ON-TARGET POSITION AS POSSIBLE. BE CERTAIN THE BACKBLAST AREA IS CLEAR OF PERSONNEL, EQUIPMENT, AND FLAMMABLE MATERIAL. PLACE TRIGGER SAFETY HANDLE ON SAFE WHEN NOT ATTEMPTING TO FIRE. TAKE CARE IN REMOVING THE WEAPON FROM YOUR SHOULDER. DO NOT COLLAPSE THE LAUNCER AFTER YOUR LAST ATTEMPT TO REFIRE.

CHECKOUT

Read to the soldier: "AIM AND FIRE AT THE TARGET UNTIL A MISFIRE OCCURS (OR UNTIL I SAY, 'YOU HAVE A MISFIRE'). THEN, WITHIN TWO MINUTES, APPLY IMMEDIATE ACTION AND ATTEMPT TO REFIRE. IF THE LAW AGAIN FAILS TO FIRE (OR IF I AGAIN SAY, 'YOU HAVE A MISFIRE'), TAKE APPROPRIATE ACTION AND DISPOSE OF THE WEAPON."

STANDARDS

Within two minutes after a misfire (real or simulated), immediate action is applied and an attempt is made to fire the LAW.

If the weapon still fails to fire (real or simulated), the appropriate action is taken and the LAW disposed of, in accordance with the unit SOP.

SCORE, RECORD RESULTS, AND ANALYZE PERFORMANCE FAILURES.

## TASK REFERENCES

FM 23-33, 66-M Heat Rocket M72A1, M72A1F1, and M72, pages 8-11, 30, and 43.

SM Task Lesson 071-11A-2303, "Apply Immediate Action to Correct a Malfunction on an M72A2 LAW", page 2-III-C-3.

TTO TRAINING CARD

TASK: Apply Immediate Action to Correct a Malfunction on a M72A2 LAW 071-11A-2203

PREPARE FOR TASK TRAINING Card 1A

OBTAIN RESOURCES

Equipment: For each soldier, an M72A2 LAW (an expended LAW may be used).

Location: Field with a suitable firing range.

Training Aids: TEC Lesson 948-071-0005-F, Operating the M72A2 LAW.

PREPARATION

No special preparations required.

GUIDE FOR TASK TRAINING

TRAINING OBJECTIVE

Tell the soldier in your own words.

PRETEST

Must be conducted by the trainer.

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ORIENTATION (Read to the soldier) Card 1B

"THE MOST COMMON MALFUNCTIONS ARE THE MISFIRE AND THE HANGFIRE. A MISFIRE IS A COMPLETE FAILURE TO FIRE, WHICH MAY BE DUE TO A FAULTY FIRING MECHANISM OR A FAULTY ELEMENT IN THE PROPELLING CHARGE EXPLOSIVE TRAIN. A HANGFIRE IS A DELAY (OF UNPREDICTABLE LENGTH AT THE TIME OF FIRING) IN THE FUNCTIONING OF THE PROPELLING CHARGE EXPLOSIVE TRAIN. A MISFIRE IS NOT AS DANGEROUS AS HANGFIRE IS, BUT BOTH MUST BE TREATED AS SUCH, SINCE IT IS IMPOSSIBLE TO IMMEDIATELY DISTINGUISH THEM."

SAFETY (Read to the soldier)

"KEEP THE WEAPON AS NEAR THE ON-TARGET POSITION AS POSSIBLE. BE CERTAIN THE BACKBLAST AREA IS CLEAR OF PERSONNEL, EQUIPMENT, AND FLAMMABLE MATERIAL. PLACE TRIGGER SAFETY HANDLE ON SAFE WHEN NOT ATTEMPTING TO FIRE. TAKE CARE IN REMOVING THE WEAPON FROM YOUR SHOULDER. DO NOT COLLAPSE THE LAUNCHER AFTER YOUR LAST ATTEMPT TO REFIRE."

DEMONSTRATION

Demonstrate how to apply immediate action to correct a malfunction on a M72A2 LAW.

TTO TRAINING CARD

TASK: Apply Immediate Action to Correct a Malfunction on a M72A2 LAW 071-11A-2203

TASK STEPS: Card 2A

1. RESQUEEZE THE TRIGGER AND WAIT 10 SECONDS.
2. PLACE TRIGGER SAFETY HANDLE ON SAFE - REMOVE LAW FROM SHOULDER.
3. WAIT ONE MINUTE, DEPRESS DETENT, AND COLLAPSE LAUNCHER.
4. RE-EXTEND LAUNCHER AND PLACE ON SHOULDER.
5. PULL TRIGGER SAFETY HANDLE TO ARM POSITION: AIM AND ATTEMPT TO REFIRE..
   (If launcher fails to fire:_
6. AIM LAW AT TARGET FOR 10 SECONDS.
7. PLACE TRIGGER SAFETY HANDLE ON SAFE: AIM LAW AT TARGET FOR ONE MINUTE.
8. DISPOSE OF LAUNCHER.

SKILL PRACTICE

Have men practice until they can perform to standard.

TTO CHECKOUT CARD

TASK: Apply Immediate Action to Correct a Malfunction on a M72A2 LAW 071-11A-2203

GUIDE FOR TASK CHECKOUT Card 1A

TRAINER PREPARATION

Assemble and set up an M72A2 LAW for each soldier. (An expended LAW may be used.)

SAFETY (Read to the soldier)

"KEEP THE WEAPON AS NEAR THE ON-TARGET POSITION AS POSSIBLE. BE CERTAIN THE BACKBLAST AREA IS CLEAR OF PERSONNEL, EQUIPMENT, AND FLAMMABLE MATERIAL. PLACE TRIGGER SAFETY HANDLE ON SAFE WHEN NOT ATTEMPTING TO FIRE. TAKE CARE IN REMOVING THE WEAPON FROM YOUR SHOULDER. DO NOT COLLAPSE THE LAUNCHER AFTER YOUR LAST ATTEMPT TO REFIRE."

CHECKOUT (Read to the soldier)

"AIM AND FIRE AT THE TARGET UNTIL A MISFIRE OCCURS (OR UNTIL I SAY 'YOU HAVE A MISFIRE'). THEN, WITHIN TWO MINUTES, APPLY IMMEDIATE ACTION AND ATTEMPT TO REFIRE. IF THE LAW AGAIN FAILS TO FIRE (OR IF I AGAIN SAY, 'YOU HAVE A MISFIRE'), TAKE APPROPRIATE ACTION AND DISPOSE OF THE WEAPON."

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Card 1B

STANDARDS

1. Within two minutes after a misfire (real or simulated), immediate action is applied and an attempt is made to fire the LAW.

2. If the weapon still fails to fire (real or simulated), the appropriate action is taken and the LAW disposed of, in accordance with the unit SOP.

SCORE, RECORD RESULTS, AND ANALYZE PERFORMANCE FAILURES.