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A Combat Gaming Method for Tank Platoon Leader Training: TRAX I

ARI Field Unit at Fort Knox, Kentucky
Training Research Laboratory

September 1985

U. S. Army Research Institute for the Behavioral and Social Sciences

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A combat gaming method (TRAX I) for tactical training is presented. A one-sided controlled method of play is used in TRAX I to train leaders of tank platoons and crews on Division '86 platoon tasks. The game uses the Dunn-Kempf terrain board and components, with rules modified to speed play, simplify player procedures, and include some elements of combat not previously simulated. A Controller's Guide, lesson plans for four exercises, and Division '86 mission-task crosswalks are provided to aid implementation of TRAX I in unit training.

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A Combat Gaming Method for Tank Platoon Leader Training: TRAX I

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Education and Training

FOREWORD

Since the mid-1970s the U.S. Army has used battle simulation games as aids to support tactical training. Games have proved to be an effective and highly motivating means of training both officers and NCOs at low cost. However, the training provided by two-sided free-play games has not been formally linked to specific tasks and training objectives. The experience gained from gaming is highly variable and diverse, making evaluation of the benefits difficult.

Unit training programs are now beginning to be implemented based on AirLand Battle doctrine with Division '86 equipment and organizations. In these programs, unit missions and the tasks required to perform such missions become the major influence on the training conducted to develop unit readiness. Games that provide relatively unstructured training do not easily fit into unit training program with this new approach.

This research product presents a method of gaming designed to reduce this incompatibility. The TRAX I game was developed to investigate low-cost methods of leader tactical training and to examine gaming approaches useful in future computer-automated combat simulations and training devices. The game system should be of interest to those responsible for training small-unit leaders in active and reserve units. Elements of the game may also find application in efforts to evaluate tactical performance, investigate tactical training methods, or study operational doctrine and tactics.

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A COMBAT GAMING METHOD FOR
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A COMBAT GAMING METHOD FOR TANK PLATOON LEADER TRAINING: TRAX I

INTRODUCTION

TRAX I is a combat game adapted from the Dunn-Kempf and Blockbuster games available in the U.S. Army as training aids (U.S. Army Training Support Center, 1984). The rules and procedures used in TRAX I have been designed to support leader training in Division '86 operations and tactics at the platoon level, particularly in active Army units.

Methods of play used in the TRAX I game system were developed to shorten preparation and playing time, reduce complexity of rules and procedures, and increase training value by comparison with previous games. Many of the changes introduced in TRAX I were based on recent accounts of Army experience in using games (Probsdorfer, 1980; Borgman, J.D. and Hooverson, R.L., 1981; Sharpenburg, 1983). Other modifications were suggested by research on games (reviewed by Henricksen, Jones, Sergeant and Rutherford, 1984) and new Division '86 doctrinal and training literature (summarized by Brown, 1984; Sullivan, 1984). While an effort was made to retain accuracy in the simulation of combat, priority in TRAX I was given to the subjective reality of player experiences and the validity of lessons learned in training. For training purposes, the representation of the qualitative nature of combat events was considered more important than precise quantitative fidelity.

DESCRIPTION

Training exercises using TRAX I focus primarily on the decisions and actions required of the platoon leader and platoon sergeant to lead the platoon in combat, while communicating with higher command levels and adjacent units. Exercises may be conducted with the platoon leader and platoon sergeant, each maneuvering and fighting two miniature vehicles on a terrain board to represent the actions of the two sections in the platoon. If both leaders are reasonably knowledgeable and experienced, the tank commanders (TCs) may be included in the exercise, with each individual handling his own vehicle. In this case, the exercise focuses more on coordination of action within the platoon, and effective command and control of the unit by the platoon leader.

Players in TRAX I carry out only actions required to move, shoot, communicate, and protect their vehicle and unit. Controllers perform all other game mechanics required to create the combat environment in which the players operate, and to produce the consequences following from player actions. Controller duties and responsibilities are presented in Appendix A, together with a detailed explanation of activities required to conduct TRAX I exercises. Rules and procedures followed by players are described as simply as possible in the Basic Rules outlined in Appendix B. Additional rules relating to specific conditions or actions required for particular training objectives were confined to the Advanced Rules in Appendix C.

The TRAX I exercises are directed and managed by a senior Instructor/Controller, with the assistance of a Fire Controller and an Opponent Force (OPFOR) Controller. The Instructor/Controller issues orders, controls the sequence of play, and leads the after-action review following the exercise. During the exercise, the Instructor/Controller simulates all communications from higher level elements, and other units in the company team. The Fire Controller determines the effects of direct fire by the U.S. force and OPFOR, and schedules and locates indirect fire for both sides. The OPFOR Controller handles the Warsaw Pact forces and carries out other actions on the terrain board as needed to assist the Instructor/Controller and Fire Controller.

TRAX I exercises involve one-sided play by the U.S. platoon in response to situations created according to a preplanned, controlled scenario. Scenarios provided for TRAX I in Appendix D are based on several mission Situational Training Exercises (STXs) outlined in the ARTEP Mission Training Plan (MTP) for the tank platoon, FC 17-15-1. The exercise scenarios are designed to provide practice on collective tasks listed as prerequisites to an STX, while the platoon operates independently or as part of a company team to accomplish a given mission. Tasks included in each scenario are listed in Appendix E, along with the tasks required by each STX in the MTP.

Since TRAX I is intended for use in unit training, it can be conducted in classroom facilities locally available in the company or battalion. The required equipment is provided in the Dunn-Kempf game kit and vehicle models obtained from local training aids support, supplemented by components easily made from common office supply items. The needed written materials may be reproduced from this report, manuals, and local Standing Operating Procedures (SOPs) and Communications-Electronics Operation Instructions (CEOIs). Requirements for facilities, equipment, and materials are outlined in Appendix F.

EXERCISE PREPARATION

Planning and Setup

Although commanders at each level are primarily responsible for training their own units, establishing a game control team at battalion level avoids duplicating the considerable time and effort needed to prepare and become proficient in conducting game exercises. The senior member of the control team would plan and manage platoon gaming. The training would be planned to coordinate with other scheduled training events based on tactical training needs specified by the company commanders and platoon leaders. The senior member of the team would also supervise the activities of the team required to prepare game exercises, and act as the Instructor/Controller during exercises.

Recommended activities to be carried out by the Instructor/Controller and control team members are as follows:

Training Objectives. Determine the overall goals and training objectives to be met by TRAX I exercises. The general goals in relation to unit missions should be established in the original tasking given the

Instructor/Controller. If not, further direction should be obtained from the tasking authority. Derive specific objectives from platoon tasks in the STXs and FTX, and other collective training events scheduled to support unit mission readiness. Review FC 17-15-1, local SOPs, and related training literature to inventory tasks subsumed under the STXs and FTXs. In coordination with subordinate unit commanders, identify the leader personnel to be trained, informally assessing their background, experience, and training needs in relation to the training objectives. Establish priorities among training needs.

Game Assessment. Examine Appendices A-F to become familiar with the TRAX I game system. Use the exercise plans (Appendix D) and mission-task crosswalk (Appendix E) to relate the available exercises to training needs. Assess the suitability of TRAX I exercises to meet the training objectives and needs established for unit leaders. Note tasks that might be omitted or added to the scenarios to better fit local needs, and additional scenarios that need to be developed based on STXs not represented in the available materials. Inform the unit commanders of those objectives and needs that can and cannot be trained in TRAX I exercises.

In terms of the unit training program outlined in The Armor Task Force Training Plan (FC 71-11), and the leader training guidance given in that document and in FC 17-15-1, combat gaming with TRAX I corresponds to the "walk" stage in the "crawl-walk-run" philosophy of training. The suitability of gaming exercises must be judged in term of their effectiveness in bridging the gap between initial "crawl" training and later STX and FTX at the "run" stage. Training at the "crawl" stage should be provided by unit commanders for all of the training needs identified. Some alternative method of "walk" training should be devised for those needs that cannot be met by game exercises.

Assemble Resources. Select and obtain assignment of controller personnel to duty with the control team. Supply the controllers with copies of the Controller's Guide (Appendix A), Basic and Advanced Rules (Appendix B and C), and Exercise Plans (Appendix D). Based on Appendix F, obtain required game kits, supplies, and facilities. Supervise the team in setting up the equipment in the facility, and construction of components not included in the kits. Schedule and conduct controller training as outlined in the following section on Controller Personnel. At a minimum, two days are required to learn the controller duties and become familiar with the four exercises in Appendix D. Reproduce rules and other materials used by the players.

Prepare Scenarios. With the assistance of the control team prepare modified exercise plans, and any new additional exercises needed. Examine and select advanced rules used in additional scenarios. Tryout modified and additional scenarios with the control team and revise as necessary to insure that they are workable and produce the intended training. In the tryouts, anticipate alternative possible player actions. Plan how controllers react to keep the scenario on track, so that the required tasks cannot be bypassed. If little initial preparation time is available, development of additional exercises may have to be done after the first cycle of exercises is completed by the platoon.

Schedule Training. Coordinate the schedule of game exercises within the overall unit training schedule. Provide two days per platoon if only the platoon leader and platoon sergeant are to be trained in each platoon using the four exercise scenarios provided in Appendix D. Allow two additional days per platoon if the exercises are then repeated with the TCs included as players.

Make sure that prerequisite tactical training events precede the gaming exercises that build on those prerequisites, and that gaming exercises precede the corresponding field STXs and FTXs. Allow for additional exercise repetitions or new exercises designed to correct deficiencies identified in the STXs and FTXs. Anticipate and avoid conflicting duties required of controller and player personnel.

Controller Personnel

Qualifications. The Instructor/Controller should be a company grade officer with considerable field exercise experience. He should possess a good working knowledge of Division '86 and OPFOR doctrine, tactics, and equip ment, from company level down to individual weapon systems. The OPFOR controller should be a junior officer or senior noncommissioned officer (NCO) with a good working knowledge of threat weapon systems and tactics. Interest and experience in wargame miniatures or board games is also desirable. The Fire Controller may be a relatively junior NCO who is proficient in map reading, familiar with indirect fire procedures, and who can handle numerical data and tabular information quickly and accurately. The extra replacement controller should be an NCO capable of serving in either the OPFOR or Fire Controller positions.

Training. The preparation of the Controller personnel is a critical factor influencing the effectiveness of training conducted with TRAX I exercises. Controllers must acquire a thorough knowledge of the TRAX I rules and procedures to avoid mistakes or excessive interruptions and delays in the course of play. In a one-sided preplanned exercise, the controllers must become thoroughly familiar with the exercise scenario, and be able to create the intended sequence of events and situations by executing the right events at the right time.

The Controllers Guide (Appendix A) should be read together with the Basic Rules (Appendix B). Each controller should pay particular attention to the exercise activities that he will be expected to perform, referring back to related sections of the Basic Rules to understand how his actions affect those of the players. The controllers should also become familiar with the MTP guidelines on training evaluation and conduct of after-action reviews given in FC 17-15-1, Chapter 2.

After studying these materials, the controllers should be trained using a hands-on approach. Walk through the Basic Rules section by section, with each controller carrying out both controller and player actions as described, using the appropriate game components on the terrain board. Resolve any alternative interpretations or ambiguities encountered in the Basic Rules. Then, walk through each of the scenarios with each controller carrying out his part and the extra controller playing the role of platoon leader and platoon sergeant. Trade off positions so that the replacement has experience

in some scenarios as both Fire and OPFOR Controller. Point out the training objectives in each scenario, and explain what the controllers should be observing and recording for evaluation and review. Tryout any planned modifications to the scenarios to delete or add tasks, and add notes to the scenario materials to record the changes. Practice conducting an after-action review with each scenario. Repeat the walk-throughs if time permits, speeding up the rate of play and controller actions.

Exercise Development

Gaming exercises using TRAX I are designed to approximate the training provided by the model STXs in FC 17-15-1. The procedure followed to develop the sample exercises appearing in Appendix D is described in this section. Tactically experienced officers familiar with the relevant training literature should have little difficulty in applying a similar approach to develop exercises meeting local needs.

Scenarios. Four sample scenarios were developed to parallel mission STXs outlined in FC 17-15-1. Tasks included in the exercises were derived directly from the prerequisite platoon tasks listed for each STX. The scenarios include two Tactical Road March missions (based on STX A), a Movement to Contact/Hasty Attack mission (based on STX E and F), and an Occupy Battle Position/Hasty Defense mission (based on portions of STX D). The two road marches provide the setting for initial practice with the TRAX I rules and procedures in the context of a simple mission. After this introduction to the method of play, the remaining two exercises support basic attack and defense training under more complex and difficult circumstances.

A five step procedure was followed in developing the scenarios, with the initial outline of each scenario prepared by an experienced Armor officer. First, the prerequisite platoon tasks and drills, and any other tasks included in each STX, were determined from the mission-task diagrams and crosswalks. The conditions and standards for each task were reviewed, along with the STX outlines, to become familiar with the situations in which the tasks are performed. Tasks for each scenario were then sequenced in an order that might be expected under the combat circumstances described for the STX.

Second, the Dunn-Kempf board was examined to select initial and final platoon positions required to perform the mission. Routes and fighting positions were selected between the initial and final positions to provide appropriate conditions for task performance in the planned order. The task secquence was modified as needed to better fit the terrain available, to produce natural transitions from task to task, and to progress toward mission accomplishment.

Third, the initial unit situation, mission orders, and external events required to trigger performance of each task were developed in detail. Some creativity was required to conceive concrete, realistic situations that are likely to be encountered in combat, yet are not entirely predictable so that the players are caught a little off-guard. In some cases, features of the terrain board suggested a plausible event providing conditions for a task, or an advantageous OPFOR weapon site. For example, performing an unscheduled halt is a task included in the Tactical Road March. Observing a train track

or bridge on the route served to suggest ideas of finding the route blocked with a train, or finding the bridge down, requiring the platoon to halt.

Fourth, an OPORD was written out and a map overlay prepared with routes and tactical symbols, keeping in mind a kind of narrative of the events and actions taking place in the mission. The orders and overlays portray realistically the information and instruction given by the company commander to the platoon leader as they might be in an actual situation in combat. An exercise scenario outline was then written in the format of a training schedule. Listed in columns were (1) the tasks and drills to be performed in order, (2) the estimated time (relative to first platoon movement at H-hour) that events should occur to initiate each task or drill, (3) performance elements executed by the platoon and leader as appropriate in the situation, and (4) actions performed by the controllers to produce events or respond to U.S. player actions.

Fifth and last, the controller team pretested the exercise to discover needed changes, following the scenario outline step-by-step on the terrain board. The controllers checked the estimated times against the possible movement distances, examined how well the terrain and OPFOR positions and actions fit the needed task conditions, and identified possible player actions that could bypass the next tasks. The order, routes, and events were then revised to produce a likely sequence of situations, allowing player and controller actions to push the players from one task to the next in an unobtrusive manner.

In responding to the situations occuring in each scenario, players are not forced to execute a prescribed "school solution." However, each situation is set up to limit the reasonable alternatives available. Inappropriate actions are met with OPFOR reactions and commander communications that further narrow player options, moving them toward some resolution of the problem situation. Thus the players may perform any one of a number of plausible alternative actions leading to a common end point and the next situation. Players are allowed as much freedom as possible to employ initiative and decisive action to accomplish their mission.

Lesson Plans. The training structure and materials provided for STXs are easily modified and combined with the game scenario to make up exercise lesson plans. A format similar to that used in FC 17-15-1 and other MTPs is followed, with some changes adapting it to the game situation, as shown in Appendix D.

The primary training objectives for an exercise were defined as the tasks and drills listed as prerequisites for the related STX and included in the scenario. Main teaching points were developed for each task or drill based on tactical principles illustrated by the scenario situations, and consistent with both Division '86 doctrine and applicable task standards. The standards for each task to be evaluated during the exercise comprised the performance elements listed in the scenario outline.

The training procedure for conducting the exercises is described in the Controller's Guide (Appendix A). However, some guidance on conduct of after-action reviews is provided in each lesson plan, based largely on guidance

contained in FC 17-15-1. Prerequisite training, and some additional training to follow-up on the results of the game exercises, is also indicated.

IMPLEMENTATION

The TRAX I gaming method is intended for use as an integral part of collective training programs based on FC 71-11 and FC 17-15-1. As such, its primary application is in training active armor units. Under appropriate conditions, the game and exercises may be of value in institutional and reserve component settings. The game system may also be useful as a vehicle for research and development efforts on issues relating to platoon tactics and leader performance or training. The present section discusses several considerations that may affect these applications.

Unit Training

The MTP FC 17-15-1 outlines plans for three FTXs, each combining three STXs. Plans for eight STXs are given to provide training for the most common and important ARTEP missions. A mission/task diagram and tables specify the platoon tasks contained in each STX. The MTP recommends that combinations of STXs and FTXs be used to train each task from two to six times per year, quarterly for most tasks.

There is probably less need for terrain board exercises in units that have facilities and resources to conduct two or more STXs per quarter. In this case, it is recommended that TRAX I be used on a monthly basis (4-8 hours) to prepare for upcoming STXs. The sample exercises provided in Appendix D should be completed first. This will allow players to master the game system and practice the basics of unit movement, actions on contact, and attack and defense missions. In the first month, the Road Marches and Movement to Contact/Hasty Attack exercises can be completed in two four hour periods. The Occupy Battle Position/Hasty Defense exercise can be completed in the second month in an eight hour period, either on one day, or an afternoon and following morning. In the the third month, selected exercises may be repeated, or a new exercise used relating to a planned STX.

When exercises are repeated, they may be used unmodified for retraining poor initial performance, or for cross training subordinates. In other cases, the exercises may be modified by changing general conditions (mud, snow, night, etc.) or specific conditions (sequence of events and tasks, positions of OPFOR, strength of OPFOR, additional tasks, etc.) to increase their difficulty. New scenarios may be based on the MTP missions and STXs, or local missions and planned field exercises.

In units that have resources for one STX or fewer per quarter, more frequent gaming exercises with TRAX I may help to compensate for this limitation. An additional series of TRAX I exercises should be planned to include missions and tasks that are not trained with the recommended frequency in field STXs or FTXs. As much as 12-16 hours per month could be devoted profitably to gaming in these units.

Reserve units will have little opportunity to conduct STXs and FTXs except during annual training periods. Given the time available for monthly training periods, it is unlikely that even 4 hours could be set aside each month for gaming exercises for leader personnel. However, a reserve unit should be able to cycle through the sample exercises at least once during nine months, and repeat some portion of the exercises based on identified training needs in the last quarter of the year preceding annual training.

In the reserve context, the exercises may have to be broken down into sections and completed in successive training periods. It should be beneficial to do a little gaming each month, rather than concentrate all of the exercises into one or two weekends.

Mini-exercises based on 2-3 related tasks may also be useful before trying to complete exercises covering an entire mission. Such mini-exercises can be extracted from the sample scenarios by breaking them down into segments. The Instructor should summarize the platoon orders and platoon actions leading up to the starting point of the mini-exercise, to provide the proper context for later events and tasks.

Many of the officers and NCOs in reserve units may have little Armor experience. For such individuals the instructor should plan some hands-on task and drill training with demonstrations and walk-throughs to teach the basic techniques prior to gaming exercises.

Institutional Training. Heavy training loads and the large number of objectives included in institutional training courses virtually preclude any extensive use of combat gaming. The TRAX I exercises or any similar exercises can be used in these courses only if they are sufficiently effective to replace some part of the training currently scheduled.

In Armor Officer Basic (AOB), for example, with about 25-30 students per platoon and four platoons, seven terrain boards and 21 controllers would be required to complete even one four-hour exercise over two days in the training schedule. To reduce the resources to managable proportions, probably only a few mini-exercises (such as those described above for reserve units) could be used with a small selection of TRAX I rules. Such training on some highly critical tasks may prove beneficial in preparing AOB students for the "Ten-Day War" field exercises. It remains to be seen whether the training that it would replace is more or less beneficial in an equal period of time. The decision would likely come down to a judgment on whether greater proficiency on a small number of tasks is preferred over broader familiarization with a larger number of tasks.

Some training with TRAX I would be recommended for Armor Officer Advanced Course (AOAC) students if this method of play should be adopted as a standard for leader training in units. The AOAC training should emphasis practice in the controller roles, and preparation for training controllers. This would encourage the implementation of TRAX I when these officers are assigned to command or staff positions in their later units.

Perhaps the most feasible applications of TRAX I are to be found in NCO courses that are designed to prepare individuals for tank commander or platoon sergeant positions. The number of students is usually smaller at any

one time than is the case in officer courses, and the range of objectives is somewhat narrower. With an instructor taking the Platoon Leader position and executing preplanned actions and communications, the TRAX I method could be used for task training with mini-exercises, and full mission exercises like those in Appendix D. As a hands-on method permitting immediate feedback, the combat gaming procedures should be motivating and effective with new NCOs, and would most likely be superior to any substitute classroom training.

Research and Development. Potential research and development applications essentially fall into three categories. First, the TRAX I method and procedures provide a context for studying tactical training that is more manageable and controllable than the typical field exercise. The training may focus on a few specific tasks in a mini-exercise, or on missions with a specific combination of tasks. For these applications, special scenarios will have to be designed that have the specific task content and permit the variation or control of variables pertinent to the research questions.

Second, and partly subsumed by the first, the TRAX I procedures and exercises provide a context in which elements of tactical leader performance can be observed and measured. Thus the effects of prior training and transfer to combat gaming can be evaluated using appropriate data collection instruments with TRAX I.

The relationship of performance measures and transfer impact of TRAX I training on performance in field exercises has not yet been investigated, so the external validity of performance and training in TRAX I remains to be established. Such validity has some presumptive support based on prior research with similar games. However, external validity should be examined in any future research applications to insure that results of the gaming do not lead to misleading conclusions. The fact that TRAX I exercises are closely tied to field STXs from the MTP should facilitate that design of the required field tests, and the opportunity to obtain troop support for such tests.

The third potential application involves the examination of current tactical doctrine for Armor operations, or development of future doctrine. Current doctrine can be economically tested in a wide variety of circumstances, helping to provide insight into fruitful questions to be addressed by further research with combat models or field tests. Special data or rules may be added to TRAX I to represent future equipment, threats, or other combat conditions. A number of situations may be gamed to aid planning of work with models or field tests to examine conclusions derived from gaming exercises. Tradeoffs among possible solutions to future problems can be examined, whether based on equipment, organization, operational procedures, or personnel and training. In such applications, like the training and testing applications discussed above, the external validity in relation to the resulting outcomes of combat should always be addressed empirically to the extent possible.

VALIDATION

The usability of the TRAX I game system was verified in tryouts with Armor school students enrolled in the Armor Officer Basic (AOB) and Armor Officer Advanced Course (AOAC). The two tactical road march exercises were

performed by 12 pairs of AOB students and 16 pairs of AOAC students. Limitations on student time prevented extensive tryouts with the attack and defense exercises, but the scenarios were found to be workable in tryouts with two student groups from each course.

Players were able to learn the rules, observe a demonstration, and start an exercise within 30-45 minutes. They completed planning, play, and an after-action review on both road marches in 2-3 hours. The more experienced AOAC students averaged 2.5 minutes to complete turns of play, while the AOB students averaged 3.5 minutes.

An armor captain without previous experience in company command served as Instructor/Controller in these tryouts. He was able to keep play moving and to simulate communications with the platoon without much difficulty after the first use of each scenario.

ARI staff members served in the other controller positions. The OPFOR controller had no difficulty in following the planned scenario, adjusting his actions to help the Instructor/Controller keep the exercise on track. The Fire Controller was able to handle both direct and indirect fires. Some small delays in play were required when there were heavy exchanges of fire, but in many cases he was able to predetermine firing results to allow play to proceed without interruption. In the more complex attack and defense exercises, the Fire Controller assisted the OPFOR controller when a large number of vehicles were in action to help avoid slowing the rate of play.

With few exceptions the players liked the game, judged it a valuable method of training and wanted more opportunity to use it. The AOB students were particularly enthusiastic, indicating that the game experience was better for training on some tasks than the field training they had received so far. Both groups considered the requirements for all-round security, rapid and coordinated actions on contact, and brief and clear communications to be the most valuable aspects of the experience. The AOAC students felt they could make good use of the game in training subordinates. A few expressed some reservations about the validity of some technical aspects of the rules relating to weapon capabilities.

Responses to post-exercise questionnaires were highly positive in both groups. The most encouraging testimonial was provided by the 93% who agreed that TRAX I Provided "effective" or "very effective" training. Among those AOAC students with previous experience in playing Dunn-Kempf, 91% agreed that TRAX I provided "better" or "much better" training than the original method of play (most had not used the revised version of Dunn-Kempf). The worst response on the negative side concerned the fidelity of the combat simulation. Only 65% overall considered TRAX I to be an "accurate" or "very accurate" simulation, while 14% agreed that it was "somewhat" or "very inaccurate", with the remainder in-between. However, TRAX I was considered more accurate than Dunn-Kempf by 66% of those officers that had used the latter game.

While the training effectiveness of TRAX I was not evaluated by effects on later field performance, there is indirect evidence that suggest that training with the game should prove to have some value. Observations of player performance indicated several common faults. To briefly summarize the

observations, it is interesting to note that many of the same kinds of incidents and tactical problems observed at the National Training Center (NTC) at the platoon level (e.g., Furlong, 1984; Wagner, 1984) also were found to occur in the game. Overall, the performance of the AOAC officers was much superior to the AOB officers. Performance reflecting the difference in prior training and experience between the groups should be observed in a valid game. Furthermore, after only one exercise repetition performance improved in several aspects of play, with the AOB officers showing the greater improvement in most cases.

While the effectiveness of training with TRAX I cannot be guaranteed on the basis of the evidence gathered to date, the preliminary indications are favorable. At the very least, the STX-like game exercises provide the instructor with ample opportunity to observe and correct common tactical errors. With proper follow-through in after-action reviews, there is every reason to expect that game exercises should contribute to the effectiveness of later field training.

CONCLUSIONS

The TRAX I game system permits frequent tactical training at low cost for leaders of small units and crews. The training method is compatible with the programs, objectives, and training approaches currently recommended for Division '86 Armor units. Modifications of the Dunn-Kempf game introduced in TRAX I have been reasonably successful in reducing playing time, simplifying rules and procedures for players, and tying game practice closely to Division '86 training objectives. These advantages are somewhat offset by the larger number of controllers and increased controller training required to operate the game system effectively.

Without question, numerous features of the TRAX I game system can stand further improvement. Nevertheless, the playing techniques and training methods demonstrated in TRAX I provide a workable basis for systematic application of tactical gaming in Division '86 unit training programs.

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APPENDIX A
TRAX I CONTROLLER'S GUIDE

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TRAX I CONTROLLER'S GUIDE

Introduction

TRAX I is a combat game adapted from the Dunn-Kempf and Blockbuster games available in the U.S. Army as training aids. TRAX I has been designed to support leader training in Division '86 operations and tactics at the platoon level, particularly in active Armor units. In contrast to most other games used for training, a one-sided controlled method of play is used to ensure practice on predetermined training objective. An Instructor/Controller, Fire Controller, and OPFOR Controller work together to simulate combat environment in which the tank platoon operates.

The preparation of controllers is important to the effectiveness of training provided by TRAX I. The controllers must employ rules and procedures properly and follow exercise plans skillfully to produce the full benefits of game experience for the players.

This guide describes controller responsibilities and activities required to conduct training with TRAX I. Controllers should read the TRAX I Basic Rules before studying the remainder of this Guide in detail. Controller's should be thoroughly familiar with the contents of the Guide and Basic Rules, and have practiced following the exercise plans before using them in training.

Controller Duties

Duties performed by each controller during a TRAX I exercise are outlined below.

a. Instructor/Controller.

(1) Acting as company commander, starts mission preparation by issuing the oral FRAGO or written OPORD along with map overlays, CEOI, and other materials called for in the scenario.

(2) Keeps and records elapsed time during mission preparation, announcing passage of (simulated) time at 10 minute intervals (5 minute actual time).

(3) Intervenes as company commander with orders to get play started when preparation time is exhausted.

(4) Maintains a record of turns and updates simulated elapsed time on the game time display.

(5) Directs the sequence of play, announcing fire and move steps, and the command commo phase.

(6) Simulates communication with the platoon in the role of the company or team commander.

(7) Simulates communications from adjacent or supporting elements and higher levels as needed.

(8) Monitors actions of the players to ensure compliance with TRAX I procedures and rules of play.

(9) Accumulates communication time on the stopwatch and enforces the communication time limit.

(10) Monitors actions of the OPFOR Controller, ensuring events occur in accordance with the scenario and OPFOR doctrine.

(11) Supervises the Fire Controller, ensuring that firing conditions properly influence the direct fire results, calls for fire are correctly interpreted, and fires are located correctly on the terrain board.

(12) Intervenes with orders to the Plt Ldr as needed to ensure the exercise approximates the planned scenario.

(13) Interprets and clarifies rules when questioned by players or subordinate controllers.

(14) Evaluates platoon actions against task standards, noting items for later review.

(15) Leads the discussion of events and platoon performance in the after action review.

b. OPFOR Controller.

(1) Places detection cards as required by the scenario, complying with rules for detection.

(2) Places OPFOR elements and obstacles on the board when identified.

(3) Moves OPFOR elements during US fire steps, maintaining a record of position for unobserved elements.

(4) Executes OPFOR direct fire during U.S. movement steps, providing the Fire Controller with the information required to determine the effects of fire.

(5) Places direct fire markers indicating misses and hit effects for both US and OPFOR elements.

(6) Assists the Fire Controller in placing U.S. and OPFOR indirect fire on the board, unless otherwise occupied.

(7) Moves aircraft and delivers fire from U.S. and OPFOR air support, in accordance with U.S. and OPFOR doctrine.

(8) Moves and executes direct fire from U.S. adjacent and supporting elements, unless otherwise occupied.

(9) Employs OPFOR units in accordance with the scenario and in compliance with current OPFOR doctrine.

(10) Modifies OPFOR actions as needed to expose and exploit tactical weaknesses evident in the actions of the U.S. platoon, without departing radically from the scenario.

(11) Modifies OPFOR actions as needed to ensure the exercise approximates the planned scenario.

(12) Describes OPFOR tactics and actions in the after-action review, and U.S. platoon actions from the OPFOR point of view.

c. Fire Controller.

(1) Determines effects of U.S. and OPFOR direct fires, providing miss and effect markers to the OPFOR Controller for placement, or places them himself if the OPFOR controller is fully occupied.

(2) Judges line of sight (LOS) between firer and target, target exposure and other conditions affecting direct fire, and asks players and OPFOR controller to check conditions in doubt.

(3) Records and interprets U.S. indirect fire requests to determine the turn schedule and location for delivery.

(4) Uses the fire template to locate and place U.S. and OPFOR indirect fire markers on scheduled turns, or in accordance with the scenario. The template and markers may be passed to the OPFOR controller if he is unoccupied by other actions.

(5) Assesses effects of indirect fire and air support weapons on U.S. and OPFOR elements.

(6) Describes direct and indirect fire results in the after-action review, along with aspects of platoon performance influencing these results, particularly fire plans and calls for fire.

Exercise Activities.

a. Mission Preparation. This phase of the exercise includes all activities conducted prior to the point at which the platoon actually begins to carry out its mission, and usually ends when game turns allowing fire and movement are started. This section presents controller procedures carried out during Mission Preparation.

(1) Preparation Time. Time is kept on a stopwatch by the Instructor/Controller. The elapsed time corresponding to simulated game time is announced in 10 minute increments tc the Plt Ldr and other players at 5 minute actual intervals. Normally, the time allowed in the scenario is considered realistic under the circumstances described. Since a number of physical activities that would use time in the field do not occur in the training facility, actual time amounting to one-half of that listed in the scenario is allowed for mission preparation activities. This should approximate the

actual usable time available for planning and preparation in the field. With inexperienced leader personnel, the Instructor/Controller may allow more time (i.e., 75% or even 100% of that given in the scenario), reducing the time in later exercises as the players gain proficiency in planning.

(2) Issuing Orders. The situation in the Training Facility should be arranged to allow the players only the information they would obtain in the field under the circumstances described. The Platoon Leader should be taken to an adjoining room to receive the OPORD, as if he had left the platoon to meet with his commander. Meanwhile the OPFOR controller can issue the Plt Sgt (and TCs if included) their maps, game equipment, and vehicles, along with GD and FOV markers, tell them where to set up on the board, and what assembly area activities they are carrying out at the time. If the exercise is started with a Warning Order or FRAGO over the radio, then the Plt Ldr and Plt Sgt may receive the initial order together, with the Plt Sgt carrying back the Plt Ldr's Warning Order to the platoon to start preparation. The Instructor/Controller should make a deliberate effort to issue the orders in a manner which confront the players with practical problems in planning and preparation that represent the kinds of situations encountered in the field under combat conditions. With more proficient players, the Instructor/Controller may deliberately omit information or introduce ambiguity and confusion to simulate typical commander errors. This requires the players to actively overcome such problems by asking questions and making suggestions, thus encouraging vigorous two-way communication.

(3) Planning and Reconnaissance. Players should be left to their own initiative to complete planning and preparation as they would in the field. The Plt Ldr and Plt Sgt can be allowed use of the Platoon SOP as a reference aid in planning and preparation if it is normally carried in the field. The Plt Ldr should also be given Dunn-Kempf Table 1 and 2 as an aid to fire support planning. He should be reminded that the indirect fire delays are one turn less than those shown in the tables. Controllers should restrict communications among the players and their view of the terrain as much as possible to that available under field conditions. If the TCs are supposed to be in their tanks making fire plans, they should be required to use radio procedures to talk on the platoon net. While they are supposed to be physically separated, contact between the Plt Ldr and Plt Sgt should be similarly restricted. The Dunn-Kempf screen should be hung over the board to restrict observation of the terrain roughly to that available from ground level from the vicinity of the platoon location. Controllers should insure that players remain behind the screen, and look at the terrain from under the screen rather than over the top. Even though players may be generally familiar with the entire board after a few exercises, specific features may become more important in new scenarios, and the screen should continue to be used. Usually, the Plt Ldr will be required to complete his plan based on map reconnaissance and ground reconnaissance from behind the screen. When extensive reconnaissance is permitted in the scenario, a series of game turns is inserted while the Plt Ldr simulates travel to and from the locations to be examined. During this process he is allowed to see the terrain, but only to check LOS from his vehicle or other positions occupied on foot. The Instructor/Controller should add the time (30 seconds per turn) used in reconnaissance to the total elapsed time, and resume timing when the Plt Ldr returns to the platoon location. Copies of fire plans, or TRPs which the scenario indicates are to be given to the company commander, FIST, or adjacent platoons should be passed to the Fire Controller.

(4) Troop Leading Procedures. Warning Orders, FRAGOs, and OPORDs issued by the Plt Ldr should be recorded on cassette tape to permit replay during the after-action review. Simulated communications, conferences, or other instructions within the platoon may also be recorded for this purpose. It is useful to have two recorders, one near the Plt Ldr operated by the Instructor/Controller, and another near the remainder of the platoon operated by the OPFOR controller.

(5) Controller Intervention. When the orders issued by the Plt Ldr seem to seriously misread the commander's intention, or a major error of omission or commission in the order threatens to alter the scenario in a substantial way, the Instructor/Controller may be strongly tempted to intervene to correct the error on the spot and put the exercise back on track. Except in the most extreme cases, it is best to let events take their course and to improvise communications and orders that realistically represent the consequences of the error under the circumstances.

The Instructor/Controller should consider himself in the place of the company commander, capable of reacting only to situations as he learns of them through direct observation from his position, or as reports flow in from the platoon and adjacent units. By letting the situation develop, and reacting as the commander would, the Plt Ldr has the opportunity to see how things go wrong when he misreads his orders, or when he issues incomplete or incorrect orders. The Plt Ldr also gets practice in improvising under pressure to set things right. In such a case, the controllers should adjust the exercise by changing the sequence of events or their locations to include the tasks specified in the scenario, thus providing the planned practice despite other changes required. Generally speaking, intervention should be disguised in a cloak of reality, rather than appearing as an overt attempt to direct the players to follow a prescribed "school solution."

b. Mission Execution. This phase begins when the platoon moves from its initial location, or completes stand-to and is ready to move or defend a battle position. The phase ends when the mission has been accomplished or other conditions reached as specified in the scenario. This section presents controller procedures carried out during Mission Execution.

(1) Turn Sequence. Play is conducted in a series of game turns under the direction of the Instructor/Controller. Each game turn represents 30 seconds of combat time, regardless of the actual time expended to complete play in the turn. The game turn is divided into a Direct Fire and Movement Phase followed by an Indirect Fire and Command/Control Phase. The Instructor/Controller marks off phases of the game turn when they are completed on the Dunn-Kempf Status Card using a grease pencil. The passage of each minute of combat time is indicated on every second turn by increasing the number displayed on the simulated game clock, using a take-a-number kit.

The Instructor/Controller announces the time (relative to H-hour) to start each turn, and asks the players to place their action cards. Only a brief time should be allowed to make a choice. The Direct Fire and Movement Phase is then conducted in a series of five steps. The Instructor/Controller announces "fire" and "move" to start three firing steps alternating with two movement steps.

There is no set time period for the completion of a step. Players are allowed the time required to complete fire and movement actions allowed by their card on each step. The Instructor/Controller monitors their actions, however, and encourages a rapid pace of play. If a player is hesitant in initiating an action, he may prompt the player by asking whether he wants to perform the action or pass. When all players have completed an action or passed, he starts the next step.

During the Direct Fire and Movement Phase, the Instructor/Controller maintains an awareness of the actions allowed by each player's card to ensure that only actions permitted by the rules are performed. In particular, the U.S. players cannot fire on the first step with an FM card, or acquire and fire on targets with a D card. The Instructor/Controller also mentally notes when cards are changed, to ensure that only one change per turn is allowed. Completion of the fire and movement steps on a turn is marked in the D/M row of the Status Card. At the end of the Direct Fire and Movement Phase, the Instructor/Controller checks the Status Card to see if Indirect Fire is due to impact that turn, and checks his scenario sheet to remind himself of any communications that he should initiate at that point. The Instructor/Controller then announces "command commo" to start the Indirect Fire and Command Control Phase. He announces "splash" when indirect fire is placed on the board, and conducts any other communications with the platoon that may be required. When the platoon requests indirect fire, the Instructor/Controller responds as commander or FIST as appropriate. When the Fire Controller determines the impact delay for the indirect fire, he points out the turn on the Status Card, and the Instructor/Controller marks the box for that turn in the IDF row as a future reminder that indirect fire is scheduled to impact.

The Instructor/Controller checks his scenario outline again at the end of the turn to remind himself of upcoming events, and conditions required to initiate the events. He also checks off any performance items completed in the "Standards" column, noting down key words or phrases concerning leader and platoon performance for later reference in the after action review. It is convenient to use a copy of the map and overlay provided with the scenario to record unit movement, the location of events, and any brief performance notes the Instructor/Controller may wish to keep.

(2) OPFOR Actions. The OPFOR Controller operates the OPFOR elements as if he were in command of each platoon, section, or command vehicle. The actions of the OPFOR units are intertwined with those of the U.S. platoon in a pattern of action and reaction that contributes an impression of realism to the simulation of combat events and outcomes.

Generally speaking OPFOR vehicles move twice per turn, and are allowed to fire twice per turn. Moves of vehicles are made during the first and third firing steps, with the effects of U.S. fire applied at the position reached at the end of the move. Troops on foot are moved in the second U.S. firing step. Maximum movement distances for OPFOR vehicles and personnel are summarized in Table A-1. OPFOR direct fire is carried out during U.S. movement steps. When the OPFOR controller fires stationary elements he notifies the U.S. players of the fire at the start of the movement step and applies the effects at the starting location. When firing on the move, the effect is determined at the end of the U.S. move, and applied at the final location. The OPFOR controller may decide to fire only one round per turn to be able to

fire from a brief halt, moving before and after firing. In this case the moves are conducted as usual, with the fire resolved at the end of the first U.S. move.

Table A-1

Maximum Movement Rates[1,2]

OPFOR Vehicles

Terrain	T72/ T64	T62/ T55	PT 76/ SP ARTY	BMP/BMD	BRDM/ BRDM2	ASU 85/ ZSU 23-4	Wheeled
Paved Road	4.0	3.5	3.5	4.5	5.0	2.5	4.0
Dirt Road	3.0	2.5	2.5	3.5	4.0	2.0	3.0
Cross Country	2.5	2.0	2.0	3.0	3.0	1.5	1.5
Woods/Uphill	1.5	1.0	1.0	2.0	2.0	1.0	1.0
Marsh/Stream	1.5	1.0	1.0	1.5	1.5	1.0	0.5

U.S. Vehicles

Terrain	M1	M60A3/ M88	M60A1/ M48A5	M2/M3	M113/ M106	Wheeled	AVLB
Paved Road	4.5	3.5	3.5	4.5	4.0	4.0	3.0
Dirt Road	3.5	2.5	2.5	3.5	3.0	3.0	2.5
Cross Country	3.0	2.0	2.0	3.0	2.5	1.5	2.0
Woods/Uphill	2.0	1.0	1.0	2.0	1.5	1.0	1.0
Marsh/Stream	1.5	1.0	1.0	1.5	1.5	0.5	1.0

U.S and OPFOR Personnel

Terrain	Individual Weapon	Crew Served Weapon
Open	1.00	0.75
Rough	0.75	0.50

[1] Movement rates are in inches per movement step, with one inch equaling 12 kph or 7.4 mph. Vehicles move two steps per turn, while personnel move one step per turn.

[2] Dash speed adds one inch to all vehicle rates, or Fire on move subtracts 1/2 inch from vehicle rates.

The OPFOR controller must be familiar with the capabilities and limitations of OPFOR weapons systems and operate his forces accordingly. He

should attempt to use firepower and terrain to the best advantage under the circumstances, representing likely decisions and actions of OPFOR leaders applying OPFOR doctrine in an intelligent, rather than rigid and stereotyped manner. When handling a large number of vehicles, he should help to maintain the pace of play by moving and firing platoon or section units, with only the command vehicles exhibiting independent action.

The OPFOR controller checks the scenario outline frequently during and at the end of each turn to be sure that he is creating the situations intended for training purposes. He should be prepared to compensate for unexpected actions of the U.S. platoon to help keep the scenario moving as planned.

(3) Communications. Whenever the players simulate radio communications within the platoon during the Direct Fire and Movement Phase, the Instructor/Controller starts his stopwatch to accumulate elapsed time using the lap-time function. When simulated transmission stops, he then stops but does not reset the watch. This procedure is repeated during every transmission. The Instructor/Controller does not respond to any communication from the platoon during the Direct fire and Movement Phase.

After the third fire step concluding the phase, the Instructor/Controller announces "command commo." At this point he can respond to communications from the platoon, simulating communication from outside the platoon (commander, higher levels, or adjacent unit) as needed to implement the scenario. Time is accumulated in the Indirect Fire and Command/Control Phase for all transmissions including those from the Instructor/Controller. Whenever the accumulated time reaches 30 seconds in either phase during the turn, the Instructor/Controller announces "stop commo," interrupting any communications in progress whether his own or the platoon's. No further transmissions are allowed for remainder of the turn. Completion of the Indirect Fire and Command/Commo Phase is marked in the REPT row of the Status Card to end the turn.

(4) Movement. The Instructor/Controller and the OPFOR Controller should have memorized the maximum movement distances, shown in Table A-1, for the U.S. vehicles used in the exercise scenario. During the movement steps, the Instructor/Controller is primarily responsible for monitoring the distances moved, aided by the OPFOR controller when he is not occupied by firing. The controllers should be particularly alert to correct excessive movement distances in the early exercises when the players are not familiar with the action cards and movement distances. Errors most often occur when the players move from one type of terrain to another, or change cards. The Instructor/Controller may also occasionally prompt the players to check their distance values by reminding the players of the type of terrain they are on. Such a prompt is appropriate when a player seems to be inadvertently moving at the same rate after passing from slow to fast terrain, or moving too far after leaving a road. Players also tend to ignore the marsh area around a stream until reminded.

To help maintain a rapid pace of play, the players should be encouraged to carry out their moves simultaneously, rather than one at a time. If the position is cramped, the Plt Ldr and Plt Sgt should move first, with the TCs following in their role as wingmen. The players should not be allowed to spend much time contemplating where to place their GD and FOV markers, or to

waste time measuring movement distance very precisely. The more rapidly the moves are made, the more subjectively realistic the simulation will seem to be to the players.

(5) Detection/Acquisition. The OPFOR Controller places detection cards when any of the OPFOR elements come into LOS of the U.S. platoon, or are revealed by fire or movement actions according to the detection-acquisition rules. The card should usually be placed during a U.S. player movement step. At this point in the sequence, player's return fire will be delayed if they are not altered to the target by the detecting player. The OPFOR controller may time his action or briefly delay placing a card to take advantage of a lapse in all-round security by the U.S. platoon, or a lack of mutual support between sections. He may allow U.S. vehicles to pass by without detecting an OPFOR position to be able to engage U.S. vehicles from the flank or rear, if it is reasonable to assume that the OPFOR elements could manage to remain hidden under the circumstances.

When a detection card is placed, the OPFOR Controller checks the GD and FOV markers to insure that the proper acquisition procedures are followed by U.S. players. Both the Instructor/Controller and OPFOR Controller should be alert to prevent players from revealing information on the card except through normal communications. The players may have to be occasionally reminded, especially in the early exercises, that they can freely change the position of their GD and FOV markers after each step in the Direct Fire and Movement Phase. Players may also have to be reminded that the GD and FOV markers can be oriented to cover different directions. However, this should usually be done when no detection cards are on the board, to avoid affecting the player's actions after a target has been detected.

When no GD or FOV marker covers the location of OPFOR activity or firing, the OPFOR controller assesses the orientation of the vehicles and may place a card, or draw attention to one already placed by notifying one or more of the players of detection by a loader or driver. This should be done when detection at that point is considered to be important to the timing of scenario events, or detection is judged highly probable under the circumstances. In such a case, the first card placed has only detection information, and can be inspected immediately. The card is then replaced with one giving identification information, to be inspected when a FOV or GD marker is turned to cover the location.

Once the target is identified by the correct procedure, and is reported to others in the platoon, the OPFOR controller places the appropriate firing signature or miniatures on the board, in accordance with the visibility rules. He later removes vehicles when LOS or visibility is lost, and records position of hidden elements on each turn, using a copy of the map to mark the positions.

(6) Direct Fire. When a U.S. player designates a target, the Instructor/Controller should check to see that the GD marker has been moved toward the target engaged. Positioning the GD markers temporarily records the target while the rest of the fire resolution procedure is completed, helping to avoid confusion about which effect applies to which target. The player announces the identification number of the firing vehicle, the type and number of the target, and the range to target. The Fire Controller

Table A-2
Effects of US/OPFOR Machinegun Fire Against Deployed Personnel

Heavy MG (50 Cal/12.7mm/14.5mm)						Coax MG (7.62mm)						Hit/Kill Modifiers	Change
Range (m)	Ph	Number of Casualties 1	2	3	4	Range (m)	Ph	Number of Casualties 1	2	3	4		
												Target Activity	
												Standing	-1 R
												Moving	0 R
100	.96	.88	.57	.23	.05	50	.97	.92	.66	.31	.09	Prone	+1 R
200	.78	.73	.33	.10	—	100	.83	.88	.57	.23	.05	Target Position	
400	.61	.47	.11	.03	—	200	.65	.73	.33	.10	—	Open Field	-1 R
600	.50	.27	.08	—	—	300	.54	.47	.11	—	—	Woods Edge	0 R
800	.45	.16	.05	—	—	500	.47	.23	.03	—	—	Dense Woods	+1 R
1000	.39	.10	.02	—	—	800	.37	.14	—	—	—	In Buildings	+1 R
1200	.27	.05	—	—	—	1000	.30	.10	—	—	—	Prepared Position	+1 R
1600	.16	.02	—	—	—	1200	.11	.05	—	—	—	Firing 2nd/3rd Burst	-1 R
1800	.09	—	—	—	—	1400	.04	—	—	—	—	Firing with Surprise	-1 R

Table A-3
Effects of Direct Fire on OPFOR Vehicles

Hit Probabilities

Range(m)	M1	M60A3	M60A1
500	.96	.94	.92
1000	.83	.79	.70
1500	.68	.58	.43
2000	.55	.41	.20
2500	.43	.30	.11
3000	.31	.22	.06
3500	.19	.10	.02
4000	.08	.05	.01

Heavy Armor Kill Probabilities

Range(m)	K	Kf	Km
500	.44	.55	.67
1000	.38	.47	.61
1500	.32	.40	.56
2000	.26	.36	.51
2500	.23	.33	.47
3000	.21	.31	.44
3500	.19	.29	.41
4000	.17	.27	.38

Hit Modifiers		Kill Modifiers	
Target	R Cng	Target	Pk Cng
Flank	-1	T64/72	-.10
Moving	+1	Flank	+.10
Turret		Rear	+.10
Tank	+2	Turret	No Km
APC	+3	Chopper	H=K
Weapon	R Cng	Ammo	Pk Cng
2nd/3rd	-1	AFSPDS	+.10
Heat	+1	(at Hvy Arm)	
Moving	+1	Heat	+.10
Stab Out	+2	Heat at (T64/72)	-.10

Light Armor Kill Probabilities

Range(m)	K	Kf	Km
500	.59	.78	.91
1000	.57	.77	.88
1500	.50	.71	.83
2000	.44	.67	.79
2500	.41	.64	.76
3000	.39	.62	.74
3500	.37	.60	.72
4000	.35	.58	.70

prompts the player to state any omitted information, or repeat items he may have missed. When several players are firing, the Fire Controller notes down each firer, ammo, and range, and then turns to determine the effect of fire.

The Fire Controller uses Table A-2 and Table A-3 to determine effects of vehicle mounted weapons on the OPFOR targets. These Tables are simplified versions of tables and probability values from Blockbuster and Dunn-Kempf tables. If the Instructor/Controller finds other published data that shows a serious inaccuracy in the table values, he can modify the tables accordingly. The Fire Controller first judges LOS and other conditions that affect the probabilities of hit or kill. If he is uncertain about any modifying factor, he may ask the OPFOR controller to check the factor in question.

In the case of the main gun, some factors modify the range category used in the table, thus affecting hit probability, while other factors add or subtract an amount from the kill probabilities. The factors are used in combination if more than one is applicable. Firing at a moving (+1) tank turret (+2) at 1500 m, extends the effective range (+3 categories) to 3000 m, for example, if it is also a T64/72, then -.10 is subtracted from the K and Kf values, while no Km is possible. The Fire Controller compares one random number with the value at the modified range in the hit probability table. If the random number is less than the value, a hit is obtained. Given a hit, a second number is compared with values at the unmodified range to determine if a K, Kf, or Km result is obtained. The Fire Controller then passes the appropriate effect marker to the OPFOR Controller for placement on the target. If the number is less than half of the number required for a kill, a burn marker is passed also. The Fire Controller continues to monitor suppressed and killed targets to ensure that markers are turned over, and the player is informed of his recovery from supression or kill effects on subsequent turns.

When the U.S. player fires at hidden targets or recons by fire, the OPFOR controller determines whether any OPFOR elements are in an effective radius of the indicated point of aim, and informs the Fire Controller by passing him a note that is blank if the target is out, or gives the type and conditions of the target if it is in. The OPFOR controller should remember that a MANPAC Sagger gunner may be 15 meters to either side of the missile launch point, or 80 meters for a Spigot. The Fire Controller avoids giving away the position by appearing to go through the resolution procedure in both cases.

The OPFOR controller publicly announces his target engagements along with the factors affecting the outcome. The Fire Controller uses Table A-1 to resolve vehicle machinegun fire, along with Dunn-Kempf Table 12 for main gun engagements. In the latter case, the Table A2 modifiers are used with M1 in place of T64/72, and the ammo effects are omitted.

The Dunn-Kempf procedures and tables are used to determine effects for all other kinds of engagements. In particular, Tables 13-24 are used for infantry vs infantry unit engagements. Table 26 for ADA fire, Tables 28-30 for helicopter fires, and Tables 31-33 for close air support. In some cases the Instructor/Controller may wish to update these tables to reflect new weapons system developments.

The Fire Controller can help to avoid delaying play by predetermining results for engagements that he can anticipate on upcoming turns. This will often be the case for OPFOR engagements required by the exercise schedule.

(7) Indirect Fire. The exercise scenario either includes a fire support plan to be given to the Plt Ldr, or requires him to plan some number of target locations. The Plt Ldr is given Dunn-Kempf Tables 1 and 2 (Revised Rules) as a guide to indirect fire capabilities on both sides as an aid in planning. The Fire Controller essentially follows the Dunn-Kempf rules and procedures in directing fire missions for both the U.S. and OPFOR sides, observing the conditions and constraints established in Tables 1 and 2. However, the impact delays given in Table 1 and 2 (less one turn in the current rules) may appear to be excessive, particularly in relation to recent U.S. artillery doctrine. The Instructor/Controller may wish to modify the delay values based on the experience and capabilities of local fire support units, and updated intelligence on threat capabilities. In addition to the artillery weapons indicated in Tables 1 and 2, the Instructor/Controller also may want to allow use of multiple rocket launchers on both sides, having roughly a 0.5 km by 1 km impact area for a battery.

When a call for fire is received from the U.S. platoon, the Fire Controller writes down the elements of the call for later reference in the after-action review. If any elements of the call are missed, the Fire Controller uses some prearranged signal to indicate to the Instructor/Controller that the message should be repeated. The Fire Controller should be familiar with FIST and Forward Observer procedures and the various forms of fire requests, so that the location and method of fire can be interpreted correctly. If the Fire Controller is uncertain about the meaning of the request, he should ask the Instructor/Controller for assistance. The Fire Controller marks the location and method of fire on a copy of the map. He then determines the impact delay using the procedures in Table 1 with a random number obtained from the Dunn-Kempf Random Number Tables. He records the turn, TRP or coordinates, and method of fire on the U.S. Indirect Fire Request/Impact Record. The Instructor/Controller is informed by pointing out the scheduled turn of impact on the Status Card.

The same procedure is followed when the OPFOR controller requests indirect fire by marking a coordinate and the type of fire on a copy of the map. The Fire Controller returns the map copy to the OPFOR Controller with the scheduled turn shown in a circle next to the point of impact. Most of the OPFOR fire support is preplanned to occur at specific points in the scenario. The locations of these missions are prerecorded on the OPFOR Indirect Fire Request/Impact Record. At the end of each turn, the Fire Controller checks the upcoming indirect fire events in the scenario, and when the appropriate turn number can be anticipated, the schedule turn number is entered on the Request/Impact Record.

At the start of a turn with indirect fire scheduled, the Fire Controller uses a random number to determine deflection and range errors, and circles the corresponding point of impact on the Weapon Impact Locator overlay. He also selects the cotton-ball markers required to fill out the beaten zone indicated on the Indirect Fire Template. At the beginning of the Indirect Fire and Command/Control Phase, the fire is placed on the terrain board using the Impact Locator and Indirect Fire Template to locate the markers in relation to the coordinates recorded for the fire mission. Either the Fire or OPFOR Controllers may place the fire, as is most convenient.

Effects of indirect fire are determined for vehicles or troops in the beaten zone at the time of impact using Dunn-Kempf Tables 4, 5, and 6. Effects are also determined for vehicles that remain or move into the beaten zone after each movement step on the following turn. The Fire Controller may prompt the OPFOR controller to pick up the black artillery markers, replace them with brown dust markers and to add or shift smoke markers at the end of the Direct Fire and Movement Phase.

(8) On-Board Smoke. U.S. vehicles equipped with smoke grenades are allowed to fire two shots before being required to reload. The Fire Controller records the firing of smoke grenades and completion of reloading for each vehicle. He monitors the use of smoke grenades during the Direct Fire and Movement Phase, and informs the players that their launchers are empty when they attempt to fire without reloading.

The OPFOR controller monitors the U.S. players placement of smoke markers for grenade or exhaust smoke to ensure that the rules for its use are followed. He also prompts the players to adjust or pick-up smoke markers as required at the start of each turn.

The OPFOR players may use exhaust smoke with vehicles having this capability, employing the smoke in a manner representing OPFOR doctrine. The use of smoke usually should be planned as part of the scenario. When the OPFOR controller judges that exhaust smoke is an appropriate response to some unplanned circumstance, he should consider whether it will upset the course of events and the training objectives of the scenario. Consultation (in private) with the Instructor/Controller may be advisable before employing unplanned smoke.

c. After-Action Review (AAR). Procedures for review and evaluation of performance in the TRAX I exercises is based on Chapter 2, of FC 17-15-1, adapting the procedures for an STX to apply to a terrain board exercise. Prior to conducting the exercise, the Instructor/Controller should prepare an AAR agenda, considering the major training objectives that have been established for the exercise. The agenda should list the exercise events and the primary individuals who can provide important information on the cause and effect relationships determining the activities of the platoon and the outcomes of the mission. Since the players and controllers are all in a position to observe fires and movement, and to hear the communications, the focus should be on how communications were understood, and the situational factors that influenced the decisions and actions of each individual.

(1) Controller Conference. At the conclusion of the exercise, the players should be given a brief rest break while the controllers confer privately to decide on the main teaching points to be brought out in the AAR. The controllers should reflect on the exercise events, considering the platoon performance in relation to the standards, (simulated) casualties, and results achieved. Brief notes on task performance may be set down using the form suggested in Figure 2-3 of FC 17-15-1. Comments on some general areas of performance that cut across tasks may also be prepared by individual controllers, such as reporting to the commander (by the Instructor/Controller), handling of indirect fire (by the Fire Controller), and use of terrain in movement (by the OPFOR controller). The purpose of the conference is not to prepare a detailed critique of performance, but simply to plan those areas of

performance that should be explored in greatest depth in subsequent discussions with the players.

(2) Conduct the AAR. After restating the exercise objectives, the exercise Preparation Phase should be reviewed first in a conference area. The Platoon Leader should be asked to summarize the orders he received and the factors he considered in his planning activities. The recorded Plt Ldr orders should be replayed and discussed by the platoon in the light of subsequent events. Finally, the OPFOR controller should present a summary of the OPFOR mission and his operational plans.

The group should then move to the terrain board to review each of the exercise events, with each player discussing what he saw and heard, what he did, and why. For each event, the discussion should be led to consider elements of task performance and results in terms of casualties, impacts on subsequent events, and progress toward mission accomplishment. The discussion should be led to generate ideas on possible alternative courses of action and how the results might have been improved. The Instructor-Controller can also point out situations that might have arisen at certain points and conduct "what-If" drills based on such situations.

The group should then return to the conference area for a final discussion of the implications of the exercise. The first kind of implication to be considered is what the exercise means in terms of what the platoon may confront in actual combat and how the platoon can be expected to react. The platoon should be led to imagine aspects of the combat situation that are not represented in the terrain board exercise, but are important considerations in the field. The players should be asked to summarize what they have learned in terms of tactical principles and rules, and consider whether such principles or rules have general validity in different circumstances. Finally, the platoon should consider the implications of the exercise for further training needed to improve performance, either using TRAX I, or other methods, such as drills, TEWTS, individual study, STXs, or MILES exercises.

In conducting the AAR, the Instructor/Controller should follow the guidelines and techniques set forth in FC 17-15-1, to help make the AAR a positive and effective situation.

(3) Written AAR. After each unit has completed its exercises, the Instructor/Controller should prepare a written summary of the AAR on each exercise. The Instructor/Controller may wish to record on tape the discussions in the AAR for later reference to reduce reliance on memory and written notes. After all units have completed training, a written report should be prepared as suggested in FC 17-15-1. The report should summarize overall performance of the units in relation to specific tasks, as well as general areas of combat operations, such as planning, communications, maneuver, direct fire, and indirect fire.

Player Preparation

a. Preliminary Briefing. Personnel to be trained in TRAX I exercises should be assembled for a 30 minute meeting to be briefed on the training to be conducted. The training schedule should be handed out, along with copies of the Basic Rules, and a list of references to the relevant sections of the

Platoon Manual FM 17-15 (Test) and MTP FC 17-15-1 as indicated in the Exercise Plan, and local SOPs. The general nature of the gaming procedure should be described briefly. Personnel should be asked to read the rules carefully and note any questions they may have before reporting for scheduled training. The Platoon Leader and Platoon Sergeant of each platoon should be advised to review together the referenced literature on the missions to be trained, in particular the prerequisite tasks cited in the STXs. TCs should be advised to review the platoon drills.

b. Rules Instruction. Instruction on details of the rules and method of play should be conducted by the Instructor/Controller as part of the first training session. Although it might appear to be more efficient to conduct such instruction on a group basis as part of the preliminary briefing, in practice little knowledge of the rules will be retained if not immediately put into practice in a training exercise. When personnel arrive at the facility for training, ascertain whether they have completed reading the rules and reviewed the assigned references. Then conduct a brief demonstration of the method of play on the terrain board, as described below. Finally, review the rules with the personnel section by section, discussing the main points and answering questions. If the personnel are well prepared in advance, the rules instructions may take as little as 30 minutes. If they have not had an opportunity to thoroughly read and understand the rules, it may require an hour or more. In the latter case, the personnel should read the rules section by section and discuss unclear points with the Instructor/Controller before seeing the demonstration.

c. Demonstration. The demonstration provides a step-by-step illustration of the method of play, executing major features of the Basic Rules. The demonstration is carried out as outlined in Table A-4. The Instructor/Controller acts the part of the Plt Ldr, OPFOR Controller acts as Plt Sgt, and the Fire Controller handles the OPFOR, in addition to performing their controller duties in the demonstration.

Table A-4

Procedure for TRAX I Rules Demonstration

STEP	ACTION	COMMENTARY
1.	Place four M1 tank miniatures labeled 2,1,3,4 in that order at coordinate NB569240, NB575240, NB576237, and NB575236, facing east.	Explain that the platoon is moving in wedge formation with the Plt Ldr in Tank 1, and Plt Sgt in Tank 3.
2.	Place the GD and FOV markers with each tank in normal positions for a wedge formation. Only Tank 1 should have GD or FOV covering BM393.	Explain that the GD and FOV markers show where the gunner and TC are looking and can detect targets. Remind the players that the positions of the markers can be changed at the end of any step in the turn.
3.	Place a D card for Tank 2, M card for Tank 1, and FM cards for Tanks 3 and 4.	Explain that action cards are placed by each tank at the start of each turn. Indicate that Tank 1 chose to "dash" to try to catch up. Tanks 3 and 4 are ready to fire, being alert for possible fire from buildings at the train crossing.
4.	Announce the initial "FIRE" step of the turn.	Explain that the FM card would allow Tanks 3 and 4 to fire on the first step only when stationary. Since they are moving, they cannot fire. Tanks 1 and 2 have M and D cards and also cannot fire.
5.	Announce the initial "MOVE" step of the turn. Plt Ldr moves Tanks 1 and 2 east, changing the Tank 1 card to FM at the same time, OPFOR Ctlr places a detection card on the buildings at the train crossing. Plt Sgt moves Tank 3 and Tank 4, then picks up detection card before placing GD and FOV markers.	Remind the players of the distance values on the back of the cards. Give the terrain values used by each tank and show the use of the cards to measure distance. Explain that all players usually move at about the same time, or the wingmen follow their section leader. Point out that action cards (except D) can be changed at end of any turn step.

STEP	ACTION	COMMENTARY
6.	Plt Sgt calls Plt Ldr to report seeing movement in window of one building. Plt Ldr orders recon by fire. Plt Sgt orders wingman to fire on the two buildings nearest tracks with .50 cal and COAX. Plt Sgt moves GD and FOV markers to designate targets for both tanks (Tank 3 engages the two buildings to the left).	Point out that the Plt Sgt was the only one with FOV covering the detection card. Remind players to use standard radio procedures. Explain that targets can be designated immediately when the platoon is alerted. If not alerted, each tank must acquire targets on its own, which delays fire. Tell the commo time used up to this point.
7.	Announce the second "FIRE" step. Carry out machinegun fire on the designated targets. Place hit markers with S at three buildings, and a dust marker to show a miss by the wingman's COAX.	Explain the use of the tape measure to find range, and the information reported to the fire controller. Explain the hit and miss markers, and that the markers are not turned over to show the effect on the OPFOR.
8.	Announce the second "MOVE" step. Place a detection card (T-62 tank) on the next to the woods near BM393.	Point out that Tank 2 cannot detect and engage the target while using the D card.
9.	Plt Ldr alerts platoon while moving Tanks 1 and 2 east, designates the target for Tank 1, and orders Plt Sgt to move left to engage. Replace the card with a T62 model. Move Tank 3 left onto the road with Tank 4 following, and designate target for Tank 3. Tank 4 continues to designate the missed building with the GD marker, but turns FOV to "see" Tank 3. The T62 fires, and a hit marker with S is pace on Tank 1.	Explain that Tanks 3 and 4 cannot acquire the target without LOS. Show the use of string to test LOS from Tanks 3 and 4. Remind the players that the player whose tank is hit can see the result(s), but that it is turned up only after the next turn is complete. Again tell the total commo used.
10.	Announce the last "FIRE" step. Move the T62 west. Determine range and fire Tank 3 resulting in a miss (lost). Plt Sgt calls Plt Leader with no answer. Tank 4 hits building with COAX, FOV is turned to east.	Explain the factors affecting the Tank 3 fire (T62 moving hull down, tank firing APDS, moving w/stab. Point out the list of factors on the F card. Explain that Tank 1 is suppressed by the hit (at least).

STEP	ACTION	COMMENTARY
11.	Announce the "COMMAND COMMO" phase. Deliver OPFOR indirect fire (122 mm) on the road in front of Tank 2. Plt Sgt reports contact, indirect fire and platoon status to the Co Cdr, and calls for smoke on TRP29. The Co Cdr orders the platoon to develop the situation.	Point out the effect of fire on visibility and its duration. Explain that TRP29 was preplanned at NB596246, and will obscure LOS from OPFOR that may be following T62. Remind the players of the commo time limit, and tell the total time used in the turn. Point out that when time is used up, further commo is stopped until the next turn.
12.	Announce "PLACE CARDS" to start the next turn. Place an FM card for Tanks 2 and 3 and M for Tank 4. Move the smoke markers to show wind drift south.	(Conduct the actions on the second turn more rapidly, with briefer explanation.) Explain smoke drift.
13.	Announce the "FIRE" step. Move and turn the T62 to expose its flank while moving into the woodline.	Point out effect of woods on vehicle visibility.
14.	Announce the "MOVE" step. Move Tank 2 to evade indirect fire and keep LOS with T62. Use exhaust smoke, backing into the smoke and designating the target to end the move. Move Tank 3 into defilade behind BM376, fire smoke grenades, and change to an F card. Fire the T62 at Tank 2, and place a *miss marker*. Tank 4 moves forward into the depression on right of Tank 3, changing to an FM card.	Explain the method of representing exhaust smoke and grenade smoke. Point out that thermal sights can see through smoke. Show that Tank 4 did not gain LOS to T62.
15.	Announce the next "FIRE" step. Tank 2 fires HEAT and misses, while Tank 3 fires APDS and hits.	Explain that Tank 2 cannot change cards a second time.
16.	Announce the "MOVE" step. Tank 2 continues smoke, moving toward Tank 1, turning to frontal position, and changing to an F card at end of move. Tank 3 keeps position, while Tank 4 moves forward. Plt Sgt directs TCs to be alert for more targets.	Point out that changing to F card can represent a brief halt.
17.	Announce the "FIRE" step. Tanks 2 and 3 fire and hit, and T62 burns.	Point out factors affecting fire in this case.

STEP	ACTION	COMMENTARY
18.	Announce the "COMMAND COMMO" phase. Deliver 81 mm smoke 3 inches north of TRP. Shift OPFOR indirect fire to fall on Tank 2, with Km effect. Plt Sgt calls adjustment, then reports engagement results and OPFOR fire. Turn up markers on Tank 1.	Tell the total commo time used on second turn. Explain the procedure and delays for recovery from S, Km, Kf, and K results.
19.	End demonstration.	Answer any further questions. Explain that players should not worry too much about details of rules when they begin play. They should first imagine what they would see and do in the real situation, then just try simulate that (observe, move, shoot, or communicate) in the procedure of the game. Indicate that the controller will correct them when they break the rules.

APPENDIX B
TRAX I BASIC RULES

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1. Introduction

TRAX I is a combat game adapted from Dunn-Kempf and Blockbuster to represent a tank, cavalry, or mechanized infantry platoon executing Division '86 tactics. The platoon leader, platoon sergeant, and tank or track commanders (TCs) simulate communication, fire, and movement actions of their own vehicle using miniatures on a terrain board. Sample mission scenarios used with TRAX I are designed to provide practice on tank platoon tasks in STXs outlined in FC 17-15-1. Similar scenarios can be utilized for STXs based on cavalry or mechanized infantry missions.

2. General Description

a. Exercise Activities. A TRAX I exercise includes segments for mission preparation, mission execution, and after-action review as follows:

(1) Mission preparation - platoon leader receives orders and completes planning and troop-leading procedures.

(2) Mission Execution - platoon communication, movement, and firing in a series of game turns each representing 30 seconds of real time.

(3) After-action review - recounting and analysis of combat events in a group discussion led by the Instructor/Controller.

b. Equipment. Players use components provided in Dunn-Kempf and Blockbuster kits, or prepared from materials available in normal supply channels.

(1) Terrain - Dunn-Kempf board representing a 4.8 km x 6.0 km section of Germany north of Hunfeld with a scale of 1 in. to 50m., and a 1:50,000 scale topographical map of this area.

(2) Vehicles - Dunn-Kempf and/or Blockbuster 1:285 scale miniatures, with observation markers indicating gun direction (GD) and TC's field of view (FOV).

(3) Other materials - orders and overlay, CEOI book, action cards, detection cards, rulers, metal tape measures, munition markers (cotton balls), and string.

3. Mission Preparation

a. Receipt of Orders. The Instructor/Controller issues a written OPORD or oral FRAGO to the Platoon Leader, along with maps, overlays, and CEOI extracts needed during the mission.

b. Preparation Time. Time from the receipt of orders to the start of the mission at H-Hour is allowed for planning and troop leading procedures. A reasonable period of time under the conditions of the mission in the field is provided in the scenario outline. In the game context, the Platoon Leader

is allowed actual time amounting to 50% of the required field time to complete mission preparation activities.

c. Warning Order. After preliminary planning and map reconnaissance, the Platoon Leader is required to issue a Warning Order to the Platoon Sergeant, with elements determined by the order received and the time available.

d. Assembly Area Activities. While the Platoon Leader is planning, some elements of the assembly area activities that might be required in the situation and that can be simulated on the board should be carried out by the Platoon Sergeant (and TCs, if present). These might include establishing perimeter security, rearming and refueling activities, ground reconnaissance, establishing OPs, emplacing a hasty minefield, direct fire planning, etc. Such activities may be initiated by the Instructor/Controller prior to issuing orders, or started by the Warning Order based on preparation required in the order given the Platoon Leader.

e. Reconnaissance. Only a visual reconnaissance of the ground is permitted from ground level at the initial position of the platoon, or from nearby points that could be reached in the time available. The screen provided with the Dunn-Kempf kit is placed over the board to restrict line of sight (LOS).

f. Troop Leading. After completing planning and simulating any necessary reconnaissance and coordinating activities, the Platoon Leader issues an oral OPORD to the platoon. He conducts any rehearsals he deems necessary, as time permits. Both the Warning Order and OPORD are recorded on audio tape for replay and review in the after-action review. Mission execution and play of the game begins with the initial movement from the platoon position.

4. Turn Sequence

a. Direct Fire and Movement Phase. All actions within the U.S. platoon are completed including communication, target acquisition and designation, direct fire, and movement.

b. Indirect Fire and Command/Control Phase. All actions outside the U.S. platoon are conducted, including reports to and orders from the company commander, calls for, delivery, and adjustment of indirect fire, communication with the FIST, and communication with adjacent units.

5. Communications Rules

a. Turn Phases. Communications within the platoon are conducted only during the Direct Fire and Movement Phase. Communications outside the platoon to company or higher levels are conducted only in the Indirect Fire and Command/Control Phase.

b. Time Limit. Total radio communication time used in one turn is not allowed to exceed 30 seconds. Radio time remaining after platoon communications are finished in the Direct Fire and Movement phase is then available for outside communications in the Indirect Fire and Command/Control Phase. The Instructor/Controller accumulates time on a stopwatch and will stop further communications when the 30 seconds has been used up for that turn.

Communications can then only be resumed on the next turn. Time not used on a turn is not carried over to the next turn, and is lost.

c. Platoon Procedures. Communications in the platoon are entirely restricted to radio procedures and visual signals per platoon SOP. Players talk directly to each other as though on the platoon radio net, or signal visually as from their tank. Players should avoid informal talk among themselves and pointing at the board to coordinate their actions.

d. Command Procedures. All radio communications outside the platoon use standard procedures for reports, calls for fire, and brevity codes per SOP, with call signs according to a CEOI book or CEOI extracts provided with orders. The Instructor/Controller responds to all calls outside the platoon, representing the Company Commander, FIST, etc. Radio time used by the Instructor/Controller counts against the 30 second time limit.

e. Game Control. Administrative talk between the players and controllers is permitted as required, and is not counted toward the limit on communication time.

6. Action Cards

a. Action Types. Each U.S. player uses a set of action cards to show the current activity of his vehicles and weapons. The cards are marked with letters indicating a particular action. For vehicles with guns, the cards indicate an intention to fire (F), move (M), or fire on the move (FM). For vehicles with missiles, cards show readiness to launch (L), guide to target (G), guide at short range and launch again (GL), reload (R) or move (M). Vehicles also have a dash (D) card allowing extra movement. Personnel carriers have cards for picking up (P) or unloading (U) troops.

b. Turn Steps. The Instructor/Controller starts the Direct Fire and Movement Phase by announcing the game time relative to H-hour (in one-half minute increments), and instructing players to "place your cards". Players then choose an action card and place it next to their vehicle. The Instructor/Controller then announces three firing steps alternating with two movement steps, saying "fire" or "move" to start each step. The steps are fire-move-fire-move-fire in that order. After a step is announced, time is allowed for U.S. players to carry out the action indicated on their card, if it corresponds to that type of step. A player may decide to omit the action shown on his card and do nothing on any step he chooses. The next step is announced after firing or movement actions permitted on that step are completed, along with any communications desired within the platoon. When the last firing step is over, the Instructor/Controller announces "command commo" to indicate the start of the Indirect Fire and Command/Control Phase. This phase ends when all indirect fire actions have been completed, and further communication outside the platoon is not desired or allowed.

c. Changing Cards. The action card placed at the beginning of the turn may be removed and a new card placed only once during the turn. The exchange of cards may occur at the end of any step in the Direct Fire and Movement Phase. The D, R, P, and U cards are exceptions to this rule, and must be kept during the entire turn. These cards can only be placed at the start of a turn, and cannot replace another card during the turn.

d. Functions. The purpose and use of each action card is further explained below:

(1) Fire (F) Card - The F card shows that the vehicle is stationary and prepared to fire its guns. Up to three round or bursts may be fired, one per firing step. Firing from a brief halt may be represented by placing the F card and then changing to a card allowing movement, or replacing a movement card by the F card.

(2) Move (M) Card - The M card shows the vehicle moving at a normal rate for the terrain. The vehicle moves during movement steps, but cannot fire on fire steps. Targets may be acquired during movement, but the M card must be changed to fire on the next firing step.

(3) Fire on Move (FM) Card - The FM card represents continuous movement and firing with machineguns or stabilized guns. A movement step must be completed before firing, so the rate of fire is reduced by one shot per turn unless the F card is used to show a brief halt on the first firing step. The movement rate is reduced one-half inch (25 m) per step, representing the need to maintain a stable platform for firing.

(4) Dash (D) Card - The D card represents movement at the maximum rate possible for the terrain. The D card is used in emergency or catch-up situations, or to minimize exposure between covered positions. Movement of an extra inch (50 m) per step is allowed relative to the normal rate. When using the D card, observation is assumed to be forward on the route and nearby terrain features. Accurate fire is hampered by irregular vehicle motions, so target acquisition and firing is not permitted for the entire turn. Increased reaction time is represented by the requirement to retain the D card for the entire turn.

(5) Launch (L) Card - The L card shows that the vehicle is stationary and prepared to fire a missile. Missile launch is shown by placing a red elongated cotton marker near the vehicle to represent the missile signature. The L card is replaced with a G or GL card at the end of the step when the missile is launched. Exchange with a card allowing movement aborts the missile flight.

(6) Guidance (G) Card - The G card shows the vehicle remaining stationary while the missile is guided to its target. The G replaces the L card when the target is at relatively long range (over 1500 m). The cotton marker is placed halfway to the target at the same time and next to the target on the third step. The G card must remain on the board for two firing steps with impact and effects determined on the second step after launch. No movement is allowed during this sequence.

(7) Guide and Launch (GL) Card - The GL card shows the vehicle remaining stationary while guiding the missile to a short range target, and ready to launch a second missile in the same turn at another short range target. The cotton marker is placed at the target on the firing step after launch, and a second marker placed at the end of the step to show the second launch. The GL card is kept on the board for two firing steps, until the second impact is resolved. No movement is allowed during this process. However, if the GL card is placed on the first firing step, it can be

replaced by a card allowing movement after the missile fire is resolved on the second firing step. Rather than firing a second missile, the vehicle can then move on the next step. Simularly the GL card can replace a movement card after the first movement step to permit launch and guidance on the next two fire steps.

(8) Reload (R) Card - The R card shows the vehicle remaining stationary while reloading missiles or smoke grenades. The R card must remain on the board for two turns (1 min) to complete reloading one missile. Thus a total of four turns (2 min) is required to complete reloading a launcher with two missiles. Both missiles do not have to be loaded at the same location, since the vehicle can be moved after loading one missile, and then stopped for two turns in a second location to load the second missile. The R card also remains for two turns when reloading on-board launchers with smoke grenades.

(9) Pickup (P) Card - The (P) shows a personnel carrier (PC) remaining stationary while loading troops. A fire team marker must be adjacent to the vehicle at the start of the turn to start the loading process. The marker is placed on top of the vehicle on the first movement step, and then removed from the board on the second step to complete the loading. To load a squad, two fire team markers are loaded on successive turns. The PC may fire onboard weapons other than missiles while loading, but movement is not allowed.

(10) Unload (U) Card - The U card shows a stationary PC in the process of unloading troops. The process is shown in reverse to that used in loading. The PC may fire (except missiles) but not move during the turn spent unloading.

7. Movement Rules

a. Maximum Distance. When a movement step is announced, each U.S. player showing an M, FM, or D card may move his vehicle in any desired direction up to a specified maximum distance. The maximum movement distance allowed on different types of terrain is shown on the back of the M, FM, or D card. The player may choose to move less than, but not more than the maximum distance indicated for the terrain on the path of the vehicle. When moving over more than one type of terrain in the same step, the maximum distance is the smallest among the values for types of terrain used on that step.

b. Measurement. The action cards are three inches on each side and marked in one-half inch intervals to aid in measuring off the movement distance. Tank models are also about one inch long. The fastest procedure is to lay the action card ahead of the tank with bottom corner even with the tank front, and then move the tank up to the correct point relative to the card. For example, one 3 inch card length plus one-half a tank length gives 3.5 inches. Thus placing the middle of an M1 tank at the top corner of the card gives the correct distance moving on a dirt road with the M card. A ruler laid next to the intended route is useful moving several turns on a straight path. A ruler is also helpful in pushing the vehicle along when it is in the middle of the board beyond arm's length.

c. Terrain Types. The kinds of terrain are shown on the Dunn-Kempf board as follows: paved road (gray strips), dirt road (brown strips), cross

country (light green, tan, and red brown areas suggesting pastures, vineyards, crops, and plowed fields), woods, (dark green and black on raised uneven surface), and marsh/stream (blue lines with 1" unmarked strip on both sides). Dark green and black areas around fields are assumed to be bushes and thin tree stands that do not hinder movement or provide concealment for vehicles. Markers from Blockbuster are placed on the board to indicate dug-in defilade positions available in the open.

d. Rate Differences. The maximum distances shown on the M card represent the normal rate of movement for the vehicle. The distances on the FM card are reduced by one-half inch, representing a slower speed required to maintain a stable firing platform. The distances on the D card represent the vehicles maximum speed for each type of terrain, allowing one extra inch to be moved on each step.

8. Detection/Acquisition Rules

a. Observation Markers. Visual inspection of the terrain by the gunner and TC are represented by placement of the gun direction (GD) and field of voew (FOV) markers. After moving a vehicle, the markers are also moved and placed next to the vehicle to show the sectors currently under observation by the gunner and TC. The gunner is assumed to "see" anything intersected by a line projected along the GD marker except where line of sight (LOS) is interrupted by intervening terrain. The TC is assumed to "see" anything in the sector between lines projected along the edges of the FOV marker, except where LOS is interrupted in that sector. The GD and FOV markers may be changed to new orientations after any firing or movement step in the turn. The indicators may be oriented independently to cover entirely separate directions.

b. Detection Cards. Salmon or orange colored cards are placed on the board as a sign of OPFOR activity or other important information detectable by U.S. vehicles. A card is placed on the board when required by the scenario if at least one U.S. vehicle has the location in LOS, and a GD or FOV marker covers that direction. The card will usually appear during a movement step in the turn. Information that would be visually available in a similar situation in the field is given on the back of the card. The information about targets includes a description of the vehicle type, identification, and activity. In other cases, such as obstacles, a symbol and/or verbal description is given.

c. Card Inspection. When the card is placed on a turn step, any player whose vehicle has LOS, and a GD marker pointing at a portion of the card, or a FOV marker with sector including part of the card, may pick it up during the same step to read the activity and/or description given on the back. String is used to test LOS in questionable cases. Players that move their GD or FOV markers to cover the card must wait to inspect it on the next step of the turn. Inspection of the card represents target acquisition. Therefore, the player cannot reveal the back of the card to other players, except those that also have GD or FOV oriented to permit inspection of the card. However, the information can be reported on the platoon net using communication procedures.

d. Crew Detection. When the detection card represents a sign of activity, firing signature, or vehicle in the open, a card providing detection

information may be placed on the board even though no GD or FOV marker covers that location. The OPFOR controller then tells players whose vehicles have LOS to the card that the loader or driver (according to the orientation of the vehicle) has detected an unidentified signature or vehicle. The card may be inspected to obtain a description of the sign, signature, or vehicle type detected. At the end of the firing or movement step, the GD or FOV indicators may be oriented to cover the location, allowing inspection of a second card providing identification information on the next step. This slight delay represents the time required for detection and alerting communications within the crew.

e. Card Removal. Once a target is reported in platoon communications, the miniature representing the target and/or cotton markers representing its firing signature are placed on the board and the card removed. A card with symbol representing an obstacle is turned over and left on the board to show the location of the obstacle. Players that have not acquired the target may move their vehicle to gain LOS, or move their GD and FOV marker to cover the location.

f. Vehicle Visibility. Any vehicle in the open, or moving or firing in the edge of woods (outer one-half inch) is assumed to be visible whenever LOS exists from an acquiring vehicle. Vehicles in the woods are visible at a distance of one-half inch. Once placed on the board, OPFOR vehicles in the open remain on the board, even if LOS is later lost. OPFOR vehicles in the woods are removed when visibility is lost. U.S. vehicles remain on the board at all times, whether or not the OPFOR has LOS or visibility.

g. Personnel Visibility. Personnel in the open become detectable only when they move or fire, and remain visible so long as they remain in the open. Personnel in woods or built up areas are detectable only when they fire, and remain visible as long as they remain in one location. When personnel detected firing from woods or built up areas move away from that location they are removed from the board at the start of that movement step. Sagger teams are an exception to this rule. Only the Sagger missile signature can be detected, but the personnel are located up to one and one-half inches (75 m) to either side of the position of the signature.

h. OPFOR Locations. Position and movement of OPFOR elements in action, but undetected by any U.S. player, are recorded by the OPFOR controller so that movement rates and appearance of the elements in LOS locations are properly represented. OPFOR elements are moved and open fire to take advantage of any tactical weakness exhibited by the U.S. platoon.

9. Direct Fire Rules

a. Target Designation. Targets for the main gun or the coax are designated by placing the GD marker at arms length from the firing vehicle and pointing it at the intended target. Targets engaged with the TC's .50 caliber machinegun are similarly indicated by placing the FOV marker. The TC cannot observe elsewhere while engaging a target with his machinegun. When a target is designated, the range to target should also be determined using the tape measure.

b. Firing Delays. When a target is acquired by inspection of a detection card, the player may immediately designate the target and fire on the

next firing step. Players alerted to the target location by radio communication may designate and fire at target in the same manner as the first acquiring player. Without an alerting communication, other players may only turn their GD or FOV at the end of the step to cover the target, acquire and designate the target on the next step, and fire on the following firing step. This delay represents the additional time required to acquire a target when not alterted to its location.

c. Firing Procedure. Players with an F, M, L, OR G/L card may fire on previously designated targets when a firing step is announced. If no target is designated prior to the firing step, nc firing is allowed. A player may forego firing by simply withdrawing the GD or FOV marker at the start of the firing step. Each player that wishes to fire must inform the Fire Controller of the identification number of the firing vehicle or team, the type and number of the target, the ammunition used, and the target range. Other conditions affecting the outcome of the firing are judged by the Fire Controller.

d. Point of Aim. A specific point of aim on the terrain board must be indicated when conducting reconnaissance by fire or firing at hidden targets. The player may indicate the point by touching it or by placing the end of the tape measure at the point when determining range. The player must have LOS from his weapon to the aiming point. A hit and effect on a personnel target may be obtained with machinegun fire if the actual position of the target is within one-half inch (25 m) of the point of aim, within one-fourth inch (12.5 m) for a HEAT round, or exactly on target with a SABOT round. An arbitrary machinegun area of coverage 50 m wide is assumed in this case. A main gun hit on a hidden vehicle may be obtained if the LOS projected through the point of aim passes through any part of the area occupied by the vehicle.

e. Firing Effects. The Fire Controller determines the effects of fire for players showing an F, FM, or GL card (and G card on the second step after missile launch) after the firing procedure is completed. All gunfire on a step is treated as though it occurs at the same time, followed by all missile impacts. Thus players cannot change their decision to fire on the designated target based on the outcome of other players firing in the same step. For each round or burst fired, the Fire Controller uses tables to determine whether a hit occurs and, given a hit, whether the result was a kill (K), firepower kill (Kf), mobility kill (Km), or suppression (S).

f. Effect Markers. Players are informed of the effects of fire by the placement of markers (1/2 inch cardboard squares) on top of the target. A hit is shown by an asterisk on the top of the marker. The result is shown by a K, Kf, Km, or S on the underside of the marker. For infantry fire teams, the number of casualties is shown on the underside. A catastrophic kill (explosion and fire) is shown by placing a red cotton ball on top of the vehicle target and hit marker. A miss is shown by placing a black cotton ball near or beyond the target indicating an explosion of a HEAT round, or a brown cotton ball indicating dust or mud thrown up by a SABOT round. Misses with SABOT may not be indicated at the discretion of the Fire or OPFOR Controller. Effect markers, except misses, are left on the board where the hit was received until the end of the exercise and remain in place as a record of events to assist the after-action review. Miss markers are removed on the next fire step.

g. Damage Inspection. Hits, catastrophic kills, and misses may be "seen" by any player whose vehicle has LOS and GD or FOV covering that location. Players "seeing" these effects may report them on the platoon net. Players are not informed of the result of the hit until the marker is turned over to display the underside at the end of the next turn.

h. Suppression Effects. Any hit results in an automatic suppression for the remainder of that turn, and the entire next turn. When suppressed, the player controlling the target cannot move, shoot, or communicate. At the end of the next turn after the hit, the suppressive effect expires, and the hit marker is turned over to display the result. If the effect was simply an S, the player may then resume play as usual.

i. Kill Effects. Kill effects (K, Kf, or Km) remain in effect for one additional penalty turn. In case of a K effect, the player must remain inactive for the penalty turn. The player may resume communication if the result was a Kf or Km. However, the vehicle can move but not fire in case of a Kf, or fire but not move in case of a Km result.

j. Kill Reversal. After the penalty turn, the kill effects are "reversed," and play can then be resumed as if nothing had happened. The kill reversal procedure prevents permanent combat losses or damage on the U.S. side that would lead to omission or drastic alteration of practice on platoon tasks. Kill effects are not reversed on the OPFOR side. OPFOR infantry teams are "killed" when they have 50% casualties or more. The survivors are assumed to be absorbed automatically into other teams as replacements.

10. Indirect Fire Rules

a. Calls for Fire. Indirect fire support is obtained by communication with the Instructor/Controller acting as company commander and FIST. Any of the usual methods may be used to call for and adjust fires.

b. Delivery of Fires. The Fire Controller delivers indirect fires and assesses effects on scheduled turns during the Indirect Fire and Command/Control Phase. The Fire Controller places markers (black cotton balls) representing an artillery volley in a beaten zone determined from the indirect fire templates of the Dunn-Kempf kit. The point of impact is displaced slightly from the point indicated in the call for fire by a random factor. The markers remain on the board to continue to affect fire and movement in the next turn during the Direct Fire and Movement Phase.

c. Indirect Fire Effects. Vehicle effects damage are assessed on each Movement Step that a vehicle enters or moves through the beaten zone. Maximum movement distances are reduced by one inch (50 meters) when moving in the beaten zone. Artillery markers block LOS while they remain on the board.

d. Artillery Smoke. Smoke markers (white cotton balls) are placed in a line along the length of the beaten zone indicated on the indirect fire template. On the next turn, a second line is placed downwind adjacent to the first. This is repeated on the second turn after impact. The three lines are then picked up in the same sequence on the following three turns. If smoke is repeated, the entire process in repeated. Smoke markers block LOS like any terrain feature, except for vehicles with thermal sights.

Additional smoke falling at the same location has no additional effect other than prolonging the duration of the smoke.

e. Planning Aid. Tables 1 and 2 from the Dunn-Kempf (Revised) Combat Results Tables give more detailed information on U.S. and OPFOR indirect fire capabilities in the game. These tables are provided to the Platoon Leader to aid in planning.

f. Impact Delays. Preplanned fire using a TRP are delivered 1-5 turns (0.5 - 2.5 min) following the call for fire, depending on the type of artillery support available. Fire adjustments, depending on magnitude, are delivered one or two turns after the call. Final protective fire has a two turn delay. Fire on unplanned points is delayed 5-8 turns (2.5 to 4 min). Further information on these delays is shown in Dunn-Kempf Table 1 given to the Platoon Leader. The delays used in TRAX I are one turn less than the delays shown in Table 1.

11. On-Board Smoke.

a. Capabilities. On-board smoke may be used to obscure enemy LOS in accordance with vehicle capabilities for firing smoke grenades or generating exhaust smoke. Corresponding to Division '86 doctrine, white phosphorus (WP) rounds are assumed to be unavailable for tank guns. Smoke may be deployed on any step in the Direct Fire and Movement Phase.

b. Grenade Smoke. Firing of U.S. tank smoke grenades from turret mounted launchers is represented by placing two smoke markers next to the vehicle. The smoke markers are placed on the right and left sides of the line from the vehicle turret through the GD indicator, about one-half inch away from the vehicle. Analogous procedures, appropriately modified, are used with other vehicles having launchers in different positions, or allowing separate firing of launchers on the right and left sides of the turret. The smoke markers may be fired (and left) at any point on the vehicle path during a movement step.

c. Exhaust Smoke. Exhaust smoke from a stationary vehicle is represented by a smoke marker placed to the rear of U.S. vehicles (or left side of OPFOR vehicles). A second marker adjacent to the first, but displaced in the direction of the wind, is placed on the next turn if the smoke generator remains turned on. Exhaust smoke from a moving vehicle is shown by smoke markers placed at one inch (50 m) intervals along the path covered by the vehicle.

d. Visibility Effect. The cotton ball simulating smoke cuts off LOS like any other terrain feature. However, vehicles with thermal sights may see through smoke in the direction of the GD marker.

e. Effect on Fire. Direct fire, including missile impacts that are resolved on a given step of the turn, is not affected by smoke deployed during that same step. Smoke prevents direct fire and missile impacts only on subsequent steps.

f. Persistance. On-board smoke lasts for two turns and is adjusted for wind-drift in the same way as smoke laid by indirect fire. After remaining

on the board for two turns, smoke markers are picked up in the turn step corresponding to the original step on which they were placed.

g. Reloading. Smoke grenades may be fired twice by U.S. vehicles with launchers before the supply in the launchers is exhausted. The launchers may be reloaded while the vehicle remains stationary for two turns. The player must display an R card for two complete turns without firing or moving.

12. Modes of Play

a. Two-Player Mode. With players taking the positions of the Platoon Leader and Platoon Sergeant, each controls two vehicles representing their own vehicle and that of their wingman. In this mode, the exercise focuses on the individual responsibilities of the leader positions in the platoon.

b. Four-Player Mode. With players in the positions of Platoon Leader and Platoon Sergeant, along with two TCs, each controls his own vehicle. In this mode, the exercise provides opportunity for collective performance of platoon tasks.

APPENDIX C
TRAX I ADVANCED RULES

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1. Introduction

TRAX I advanced rules are intended to increase the accuracy of some aspects of the combat simulation, and to expand the scope of the gaming procedures to represent additional OPFOR threats and environmental conditions that further complicate modern ground combat. They should only be used after players are experienced in use of the basic rules, and are able to maintain a rapid pace of play. The rules may be used singly or in any desired combination to emphasize particular teaching points in scenarios designed to meet local training needs.

2. Communications Rules

a. Electronic Warfare (EW). The Basic EW procedure described on page 8 of the Dunn-Kempf Rules of Play (Revised), or the advanced rules in Supplement 3 may be used.

b. Open/Closed Hatch. No visual signals are permitted after enemy contact is made or indirect fire received, since vehicles are assumed to have closed hatches at that point. If a command to open hatches is given by the platoon leader, visual signals can again be used.

c. Night Operations. Small penlights may be used to present visual signals in night operations. Flares may be simulated by colored cotton balls or penlights hung from the ceiling or a string tied between coatrack stands. The game room should be kept in semi-darkness or lighted with red lights. A variable resistor used to control the lights may help to represent twilight and dawn.

d. Reduced Visibility. Hand signals cannot be seen beyond 50 meters in heavy fog or smoke, or beyond 100 meters in light fog or falling snow.

3. Movement Rules

a. Visibility Conditions. Movement is reduced to one-half of normal when moving in reduced visibility conditions, i.e., at night, in smoke, or through an area covered by the indirect fire template.

b. Distance Penalty. The maximum movement distance is reduced by one-inch (1/2") when starting movement from a halt, coming to a halt at the end of a move, moving in reverse, or firing on the move. The penalty can also be applied for each 90° turn or 90° pivot turn in urban terrain.

c. Prepared Woods. One additional inch (1") can be traveled when following a prepared path in the woods. A path can be prepared by moving the tank over the route, or when fighting positions and trails are prepared by engineers. Prepared paths are marked on the board with strips of masking tape.

d. Forest Roads. Fair weather roads in the woods that appear on the map are assumed to be no more passable than the woods, and are not marked on

the terrain board. To add a road useful in some scenario, mark the route with masking tape and allow movement at the cross-country rate.

e. Mud Conditions. Vehicle movement is reduced by one-half (1/2) in areas declared to be muddy by the Instructor/Controller or in a trafficability overlay provided with orders. This reduction does not apply to paved roads through the area.

f. Vehicle Recovery. A vehicle may become mired down in marsh/stream areas. Roll one die on every turn moving across such areas. A roll of one indicates the vehicle is mired. It must then be recovered by another vehicle that moves nearby and uses two turns to attach a cable, one turn to pull the vehicle to the edge of the area, and two further turns to detach the cable. The platoon leader may also call for a recovery vehicle. An M88 is later placed on the board by the Instructor/Controller, allowing for travel from its normal location in the battalion. It must then travel to the location of the mired vehicle (subject to enemy fire enroute) and perform a 5-turn recovery sequence like that above.

g. Track Breakage. U.S. vehicles using dash speed are subject to the possibility of breaking track. U.S. players keep a chain of paper clips as a record, adding one paper clip each turn the Dash (d) card is used. When the D card is displayed at the start of a turn two dice are rolled to determine if a track breaks. If the number of the dice is less than or equal to the number of clips, then the track breaks. A Km marker is placed at the vehicle location, and the effect reversed on the next turn. If the player announces that he is checking track tension at a halt for four turns, one half of the accumulated paper clips may be removed from the chain. This rule may be used to increase awareness of the wear and tear incurred by moving at top speed, in a scenario requiring rapid road or cross-country movement.

4. Detection/Acquisition Rules

a. Detection/Acquisition Range. The procedures given in the Dunn-Kempf Advanced Rules of Play (page 3) may be used with the detection cards. If the U.S. vehicle is within the ranges given in Dunn-Kempf Tables 7 and 8, the Basic detection and acquisition rules are used unchanged. Beyond those ranges, detection is probabilistic with a random number less than or equal to 30 (for the attacker) or 90 (for the defender) required to see the detection card.

b. Loader's FOV Marker. A 120 FOV marker is used to represent the tank loader's sector when the hatches are open. The loader can detect air targets, moving vehicles, and firing signatures in his sector, reporting these to the TC. The TC then acquires the target by the normal procedure. Thus, if the loader's sector covers a target position, a detection card is put down providing detection information to the player. It is replaced by a card with identification information when the GD or FOV markers are moved to cover that location representing his use of binoculars. The loader's FOV marker is removed when a main gun target is designated and engaged.

c. Driver's FOV. The driver is assumed to have a 90° FOV to the front of the vehicle. No marker is used to indicate this FOV. The driver detects moving vehicles and firing signatures in his sector, which are then acquired

by the TC, as in the case of the loader. If the vehicle is in hull defilade or greater, the driver's FOV is cut off.

d. Vehicle Movement. The detection ranges given in Tables 7 and 8 are cut in half when observing from a moving vehicle.

e. Closed Hatch. The TC's and Loader's FOV markers are changed to ones with a 60° sector when buttoned up.

f. Urban Terrain. Require the platoon to work with infantry in a company team. Represent most target detection by giving visual signals, or radio/telephone messages from the infantry requiring direct fire support on targets in buildings.

g. Limited Visibility. Night and other conditions reducing visibility have the effect of lowering the probability of detection according to the values given in the Dunn-Kempf Advanced Rules of Play (page 4). The loader's and driver's FOV are eliminated except for detection of firing. If night vision equipment is available at these positions then a 30° FOV may be allowed. The TC's FOV must coincide with the main gun and he must detect and acquire targets using the gunner's sight. Thus, the GD indicator must be trained on the target to complete acquisition, after detection. More active scanning with the gunner's sight is assumed under reduced visibility, giving it a 30° sector for detection, rather than the narrow sector used in the Basic Rules.

h. Wet/Muddy Ground. Dust is reduced under wet or muddy conditions so that the Loader and Driver cannot detect moving vehicles.

5. Direct Fire Rules

a. State of Training. The effect of having newly formed crews, or crews that have no recent training, may be simulated by rolling one die before each firing. If a 1, 2, or 3 is rolled, the engagement delay given in the Dunn-Kempf Advanced Rules of Play is imposed for one firing step (not turn). This procedure given a one-half (1/2) chance of a 10 second delay. Other values for the die roll may be used to represent greater or lesser states of training. In addition to the effect on time, the modification to hit probability for 2nd or 3rd round on the same target is not used in determining firing effects.

b. Effect Reversal. The reversal of firing effects used in the basic rules can be omitted in advanced play. This rule should be used with individual casualty assessment to crews as well as infantry units. Permanent casualties are particularly useful when the objectives of training concern operations with understrength crews, reorganization of crews and units, medical service procedures, or cross-training of leaders. Replacements can also be provided at a reduced level of training. Ordinarily, this method should be used after completing a given scenario at least once with effect reversal, so that the contrasting tactical effects of casualties can be clearly seen. If time is available, it is best to repeat the scenario more than once so a variety of different outcomes can be experienced.

c. Casualties. Casualties can be assessed on a an individual basis using the Dunn-Kempf Advanced Rules of Play (pages 4-6).

d. Built-up Areas. Dunn-Kempf houses may be concentrated in one area with the same density shown on the map to represent urban terrain. Blockbuster rules may be used to resolve fire on targets in buildings. Use roof colors to symbolize type of construction, e.g., green for wood-frame, red for brick, yellow for cement block with stucco, gray for reinforced concrete. Varied heights and types of buildings, e.g., apartment and business blocks, factories, office buildings, etc., may also be made up to represent a particular town more faithfully than is possible with the houses alone.

e. Urban LOS. A pie-shaped section of cardboard with angle at the maximum elevation of the tank main gun should be made up to use in testing LOS to targets on upper floors of buildings.

f. Multiple Returns. The player of a vehicle having a laser rangefinder must roll one die when firing the main gun. On a die roll of one, the player has a multiple range return, and he must decide whether to rerange and fire on the next step, or go ahead and fire on the same step while suffering a hit probability penalty assessed by the Fire Controller.

g. Loader's Machinegun. With an M1 tank, or other tank having a loader's machinegun, infantry targets can be engaged within range. Players should use the loader's FOV marker, and place it to designate the targets or points of aim with this weapon. Fire is resolved using Table A-1 for the coax.

h. Ammunition Limits. Expenditure of ammunition by the U.S. platoon is limited to that in ready racks and boxes. Once the ready supply is exhausted, the weapon cannot be used without the TC announcing that the ammunition will be transferred and two full turns have passed after the announcement. The commander's and loader's machineguns cannot be reloaded while buttoned up. Typical values for ready ammunition and reserve ammunition available for the M1 tank are shown in Table C-1. One main gun round is assumed to be loaded and is included in the ready ammunition. Other values may be used corresponding to local SOPs and load plans.

6. Air Module. Fire support by both rotary-wing and fixed wing aircraft, air defense, and air-mobile operations can be played using the Dunn-Kempf advanced Rules of Play (pages 6-7). These rules are used by the OPFOR controller in Basic scenarios presenting attack helicopter targets.

7. Engineer Module. Mines and obstacles are introduced into the game by using the Dunn-Kempf Engineer Supplement. Detection cards should be placed on the board following the usual procedures for target detection when OPFOR obstacles come in detection range. The common tactical symbols used on overlays should be used on the back of the card to indicate the nature of the obstacle. Markers from Blockbuster are placed to indicate vehicle prepared positions dug-in by supporting engineers. Completion of other obstacles by engineer units may be shown by placing masking tape with appropriate tactical symbols.

Table C-1
Ready Ammunition and Reloads

Weapon and Ammunition	Ready Bursts	Ready Rounds	Reserve Bursts	Reserve Rounds
Main Gun				
HEAT		9		15
APDS		9		15
APFSDS		8		0
Coax (7.62 mm) (25 rnds/burst)	192	4800 (24 boxes)	192	4800 (24 boxes)
Commander (50 cal) (12.5 rnds/burst)	8	100 (1 box)	72	900 (9 boxes)
Loader (7.62 mm) (25 rnds/burst)	8	200 (1 box)	48	1200 (6 boxes)

APPENDIX D
TRAX I EXERCISE PLANS

APPENDIX D-1
TACTICAL ROAD MARCH (1)

1. Prerequisite Training

a. Platoon Leader and Platoon Sergeant should:

(1) Review STX A in FC 17-15-1, and standards for prerequisite tasks listed in Table D-1.

(2) Review FM 17-15 (Test) for further explanation of tasks as needed.

(3) Review Tank Company and Platoon SOPs to identify elements that may apply to STX A and platoon tasks.

(4) Talk through possible STX situations and tasks to gain a common understanding of doctrine. Practice "what-if" drills.

2. Leader Training

a. Training exercises with the attached TRAX I scenario may be used along with platoon task and drill training to prepare for STX A or a similar ARTEP exercise. They may also provide substitute or sustainment training when field training is not possible. Tactical Road March scenarios provide an introduction to the TRAX I method of combat gaming, and should be completed before attempting more complex exercise scenarios.

Table D-1

Tasks in Tactical Road March (1)

	TASK	MTP Page
1.	Establish Perimeter Security	6-6
2.	Establish an Observation Post	6-10
3.	Perform Tactical Planning (Issue Warning Order)	6-9
4.	Perform Plt Ldr Reconnaissance	6-8
5.	Perform Tactical Planning (Issue Oral OPORD)	6-9
6.	Perform Stand-to Activities	6-69
7.	Establish All-round Movement Security	6-53
8.	Perform Tactical Road March	6-39
9.	Execute Actions at a Halt	6-38
10.	Defend Against Air Attack	6-41
11.	React to Indirect Fire	6-57
12.	Execute Actions on Contact	6-35
13.	Perform Movement Security Using Smoke	6-68
14.	Recover a Tank by a Similar Vehicle	6-23
15.	Execute Actions on Contact	6-35
16.	Perform Tactical Road March	6-39

b. The following leader tasks will be learned or reinforced by completion of the Tactical Road March (1) exercise:

(1) Planning Combat Operations.

(2) Provide Command and Control of a Unit.

(3) Collective tasks from FC 17-15-1, and individual tasks from FM 17-19 (E/K) (Level 4) that support STX A.

c. Main teaching points:

(1) Perimeter Security. Prepare positions, move back in hide positions, and establish OPs covering perimeter. Alternate positions and withdrawal routes are needed in an assembly area (AA) just as for a battle position.

(2) Tactical Planning. Request clarification of your orders and additional guidance if needed for planning. Get information on location of friendly units. Backward plan to hit your SP and RP on time. Anticipate danger points in movement and fire planning.

(3) Reconnaissance. Conduct ground recon if possible to confirm positions of SP, route, and CPs in LOS. Find terrain features useful in reacting to potential threats.

(4) Troop Leading. Use warning order (WO) to ensure platoon completes timely preparations. Ensure Plt Sgt and TCs copy overlay, TRPs, and CEOI correctly. Delegate some duties to Plt Sgt. Emphasize any unusual or nonroutine aspects of mission and plan.

(5) Prepare and Initiate Movement. Start engines together. If vehicles are dispersed in an AA, designate a rally point to assemble in march order.

(6) All-round Security. Maintain security throughout movement. Continuously analyze the situation, anticipating possible dangers and possible lapses of vigilance. Exert command and control to prevent surprise. Use formations to maintain mutual support. Plan and request deviations along route to minimize duration and extent of exposure.

(7) Unscheduled Halt. Establish security, report, and take initiative within constraints of orders to overcome the problem.

(8) Defend Air Attack (HIND-D). Use brevity codes, cardinal directions, and drill commands to obtain an immediate response by the platoon. Pop smoke, take cover (if available) or evasive action and return fire with SABOT.

(9) React to Indirect Fire. Evade the impact area, using irregular movement and/or exhaust smoke to hinder adjustment. Indirect fire will often be controlled by helicopter observers. Assume MOPP-4, monitor NBC conditions, and request return to lower MOPP level when negative. Reestablish coordinated movement and all-round security as soon as possible.

(10) Actions on Contact (MANPAC). Use brevity codes, cardinal directions, and drill commands to obtain an immediate response by the platoon. Pop smoke, take cover or move evasively (SAGGER dance), and distribute return fire around the launch point. Continue to move concealed by exhaust smoke. Call suppressive fire after platoon reacts. Conserve ammo by limiting fire to visible targets or during flight of the missile. Keep the location under observation at least until indirect fire arrives. Maintain observation of other potential threat locations at the same time.

(11) Recover a Vehicle. If time permits, establish security, conceal vehicle under fire with smoke, overwatch recovery operation, tow to secure position, obtain assistance, and leave vehicle if necessary to complete mission. If time is short, abandon vehicle, report location, and request recovery.

(12) Action on Contact (RPG-16). Suppress with machineguns, conceal movement with smoke, and sprint to move rapidly out of range. Prevent vulnerability to new threats from other directions resulting from focus on previous or current contact.

(13) Command Transfer. Make contact by radio prior to visual contact. Report contact and exit prior net. Link up without halting and follow visual signals to designated position in AA.

(14) Tactical Road March (General). A tactical march is not an administrative march. Assume possible contact unless orders indicate otherwise. Clarify rules of engagement; travel with weapons hold, tight, or free. Plan suppressive fires and smoke missions to aid secure movement.

3. Standards

a. Primary performance standards are listed in the schedule for the mission scenario. Standards are based on those given in FC 17-15-1 for STXs and platoon tasks, taking into account the specific conditions created in the scenario situations and the actions available on the gameboard. Additional task standards may be used based on local SOPs and the emphasis wanted in training.

b. Standards should not be treated as absolute inflexible requirements. There can be several alternative courses of action that are effective in a given tactical situation. The Instructor/Controller should judge whether the standards are appropriate under the circumstances.

4. After-Action Review (AAR)

a. The techniques presented in Chapter 2 of FC 17-15-1 should be used in conducting AARs.

b. The action can be interrupted at the SP, before recaching CP2, or before reaching the RP, to conduct AARs on the immediately preceding events. This may be useful for relatively inexperienced personnel when a large number of items need discussion. For more experienced personnel, the scenario need not be interrupted and the AAR conducted after completing the entire exercise.

5. Follow-up

a. After all platoons have completed one or more exercises, the company commander may wish to lead a group discussion with the platoon leaders and platoon sergeants. The platoons can compare notes while the commander has the opportunity to resolve tactical disagreements and covey his tactical guidance and expectations. In this context, he may conduct "what-if" drills to emphasize main points.

b. Plan and conduct platoon training on specific tasks to correct training deficiencies that have been revealed. This training can be combined usefully with practice on crew and platoon drills.

c. Prepare and run additional exercises with this type of mission on other terrain boards until it is clear that the Plt Ldr, Plt Sgt, and TCs can readily adapt to new terrain and easily overcome problems in new situations.

TACTICAL ROAD MARCH (1)

Situation:

It is the third day of conflict, and 2nd Bde has repulsed initial attacks northeast of Hunfeld. You are the Platoon Leader of 2d Platoon, Co A, TF 1-14 Armor, 1st Bde and are located with Co A in an assembly area VIC NB572224. Co B and Co C are west of Mengers and Arzell, while Co D has been cross attached. Although the area is relatively secure, incidents of infiltration have been increasing as the TF prepares to attack east through elements of 2nd Bde. The time is 0725, resupply has been completed, and you have been directed to report to the company commander. You report at 0730, and the commander gives you the following information with a map overlay.

"LT _____, our company and Co A, 2-92 Mech are being task organized into company teams. Your platoon will be working with Co A 2-92 Mech. I want you to move to their location vicinity, Ringberg NB580275, using the route on the overlay. Bn elements had several encounters with infiltrators during the night, so contact is possible. However, other U.S. units may be moving through the area so you should travel with weapons tight. A member of TM A will meet you at the RP (NB583273) to guide you to their location. Use my net to report SP and check points enroute. Establish contact with TM A on their CMD net once you reach CP3. Cross SP at 0800 and RP NLT 0820. Bn mortars will be available to support you move from SP to CP 3. FIST is located at NB577224. His call sign is F40. Plan up to four TRPs, and coordinate them prior to departure. By the way, the train tracks at Check Point 1 are in bad shape. They're not to be destroyed, so cross only at the crossing site at CP 1. If you can't cross at CP 1, contact me for permission to cross elsewhere. Current weather report gives pressure 72.9 cm, temperature 21° C, and wind NW at 2-5 km/hr."

CEOI Extract: R08 - Cdr, Co A/1-14 Armor (TM B)
R14 - 2nd Plt Ldr, Tank 1
R53 - 2nd Plt Sgt, Tank 3
R39 - TC, Tank 2
R70 - TC, Tank 4
I05 - Cdr, Co A/2-92 Mech (TM A)
Authenticate ZULU/HOTEL - GOLF

Hünfeld

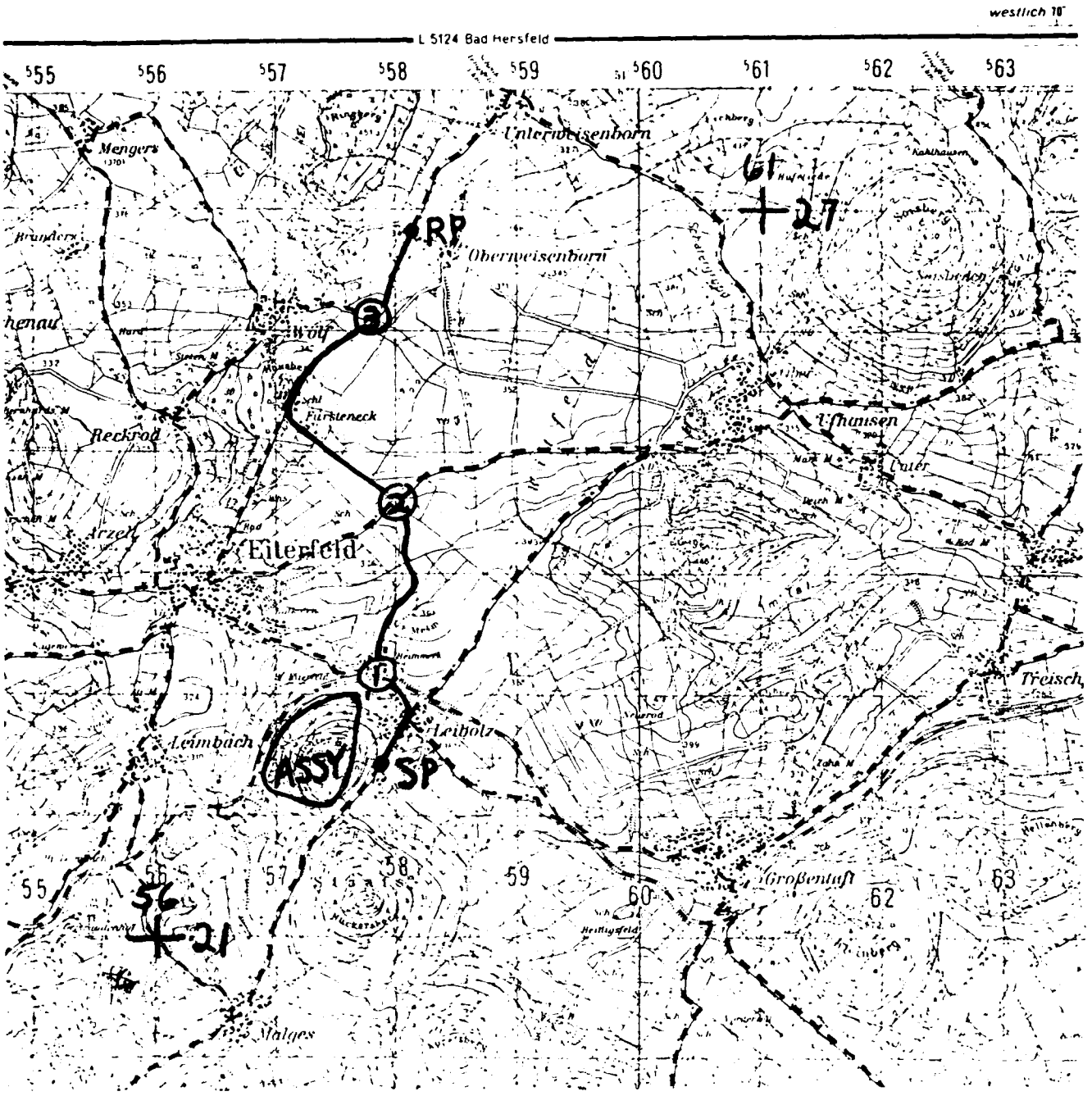

Figure D-1. Map overlay for Tactical Road March (1) exercise.

Training and Evaluation Schedule
Tactical Road March (1)

	Event	Time	Location	Standard	Remarks
1.	Establish Perimeter Security/ Establish OPs	H-30	Tng Facility	AMTP Task p 6-6 and 6-10 Plt Sgt/TCs place tanks 1. OPs established, vehicles hid 2. Primary and alt positions, and withdrawal routes planned 3. OP at NB569271	Inst/Ctlr directs Plt Sgt to supervise occupation of assy area VIC NB572224 (4 M1 or M60 series tanks), and prepare sketch rangecard.
2.	Receipt of FRAGO	H-30	Tng Facility	Plt Ldr issues warning order to Plt Sgt/TCs	Inst/Ctlr issues FRAGO, CEOI, map w/overlay to Plt Ldr.
3.	Plt Ldr Performs Tactical Planning/ Recon	H-25	Tng Facility	AMTP Tasks p 6-8 and 6-9 1. Conducts map and brief ground reconnaissance 2. Coordinates fire plan with FIST 3. Prepares Op Order	Dunn-Kempf screen hung just N of Leibolz to limit view of board to LOS from assy area and SP. Instr/Ctlr accepts fire plan as FIST.
4.	Plt Ldr Issues Op Order	H-10	Tng Facility	Order will include: Situation Mission Execution Fire support Service Support Command & Signal	Inst/Ctlr evaluates order for accuracy and completeness of information. Tape recorder turned on when order started.
5.	Platoon Stand-To/ Prepares for Departure	H-5	Tng Facility	AMTP Task p 6-53 and 6-69 1. Performs commo checks 2. Countdown to start engines 3. Platoon enters Co radio NET	Commo follows CEOI and radio SOP throughout march.
6.	Plt Departs Establishes All-round Movement Security	H-2	Note: references below are to locations on map and terrain NB572224	AMTP Task p 6-53 1. Plt Ldr controls movement and assigns areas of responsibility 2. Plt departs in column formation with all-round security	Inst/Ctlr checks vehicle intervals, gun directions, and TC's FOV throughout march.
7.	Cross SP/ Perform Tactical Road March	H	NB578224	AMTP Task p 6-39 1. Plt crosses SP in $\pm$ 5 min 2. SP reported on Co NET	Instr/Ctlr checks time at SP, commo procedures, use of CEOI. Place detection card for train on tracks by church.

	Event	Time	Location	Standard	Remarks
8.	Execute Activities at a Halt	H+1	NB578232	AMTP Task p 6-38 1. Clears route w/ herringbone 2. Establish all-round security 3. Spot Report 4. Resume march. Report CP1 when crossed	Inst/Ctlr places detection card indicating train at crossing to halt Plt. If Plt disperses and calls Bn for permission to cross, Ctlr moves train after two turns.
9.	Defend Against Air Attack	H+4	NB578233	AMTP Task p 6-41 1. Platoon drill (p 35) 2. Pop Smoke 3. Fire SABOT 4. Spot Report 5. Continue movement	If Plt does not disperse, OPFOR Ctlr places detection card for HIND-D VIC 603235. Otherwise, air attack begins after Plt crosses CP 1.
10.	React to Indirect Fire	H+5	NB582238	AMTP Task p 6-57 1. Evasive movement 2. Close hatches/go to MOPP-4 3. Spot Report 4. Report CP2 when crossed	Fire Ctlr places arty fire (152 mm) on road at Plt location.
11.	Actions on Contact/ Use Smoke	H+6	NB581245	AMTP Task p 6-35 1. Platoon drill p 3-25 (contact rt) 2. Use on board smoke 3. Evasive movement (SAGGER drill) 4. Spot Report 5. Call fire using TRP 6. Continue movement	OPFOR Ctlr places detection card for SAGGER in woodline VIC NB596243 when lead vehicles pass CP 2. Move team in woods after first engagement.
12.	Recover a Vehicle	H+7 to 13	NB575250	AMTP Task p 6-23 1. Establish security 2. Spot Report 3. Prepare tank for towing (5 turns) 4. Resume movement 5. Drop tank at secure position 6. Report Location	Card given to inform TC that his engine died, and restart procedure is not effective. When reported, direct Plt Ldr to tow vehicle, and to leave it in a secure position for recovery by TM A. OPFOR Ctlr may re-engage from VIC NB596243 if Plt vehicles are exposed and IF ineffective.

Event	Time	Location	Standard	Remarks
13. Actions on Contact	H+15		AMTP Task p 6-35 1. Platoon drill p 3-25 (contact rear) 2. Suppress w/50 cal, HEAT 3. Use exhaust smoke 4. Speed up, move to cover or beyond range 5. Spot Report	OPFOR Ctlr places detection card and engages rear vehicle with RPG-16 from school building VIC 572254 after platoon passes.
14. Cross CP3/ Perform Tactical Road March	H+17	NB578261	AMTP Task p 6-39 1. Report CP 3 2. Leave Co NET 3. Enter TM A NET, request permission and authenticate	Inst/Ctlr simulates TM A, requests authentication. Places detection card for M113 at RP as contact element.
15. Cross RP	H+20	NB583273	1. Links up without stopping 2. Acknowledges hand arm signals 3. Follows to AA w/o radio	Inst/Ctlr moves to M113 to TM A area VIC NB576275 using signal for follow me, left turn, right turn, coil.
16. After-Action Review	20-30 minutes	Tng Facility		Use procedures from FC 17-15-1, Ch 2.

Tactical Road March (1)

Miniature Models

U.S. Force:

4 M1 Tanks
1 M113A1 APC

OPFOR:

1 HIND-D with AT-C (Sagger-C), 4 rounds
1 AT-3C (Sagger-C) MANPAC Team, 2 rounds
1 RPG-16 Team, 4 rounds

Other:

1 Field-Expedient Train Model:
Upside-down AVLB (engine)
One-inch wide-back plastic report binding (cars)

Detection Cards

1. Train slowly moving west.
2. Train halted on tracks, engine blocking CP1.
3. Hovering attack helicopter, HIND-D or -E fires missile.
4. Flash, smoke. Sagger missile approaching.
5. Flash, smoke. RPG-16 fire from base of school building.
6. APC behind building. Front of M113 exposed.

APPENDIX D-2
TACTICAL ROAD MARCH (2)

1. Prerequisite Training

a. Platoon Leader and Platoon Sergeant should:

(1) Review STX A in FC 17-15-1, and standards for prerequisite tasks listed in Table D-2.

(2) Review FM 17-15 (Test) for further explanation of tasks as needed.

(3) Review Tank Company and Platoon SOPs, and local unit SOP to identify elements that may apply to STX A and tasks.

(4) Talk through possible STX situations and tasks to gain a common understanding of doctrine. Practice "what-if" drills.

2. Leader Training

a. Training exercises with the attached TRAX I scenario may be used along with platoon tasks and drill training to prepare for STX A or a similar ARTEP exercise. They may also provide substitute or sustainment training when field training is not possible. Tactical Road March scenarios provide an introduction to the TRAX I method of combat gaming, and should be completed before attempting more complex exercise scenarios.

Table D-2

Tasks in Tactical Road March (2)

	TASK	MTP Page
1.	Establish Perimeter Security	6-6
2.	Establish an Observation Post	6-10
3.	Perform Tactical Planning (Issue Warning Order)	6-9
4.	Perform Plt Ldr Reconnaissance	6-8
5.	Perform Tactical Planning (Issue Oral OPORD)	6-9
6.	Perform Stand To Activities	6-69
7.	Establish All-round Movement Security	6-53
8.	Perform Tactical Road March	6-39
9.	Execute Actions at a Halt	6-38
10.	Actions on Contact	6-35
11.	Perform Movement Security Using Smoke	6-68
12.	React to Indirect Fire	6-57
13.	Defend Against Air Attack	6-41
14.	Reconnoiter an Obstacle	6-19
15.	Actions on Contact	6-35
16.	Perform Tactical Road March	6-39

b. The following leader tasks will be learned or reinforced by completion of the Tactical Road March (2) exercise:

(1) Planning Combat Operations

(2) Provide Command and Control of a Unit

(3) Collective tasks from FC 17-15-1, and individual tasks from FM 17-19 (E/K) Level 4 that support STX A.

c. Main teaching points:

(1) Perimeter Security. Prepare positions, move back in hide positions, and establish OPs covering perimeter. Alternate positions and withdrawal routes are needed in an assembly area (AA), just as for a battle position.

(2) Tactical Planning. Request clarification of your orders and additional guidance if needed in planning. Get information on location of friendly units. Backward plan to hit your SP and RP on time. Anticipate danger points in movement and fire planning.

(3) Reconnaissance. Conduct ground recon if possible to confirm position of SP, route, and CPs in LOS. Identify terrain features useful in reacting to potential threats.

(4) Troop Leading. Use Warning Order (WO) to ensure platoon completes timely preparations. Ensure Plt Sgt and TCs copy overlay, TRPs, and CEOI correctly. Delegate some duties to the Plt Sgt. Emphasize any unusual or nonroutine aspects of mission and plan.

(5) Prepare and Initiate Movement. Start engines together. If vehicles are dispersed in an AA, designate a rally point to assemble in march order.

(6) All-round Security. Maintain security throughout movement. Continuously analyze the situation, anticipating possible dangers and possible lapses in vigilance. Use formations to maintain mutual support. Plan and request deviations along route to minimize duration and extent of exposure.

(7) Unscheduled Halt. Establish security, report, and take initiative within constraints of orders to overcome the problem.

(8) Actions on Contact (MANPAC). Use brevity codes, cardinal directions, and drill commands to obtain an immediate response by the platoon. Pop smoke, take cover or move evasively (SAGGER dance), and distribute return fire around the launch point. Continue to move concealed by exhaust smoke. Call suppressive fire after platoon reacts. Conserve ammo by limiting fire to visible targets or during flight of the missile. Keep the location under observation until indirect fire arrives. Maintain observation of other potential threat locations at the same time.

(9) React to Indirect Fire. Evade the impact area, give alarm (GAS), and avoid chemical contamination of personnel or vehicles. Consider wind drift and choose bypass consistent with mission. Give NBC-1 report by SOP, remain in MOPP-4, and warn friendly contacts of possible contamination.

(10) Defend Air Attack (HIND-D). Use brevity codes, cardinal directions, and drill commands to obtain an immediate response by the platoon. Pop smoke, take cover (if available) or evasive action, and return fire with SABOT.

(11) Recon an Obstacle. Warn the platoon of obstacle and likely contact. Deploy in secure positions and report location and extent of obstacle. Recon by fire, then approach for visual recon with overwatching elements. Check for approach routes, mined areas, breach or bypass points, and complete report. Maintain all-round security when moving to bypass, expect rear engagement, and use exhaust smoke if appropriate.

(12) Actions on Contact (RPG-16). Suppress with machineguns, conceal movement with smoke, and sprint to move rapidly out of range. Prevent vulnerability to new threats from other directions resulting from focus on previous or current contact.

(13) Command Transfer. Make contact by radio prior to visual contact. Report contact and exit prior net. Link up without halting and follow visual signals to designated position in AA.

(14) Tactical Road March (General). A tactical march is not an administrative march. Assume possible contact unless orders indicate otherwise. Clarify rules of engagement; travel with weapons hold, tight, or free. Plan suppressive fires and smoke missions to aid secure movement.

3. Standards

a. Primary performance standards are listed in the schedule mission scenario. Standards are based on those given in FC 17-15-1 for STXs and platoon tasks, taking into account the specific conditions created in the scenario situations, and the actions available on the gameboard. Additional task standards may be used based on local SOPs and the emphasis wanted in training.

b. Standards should not be treated as absolute requirements. There can be several alternative courses of action that are effective in a given tactical situation. The Instructor/Controller should judge whether the standards are appropriate under the circumstances.

4. After-Action Review (AAR)

a. The techniques presented in Chapter 2 of FC 17-15-1 should be used in conducting AARs.

b. The action can be interrupted at the SP, before reaching CP 2, or before reaching the RP, to conduct AARs on the immediately preceding events. This procedure may be useful for relatively inexperienced personnel when a large number of items need discussion. For more experienced personnel the

scenario need not be interrupted and the AAR conducted after completing the entire exercise.

5. Follow-Up

a. After all platoons have completed one or more exercises, the company commander may wish to lead a group discussion with the platoon leaders and platoon sergeants. The platoons can compare notes while the commander has the opportunity to resolve tactical disagreements and convey his tactical guidance and expectations. In this context, he may conduct "what if" drills to emphasize main points.

b. Plan and conduct platoon training on specific tasks to correct training deficiencies that have been revealed. This training can be combined usefully with practice on crew and platoon drills.

c. Prepare and run additional exercises with this type of mission on other terrain boards until it is clear that the Plt Ldr, Plt Sgt, and TCs readily adapt to new terrain and easily overcome problems in new situations.

TACTICAL ROAD MARCH (2)

Situation:

It is the third day of conflict, and 2nd Bde has repulsed initial attacks northeast of Hunfeld. You are the Platoon Leader of 2d Platoon, Co A, TF 1-14 Armor, 1st Bde and are located with Co A in an assembly area VIC NB578275. Co B and Co C are west of Arzell and Malges, while Co D has been cross attached. Although the area is relatively secure, incidents of infiltration have been increasing as the TF prepares to attack east through elements of 2nd Bde. The time is 0725, resupply has been completed, and you have been directed to report to the company commander. You report at 0730, and the commander gives you the following information with a map overlay.

"LT _____, our company and Co A, 2-92 Mech are being task organized into company teams. Your platoon will be working with Co A, 2-92 Mech. I want you to move to their location near Grossentaft, VIC NB613225 using the route on the overlay. Bn elements had several encounters with infiltrators during the night, so contact is possible. However other units may be moving through the area, so you should travel with weapons tight. A member of TM A will meet you at the RP (NB604224) to guide you to their location. Use my net to report SP and check points enroute. Establish contact with TM A on their CMD net once you reach CP 3. Cross SP at 0800 and RP NLT 0820. Bn mortars will be available to support your move from SP to CP3. FIST is located at NB574275. His call sign is F40. Plan up to four TRPs, and coordinate them prior to departure. By the way, the bridge at NB585271 is in bad shape, so cross in low gear, one tank at a time. If the bridge looks unsafe contact me for permission to cross elsewhere. Current weather report gives pressure 77.3 cm, temperature 17.6° C, and wind NW at 7-10 km/hr."

CEOI Extract: R08 - Cdr, Co 1/1-14 Armor (TM B)
R14 - 2nd Plt Ldr, Tank 1
R53 - 2nd Plt Sgt, Tank 3
R39 - TC, Tank 2
R70 - TC, Tank 4
I05 - Cdr, CO A/2-92 Mech (TM A)
Authenticate ZULU/HOTEL - GOLF

Hünfeld

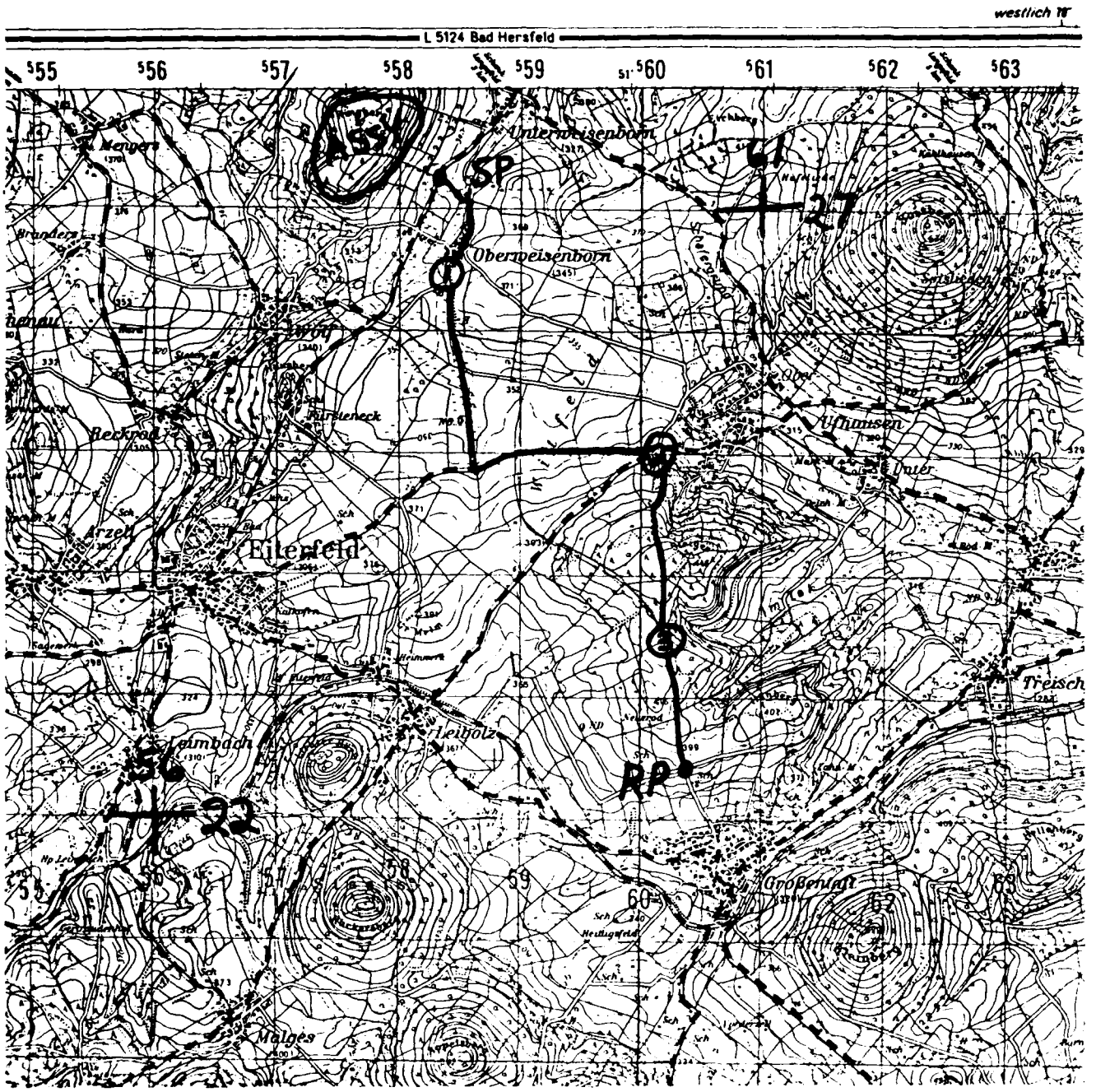

Figure D-2. Map overlay for Tactical Road March (2) exercise.

Training and Evaluation Schedule
Tactical Road March (2)

	Event	Time	Location	Standard	Remarks
1.	Establish Perimeter Security/ Establish OPs	H-30	Tng Facility	AMTP Task p 6-6 Plt Sgt/TCs place tanks 1. OPs established, vehicles hid 2. Primary and alt positions, and withdrawal routes planned	Inst/Ctlr directs Plt Sgt to supervise occupation of assy area VIC NB578275 (4 M1 or M60 series tanks), and prepare sketch rangecard.
2.	Receipt of FRAGO	H-30	Tng Facility	Plt Ldr issues warning order to Plt Sgt/TCs	Inst/Ctlr issues FRAGO, CEOI, and map w/overlay to Plt Ldr.
3.	Plt Ldr Performs Tactical Planning/ Recon	H-25	Tng Facility	AMTP Tasks p 6-8 and 6-9 1. Conducts map and brief ground reconnaissance 2. Coordinates fire plan with FIST 3. Prepares Op Order	Dunn-Kempf screen hung just N of Oberweisenborn to limit view of board to LOS from assy area and SP. Instr/Ctlr accepts fire plan as FIST.
4.	Plt Ldr Issues Op Order	H-10	Tng Facility	Oral order will include: Situation Mission Execution Fire support Service Support Command & Signal	Inst/Ctlr evaluates order for accuracy and completeness of information. Tape recorder turned on when order started.
5.	Platoon Stand-To/ Prepares for Departure	H-5	Tng Facility	AMTP Task p 6-53 and 6-69 1. Performs commo checks 2. Countdown to start engines 3. Platoon enters Co radio NET	Commo follows CEOI and radio SOP throughout march.
6.	Plt Departs/ Establishes All-round Movement Security	H-2	Note: references below are to locations on map and terrain board NB578275	AMTP Task p 6-53 1. Plt Ldr controls movement and assigns areas of responsibility 2. Plt departs in column formation with all-round security	Inst/Ctlr checks vehicle intervals, gun directions, and TC's FOV throughout march.
7.	Perform Tactical Road March/ Cross SP	H	NB583273	AMTP Task p 6-39 1. Plt crosses SP in $\pm$ 5 min 2. SP reported on Co NET	Instr/Ctlr checks time at SP, commo procedures, use of CEOI.

	Event	Time	Location	Standard	Remarks
8.	Execute Actions At a Halt	H+1	NB584271	AMTP Task p 6-38 1. Clears route w/ herringbone 2. Establish all-round security 3. Spot Report 4. Resume march 5. Report supply vehicles 6. Report CP1 when crossed	Inst/Ctrl places detection card indicating bridge collapsed, halting Plt. When Plt Ldr reports, directs bypass on road VIC 348. Detection card placed for M561 (GOER) and M559 (Fuel Truck) moving on road N of Wolf when in LOS.
9.	Actions on Contact/ Use Smoke	H+5	NB585257	AMTP Task p 6-35 1. Platoon drill p 3-25 (contact left) 2. Use on board smoke 3. Evasive movement (SAGGER drill) 4. Spot Report 5. Call fire using TRP 6. Continue movement	OPFOR Ctlr places detection card for SAGGER in woods at VIC NB607269 when lead vehicles passes NB585257. OPFOR engages with second round if vehicles remain exposed and IF ineffective.
10.	React to Indirect Fire	H+8	NB595255	AMTP Task p 6-57 1. Close hatch 2. Direct MOPP-4 3. Move right to bypass 4. Make NBC-1 Report 5. Report change in route	Fire Ctlr places massed arty smoke over sq km NE of CP2. Detection card indicating chemical alarm given to lead vehicle TC. Inst/Ctlr directs bypass to CP 3 on road VIC 393.
11.	Defend Against Air Attack	H+12	NB597241-NB594236	AMTP Task p 6-41 1. Platoon drill p 3-5 2. Pop Smoke 3. Fire SABOT 4. Spot Report 5. Continue movement	OPFOR Ctlr places HIND-D detection CARD vic 575225 when Plt passes woods VIC 393. Detection card for ditch VIC NB597235 when vehicle moves within 500 m.
12.	Recon an Obstacle	H+14	NB600238	AMTP Task p 6-19 1. Deploy and report 2. Check approach routes 3. Check for mines or ambush 4. Check for bypass or breach points 5. Move to bypass	Detection card for abatis VIC NB601237 when vehicle moves within 100 m or GD covers. Instr/ Ctlr directs recon and bypass when Plt Leader reports.

Event	Time	Location	Standard	Remarks
13. Actions on Contact	H+15	NB594236	AMTP Task p 6-35 1. Platoon drill p 3-25 (contact rear) 2. Suppress w/COAX 3. Use exhaust smoke 4. Speed up, move to cover or out of range 5. Spot Report	OPFOR Ctlr places detection card for RPG fire VIC abatis engaging vehicles in rear as they move away from woodline to bypass.
14. Cross CP3/ Perform Tactical Road March	H+17	NB599234	AMTP Task p 6-39 1. Report location VIC CP 3 2. Leave Co NET 3. Enter TMA NET, request permission and authenticate	Inst/Ctlr simulates TM A, requests authentication. Places detection card for M2 IFV at RP as contact element.
15. Cross RP	H+20	NB603224	1. Links up without stopping 2. Acknowledges hand/arm signals 3. Follows to AA w/o radio	Inst/Ctlr moves M2 to TM A area VIC 402 using signals for follow me, left turn, herring-bone.
16. After-Action Review	20-30 minutes	Tng Facility		Use procedures from FC 17-15-1, Ch. 2.

Tactical Road March (2)

Miniature Models

U.S. Force:

4 M1 Tanks
1 M561 Ammo Truck
1 M559 Fuel Tanker
1 M2 IFV

OPFOR:

1 AT-3C (Sagger C) MANPAC Team, 2 rounds
1 HIND-D with AT-3C, (Sagger C), 4 rounds
1 RPG-16 Team, 4 rounds

Detection Cards

1. Symbol (bridge destroyed). Stream banks soft and marshy.
2. Trucks moving on road, M561 (GOER) and M559 (Fuel Tanker).
3. Flash, smoke. Sagger missile approaching.
4. Chemical detection paper (M8) turned green.
5. Hovering attack helicopter. Hind-D or -E fires missile.
6. Symbol (Impassable ditch). Extends 300 m out from road.
7. Symbol (abatis) blocking road, not easily removable. Bypass through woods or across ditch not possible.
8. Flash, smoke. RPG-16 fire, personnel concealed.
9. APC behind building. Front of M2 exposed.

APPENDIX D-3
MOVEMENT TO CONTACT/HASTY ATTACK

1. Prerequisite Training

a. Platoon Leader and Platoon Sergeant should:

(1) Review STX E and STX F in FC 17-15-1, and standards for prerequisite tasks listed in Table D-3.

(2) Review FM 17-15 (Test) for further explanation of tasks as needed.

(3) Review Tank Company and Platoon SOPs to identify elements that may apply to STX E, STX F, and platoon tasks.

(4) Talk through possible STX situations and tasks to gain a common understanding of doctrine. Practice "what-if"drills.

2. Leader Training

a. Training exercises with the attached TRAX I scenario may be used along with platoon tasks and drill training to prepare for STX E, STX F, or similar ARTEP exercises. They may also provide substitute or sustainment training when field training is not possible. The Movement to Contact/Hasty Attack scenario should be attempted only after personnel have become familiar with the TRAX I method of combat gaming in the introductory Tactical Road March Scenarios.

b. The following leader tasks will be learned or reinforced by completion of the Movement to Contact/Hasty Attack exercise:

(1) Planning Combat Operations

(2) Provide Command and Control of a Unit

(3) Collective tasks from FC 17-15-1, and individual tasks from FM 17-19 (E/K) (Level 4) that support STX E and STX F.

c. Main teaching points:

(1) Receive OPORD. Check carefully the sequence of actions planned for other elements in the team to determine how they interact with the actions of your platoon. Request clarification and additional guidance if needed for planning. Understand the priorities established in the mission among goals of speed, security, attrition of enemy, position, and resource conservation.

(2) Reconnaissance. Conduct ground recon if possible to confirm position of SP, axis of advance, and CP within LOS. Find terrain features useful in reacting to potential threats.

Table D-3

Tasks in Movement to Contact/Hasty Attack

	TASK	MTP Page
1.	Perform Plt Ldr Reconnaissance	6-8
2.	Perform Tactical Planning	6-9
3.	Move in Column Formation	3-9
4.	Perform Contact Point Activities	6-36
5.	Passage of Lines (Forward)	5-35 (STXD)
6.	Execute Traveling Overwatch	5-44 (STXE)
7.	Move in Wedge Formation	3-18
8.	React to Indirect Fire	6-57
9.	Actions on Contact	6-35
10.	By Pass an OPFOR Position	6-50
11.	Perform Movement Security Using Smoke	
12.	Defend Against Air Attack	6-41
13.	Actions on Contact	6-35
14.	Execute Hasty Attack	6-18
15.	Perform Attack Using Fire and Movement	6-52
16.	Recover a Tank	6-23
17.	Execute Hasty Attack	6-18
18.	Reconnoiter an Obstacle	6-19
19.	Breach a Minefield/Obstacle	6-20/52
20.	Execute Hasty Attack	6-18
21.	Assault an Enemy Position	6-51
22.	Perform Actions at a Defile	6-64
23.	Perform Surveillance Activities	6-21
24.	Perform Platoon Fire Distribution and Control	6-25

(3) Tactical Planning. Backward plan to hit your SP and CPs on time. Anticipate enemy positions and threats, and your reaction to possible situations. The questions on p 3-9 of FM 17-15 (Test) are particularly helpful in movement and fire planning. Apply the factors of METT on p 2-6.

(4) Troop Leading. Even if a company WO has been issued, expand it to fill in specifics for your platoon and set timelines to ensure timely completion of preparations. Make sure Plt Sgt and TCs copy graphics correctly. In your OPORD, indicate alternate routes and reactions for different enemy positions and fires that may be encountered. Review any unfamiliar procedures that may be required (e.g., mines and obstacles).

(5) Move in Column Formation. Check intervals and all-round security as you move. Assign areas of observation to particular tanks when deviation from the SOP is needed.

(6) Contact Point Activities. Use recognition signals and exchange required information. Maintain listening silence if required.

(7) Execute Traveling Overwatch. When in the lead, check position of overwatching unit. Adjust speed and direction so your platoon does not outrun support or cutoff LOS from overwatching element.

(8) Move in Wedge Formation. Adjust your route to allow room for wingmen to follow in wedge without losing cover and concealment. When you must cross a ridge, increase speed to reduce exposure time.

(9) React to Indirect Fire. Move to evade impact area, keeping platoon together. Assume MOPP-4, monitor sensors, and request return to lower MOPP level if indications are negative. Anticipate fire adjustment in choosing route, acting to hinder adjustment if possible.

(10) Actions on Contact (RPG-16). Turn frontal armor to RPGs, use smoke, suppress with machineguns, and back away rapidly to get out of range. Call for indirect fire and be alert for coordinated threats on your rear.

(11) Bypass an OPFOR Position. When ordered to bypass, the overwatching platoon provides a base of fire whether moving or stationary. If a covered or concealed route is not available, follow a route that is out of range (if possible) and use smoke to provide cover for the following units.

(12) Move Using Smoke. If in range of antitank weapons when using exhaust smoke, leapfrog by sections with continuous movement. Alternately have one section take the lead, while the second section passes around on the side away from the threat and sprints briefly to take the lead. The lead vehicles will then be exposed only for short intervals.

(13) Defend Air Attack (HIND-D). When other elements of team come under attack, refrain from using smoke revealing your position. Move to covered positions (if available), and engage helicopters with SABOT until element under attack gains cover or threat destroyed.

(14) Execute Hasty Attack. Use brevity codes, cardinal directions, and drill commands to react to enemy presence or fire without delay. Use fire and movement to develop the situation. Report promptly and completely.

(15) Perform Fire and Movement. Suppress enemy with direct and indirect fire, and smoke. Request placement of direct fires from overwatching elements to protect your movement. Avoid soft ground and obstacles where possible. Approach enemy position rapidly on line with irregular changes in speed and direction.

(16) Recover a Tank. Continue mission and let supporting elements recover the tank when the situation allows. Use exhaust smoke to cover the position when under fire.

(17) Recon an Obstacle. Use covered routes to approach, with overwatching elements in covered positions. Smoke enemy positions and expose your vehicles to as few positions at one time as possible. Approach only as closely as needed to determine the location and extent of the obstacle, and possible breach or bypass routes. Back up into smoke and retreat to secure positions. Make a complete report and recommend a course of action.

(18) Breach a Minefield/Obstacle. Dozer work can fill craters or ditches more rapidly than minefields or abatis can be breached. Smoke enemy positions and area around point of breach. Secure the near side and flanks of breach and overwatch breaching operation. Move through to secure the far side. Mark the clear lane, reporting the location, trafficability, and completion of breach.

(19) Assault an Enemy Position. Attack by fire to create a weakness in the defense. Concentrate force at the decisive place and time to secure an entry into the position. Maneuver on flanks or rear to remove the defender's positional advantage and to engage and destroy the enemy's forces piecemeal.

(20) Actions at a Defile. Any feature restricting movement to a narrow passage can be treated as a defile. Designate a section to overwatch, move a section up to secure the flanks, and pass the first section through to secure the other end of the passage.

(21) Surveillance Activities. In a hasty overwatch position, assign sectors of observation and informal fire control measures. Use thermal sights to overcome smoke. Report signs of OPFOR activity.

(22) Platoon Fire Control. Use platoon fire command and control measures to rapidly orient fires and distribute them efficiently. Most dangerous targets have priority, but when they are approaching cover, the lead vehicles should be hit to prevent their escape. Move your vehicles to alternate positions if necessary to keep the OPFOR from breaking contact when he is at a disadvantage.

(23) Movement to Contact/Hasty Attack (General). Orders and plans will often change drastically in these missions as the situation develops. Try to anticipate possible changes in your planning and be prepared for any eventuality.

3. Standards

a. Primary performance standards are listed in the schedule for the mission scenario. Standards are based on those given in FC 17-15-1 for STXs and platoon tasks, taking into account the specific conditions created in the scenario situations, and the actions available on the gameboard. Additional task standards may be used based on local SOPs and the emphasis wanted in training.

b. Standards should not be treated as absolute inflexible requirements. There can be several alternative courses of action that are effective in a given tactical situation. The Instructor/Controller should judge whether the standards are appropriate under the circumstances.

4. After-Action Review (AAR)

a. The techniques presented in Chapter 2 of FC 17-15-1 should be used in conducting AARs.

b. The action can be interrupted at CP 1, after the air attack, before the breach, or at CP 4 to conduct AARs on the immediately preceding events. This procedure may be useful for relatively inexperienced personnel when a large number of items need discussion. For more experienced personnel, the scenario need not be interrupted and the AAR conducted after completing the entire exercise.

5. Follow-Up

a. After all platoons have completed one or more exercises, the company commander may wish to lead a group discussion with the platoon leaders and platoon sergeants. The platoons can compare notes, while the commander has the opportunity to resolve tactical disagreements and convey his tactical guidance and expectations. In this context, he may conduct "what-if" drills to emphasize main points.

b. Plan and conduct platoon training on specific tasks to correct training deficiencies that have been revealed. This training can be combined usefully with practice on crew and platoon drills.

c. Prepare and run additional exercises with this type of mission on other terrain boards until it is clear that Plt Ldr, Plt Sgt, and TCs can readily adapt to new terrain and easily overcome problems posed by new situations. The additional scenarios should be created to center around mission segments and tasks that have produced the most difficulty in previous exercises.

MOVEMENT TO CONTACT/HASTY ATTACK

You are the 3d Plt Ldr in an Armor Heavy Co/Team. Your team consists of a tank company HQ, two Armor platoons, a mech platoon, an engineer squad with CEV, and an AVLB. The company team is currently located at Malges but will move forward to conduct a forward passage of lines in 60 minutes. You are at NB577227 where the company Cdr has just issued his operations order for a movement to contact. The 1st Sgt has been dispatched to the assembly area to start the platoon preparations. The task force has been moving toward a suspected enemy air head north of Unterweisenborn. Hasty defensive preparations, mining, and obstacle construction have been detected south and east of Oberweisenborn. Infiltrators have caused considerable damage in the area and are conducting small scale ambushes and/or engagements to disguise the actual location of their air head. Normal air assaults are conducted with mechanized forces using BMDs. They also have close air support provided by attack helicopters and fighter-bombers. The enemy is capable of establishing local air superiority for short periods of time.

The commander's concept of the operation requires a rapid move along axis Jones to put the tank platoons in overwatching positions at CP 4 and CP 5, while the Mech Platoon moves through in a mounted attack to penetrate the woodline. If mines or obstacles are found near CP 3, and no bypass is found, the Engineers will be ordered to clear a path. When the Mech Platoon enters the woods, the attack will continue dismounted. 2nd Platoon will move into the forest road N of CP 5 to support the infantry in sweeping the objective. After these platoons reach the N end of High and consolidate their positions, 3rd should be prepared to pass E of HIGH to pursue, overwatched by 2nd Plt and the Mech Platoon. The Cdr plans to call prep fire on High when 3rd Plt reaches CP 2. The Cdr requested that you coordinate your plan of movement from CP 2 to CP 4 with the FIST.

OPORD #2

Task Organization: (Co/Tm Level)

1. Situation

a. Enemy Forces. (Enemy overlay - drawn on commander's map sheet.)

b. Friendly Forces.

(1) TF 1-14 is conducting a movement to contact.

(2) Co C is to our left flank conducting a movement to contact.

(3) TM B assists TM A passage of lines then moves to our right flank conducting a movement to contact.

(4) Co D is to our rear as a reserve.

(5) 3/74 FA is DS to our Bn/TF.

2. Mission

Tm A will conduct a movement to contact along axis Jones to seize OBJ High, be prepared to continue the attack on order.

3. Execution

a. Concept of the Operation. (Operation Overlay - drawn on commander's map sheet.)

(1) Maneuver. Tm A will conduct a passage of lines (forward) W/T Tm B at NB578225. Co/Tm A will cross the LD at 0630 hours. 3d Plt will use Passage Point 1. 2d Plt will use Passage Point 2. Mech Plt will use Passage Point 2. Co/Tm will conduct a movement to contact using traveling overwatch to seize OBJ High. 3d Plt will lead, followed by 2d Plt and Mech Plt.

(2) Fires. There will be a 10 minute artillery prep for OBJ High on call. Bn mortars will support TM A and TM B, priority of fires to TM A 3d Plt initially.

b. 3d Plt:

(1) Coordinate/conduct passage of lines at Passage Point 1.

(2) Move using the wedge after CP 1; you will be overwatched by 2d Plt.

(3) On order, support Mech Platoon attack from CP 4.

(4) Prepare to pass E of High, maintain contact and pursue.

c. 2d Plt.

(1) Coordinate/conduct passage of line at Passage Point 2.

(2) Follow 3d Plt and cover them with overwatching fires.

(3) On order, support Mech Platoon attack from CP 5, follow Mech Platoon to sweep and secure OBJ High.

(4) Consolidate on obj; prepare to overwatch 3rd Plt.

d. Mech Plt.

(1) Follow 2d Plt, on order attack mounted to reach OBJ High.

(2) Continue attack dismounted to sweep and secure OBJ High.

(3) Consolidate on obj: prepare to overwatch 3rd Plt.

e. Engineer Squad. Follow 3d Plt, on order clear mines or obstacles. Priority to mobility operations.

f. AVLB. With Eng Sqd, on order bridge streams or obstacles.

g. Coordinating Instructions.

(1) ADA status is weapons tight.

(2) Report passage and check points.

(3) MOPP Level II in effect.

(4) Report any enemy obstacles.

(5) Report reaching the objective.

4. Service Support

a. Bn/TF combat trains located at NB566203. Co Cbt trains located at NB 576219.

b. Evacuate vehicles to equipment rally point vicinity CP 1 then CP 2.

5. Command and Signal

a. CEOI KTV 600 A in effect. Listening silence in effect until crossing the LD/LC.

b. Cdr will move with 1st Plt initially. XO will move with Mech Plt.

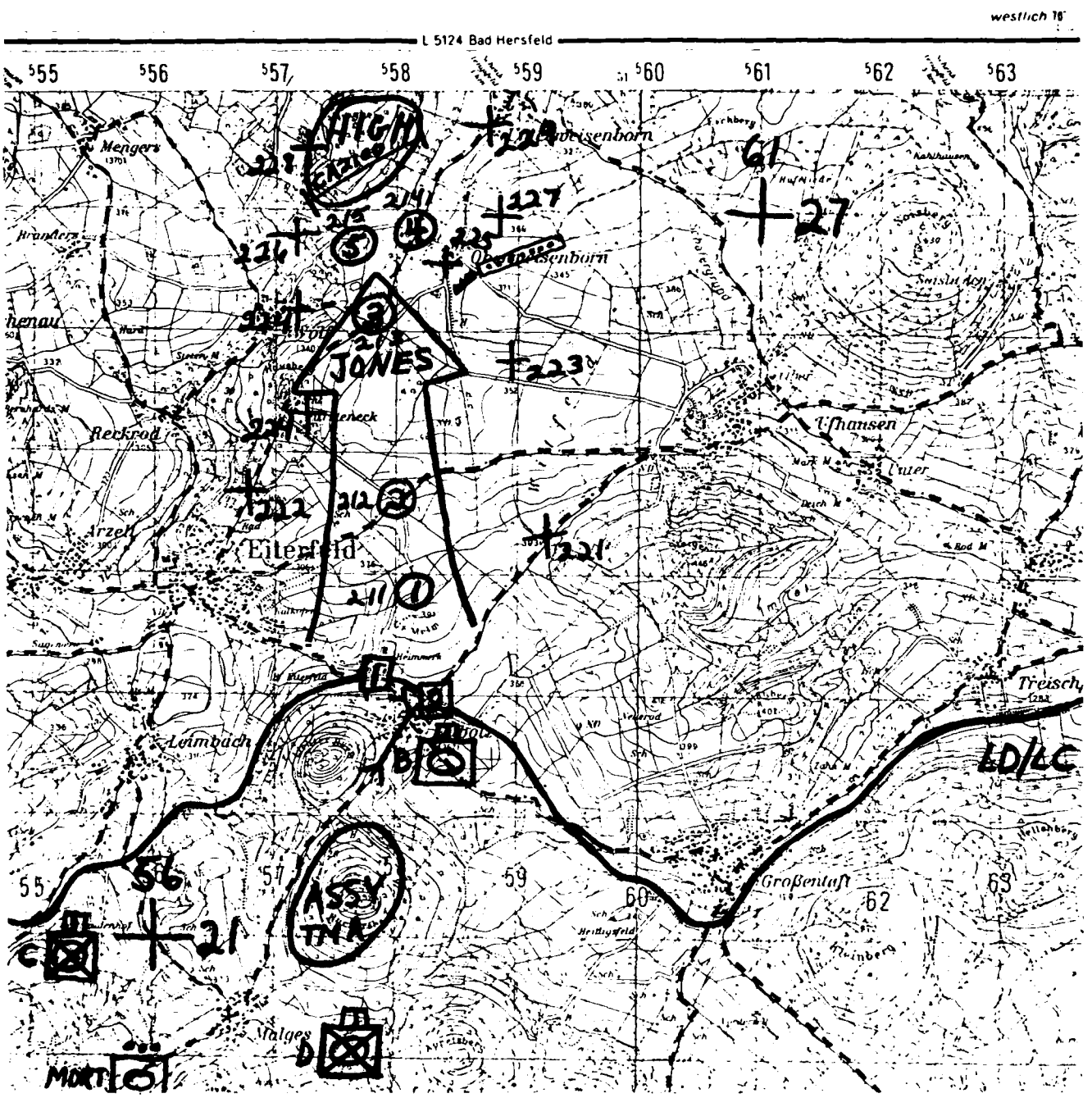

Figure D-3. Map overlay for Movement to Contact/Hasty Attack exercise.

Training and Evaluation Schedule
Movement to Contact/Hasty Attack

	Event	Time	Location	Standard	Remarks
1.	Receipt of OPORD	H-60	Tng Facility	Plt Ldr can brief back planned sequence of actions	Inst/Ctlr issues OPORD, CEOI, map/w overlay to Plt Ldr.
2.	Perform Plt Ldr Reconnaissance	H-55	Tng Facility	AMTP Task p 6-8 Conduct map/ground reconnaissance, and return to platoon	Dunn-Kempf screen used to restrict FOV to that from VIC LichterBerg. Plt Ldr cannot look at terrain board after leaving that position.
3.	Perform Tactical Planning	H-50	Tng Facility	AMTP Task p 6-9 1. Issue Warning Order 2. Plan OPORD 3. Coordinate movement plan with FIST 4. Issue OPORD 5. Insure overlay is copied correctly	FIST tells Plt Ldr that ammo stocks are getting low, so that fires must be limited to known OPFOR positions. Inst/Ctlr evaluates adequacy of WO, and accuracy and completeness of OPORD. Record OPORD on tape for later review.
4.	Move in Column Formation	H-5	Note: References below are to locations on map/ terrain board NB575220	Platoon Drill p 3-9 Maintain all-round security Maintain COMSEC	Inst/Ctlr evaluates interval, GD and FOV. Inst/Ctlr does not respond to radio contact until LD crossed.
5.	Perform Contact Point Activities	H-3	NB578224	AMTP Task p 6-36 1. Arrives on time 2. Uses recognition signals 3. Exchanges information	Inst/Ctlr simulates contact point in jeep, informs Plt Ldr TM B has no enemy contact, and 2d Plt (Tm B) will overwatch move to CP 2 from N edge of woods.
6.	Passage of Lines (Forward)	H	NB578232	STX D p 5-35 1. Pick up guide 2. Move through passage lane 3. Drop off guide 4. Cross LD on time	OPFOR Ctlr simulates guide, evaluates time LD crossed. OPFOR Ctlr moves CEV, AVLB, Cdrs, M1, FIST, and Tm A units following 3d Plt.
7.	Execute Traveling Overwatch/ Move in Wedge Formation	H+2	NB580238	Platoon Drill p 3-18 1. Move in combat column beyond LD on axis Jones 2. Maintains intervals and all-round security 3. Plt Ldr signals 4. Platoon deploys 5. Reports CP 1	Inst/Ctlr evaluates movement in compliance with OPORD.

8.	React to Indirect Fire/Left	H+3	NB580242	AMTP Task p 6-57 1. Button up and assume MOPP-4 2. Evasive movement/ move left 3. Spot Report 4. Report CP 2 passed	Fire Ctlr places arty in front of Plt at NB 581244 between CP 1 and CP 2. Inst/Ctrl directs move left to avoid impact area. Arty shifts to CP 2 next turn.
9.	Actions on Contact	H+7	NB575248	AMTP Task p 6-35 1. Plt drill p 3-25/35 (Action/Contact left) 2. Use on board smoke 3. Suppress with COAX 4. Spot Report 5. Request indirect fire	OPFOR Ctlr places detection card and engages from woodline VIC NB57325 with two RPG-16s. Inst/Ctlr denies request as prep fire begins on HIGH.
10.	Bypass an OPFOR Position/Move Using Smoke	H+8	NB578250	AMTP Task p 6-50 1. Repeats COAX fire 2. Uses exhaust smoke 3. Moves to bypass 4. Continue mission	Inst/Ctlr directs bypass using on-board smoke. OPFOR Ctlr re-engages from VIC NB573252 if vehicles exposed at a later point CEV and AVLB move to right of smoke.
11.	Defend Against Air Attack	H+10	NB578253	AMTP Task p 6-41 1. Execute air attack drill p 3-35 2. Move up to turret defilade 3. Fire on-board smoke grenades if engaged 4. Engage with SABOT 5. Spot Report	OPFOR Ctlr places detection cards for two HIND-Ds VIC NB605275, and fires missiles at CEV and AVLB VIC CP 2. Inst/ Ctlr gives alert "Air attack, two CHOPPERS NE." Vehicles move into smoke.
12.	Actions on Contact	H+12	NB578255	AMTP Task p 6-35 1. Contact right/front drill p 3-25 2. Engage Bldg with HEAT 3. Spot Report 4. Request suppressive smoke on Oberweisenborn	OPFOR Ctlr places detection card and engages with AT-4 Spigot from upper floor of bldg VIC NB584264. Inst/Ctlr directs Plt to cross stream and attack through Oberweisenborn to CP 4 to develop the situation.
13.	Execute Hasty Attack/ Perform Fire and Movement	H+14	NB580256	AMTP Task P 6-18 and 6-52 1. Move right 2. Initiates fire and movement 3. Actions left/front drill p 3-29 4. Engage bldg with HEAT, then BRDM 5. Spot Report	OPFOR Ctlr moves BRDM from behind bldg at NB585261 north toward Oberweisenborn as AT-4 Spigot launched from second bldg at near tank. Inst/Ctlr warns that ASU-85 platoon observed at CP 4, and indirect fire will be shifted to CP 4. Inst/Ctrl directs 2nd Plt to overwatch and provide a base of fire for attack by 3rd Plt.

14. Recover a Tank	H+15	NB583256	AMTP Task p 6-23 1. Continue fire and movement 2. Report vehicle 3. Conceal with exhaust smoke 4. Direct crossing on road	Card given to inform lead TC that his vehicle mired while crossing stream, and only passable crossing appears to be on road at NB583267. Suppressive fire begins on CP 4. AT-4 Spigot engages any exposed tanks. Inst/Ctrl directs Plt to proceed to recon possible obstacles S and E of Oberweisenborn, while Eng veh recovers tank. As Plt approaches, place brown cotton ball to show cratering explosion on road.
15. Execute Hasty Attack/ Recon Obstacles	H+16	NB585257	AMTP Task p 6-18 and 6-19 1. Deploy in wedge or line 2. Suppress RPGs with 50 cal, COAX 3. Report RPGs 4. Plt Ldr/Sgt conduct reconnaissance 5. Report location and extent of obstacles	Place detection cards showing crater on road, minefield between stream and wall, and minefield on E side. Lead vehicles receive fire from two RPG in bldgs VIC NB584266.
16. Breach a Minefield/ Obstacle	H+21	NB585263	AMTP Task 6-20/52 1. Use on-board smoke to conceal near side 2. Secure flanks of breach 3. Plt engages ASU-85s with HEAT 4. Requests AVLB placement if Eng veh killed 5. Moves plt through cleared lane to secure far side 6. Marks lane by expedient means (flags or other) 7. Spot Report, continues attack	Inst/Ctlr informs Plt Ldr that Eng Sqd tank moving to his VIC, orders Plt to assist breaching operation. Fire ctlr lifts fire from CP 4, puts smoke on Oberweisenborn. Eng Sqd begins to fill crater, is engaged by three ASU from CP 4. 2nd Plt fire destroys one ASU.
17. Execute Hasty Attack/Assault on Enemy Position	H+25/30	NB585265	AMTP Tasks p 6-18 & 6-5 1. Initiates fire and movement 2. Attacks ASU-85s until destroyed by fire 3. Conducts the assault 4. Action front drill p 3-29 5. Suppresses RPGs with 50 cal, COAX 6. Spot Report	Crater filled in 2 min, or bridge placed in 4 min. Fire Ctlr lifts smoke. Remaining ASU-85s engage from CP 4 as assault begins, along with RPGs from new bldgs.

18. Perform Actions at a Defile	H+27/32	NB584266	AMTP Task 6-64 1. Designate section to overwatch 2. Move to flanks of bridge 3. Engage infantry with COAX 4. Remaining section crosses bridge 5. Report reaching CP 4	Place detection card for infantry team under bridge setting charges. When CP 4 reached, Inst/Ctlr simulates orders to 2nd Plt to move to CP 5, and to Mech Plt to follow and begin assault when 2nd Plt set at CP 4.
19. Perform Surveillance Activities/ Perform Plt Fire Control	H+30/35	NB582268	AMTP Task p 6-21 and 6-25 1. Assigns position/ sectors of fire 2. Establishes control measures 3. Reports smoke and contact 4. Issues Plt fire command 5. Engages BMD with HEAT 6. Shifts fires/positions 7. Spot Report	Inst/Ctlr orders 3d Plt to overwatch HIGH from CP 4 and o/o cover sector from HIGH to VIC 369 while 2d Plt and Mech Plt assault OBJ HIGH. As assault begins, smoke appears on road, and OPFOR Ctlr moves three BMDs from HIGH to Unterweisenborn. After report, Inst/Ctlr orders 3d Plt to engage. End exercise when BMD destroyed or escape off board to N.
20. After-action Review	40-60 minutes	Tng Facility		Use procedures from FC 17-15-1, Ch 2.

Movement to Contact/Hasty Attack

Miniature Models

U.S. Force:

5 M1 Tanks (1 Plt, 1 Cdr)
M151 Jeep (or Hummer)
1 M113A1 FIST Vehicle
1 M728 CEV
1 AVLB
1 M1 Tank Platoon
1 M2 Mech Platoon

OPFOR:

4 RPG-16 Teams, 4 rounds ea.
2 HIND-E with AT-6 (Spiral), 4 rounds ea.
2 AT-4 (Spigot) MANPAC, 2 rounds ea.
2 BRDM Scouts with 7.62 mm MG
3 BMD IFV (2 Plt) with AT-4 (Spigot), 4 rounds ea.
3 ASU-85 Assault Guns

Detection cards

1. Flash, smoke. Two RPG-16s firing, personnel concealed.
2. Flash, smoke. Two hovering HIND-Es.
3. Flash, smoke. Antitank missile from upper floor of building.
4. Recon vehicle moving north. BRDM Scouts.
5. Flash, smoke. Anti-tank missile from building.
6. Stream bed soft. Vehicle bogged down.
7. Symbol (crater).
8. Symbol (minefield). Extends from stream to wall.
9. Symbol (minefield. Extends from wall to road.
10. Flash, smoke. RPG-16 fire from window.
11. Flash, smoke. RPG-16 fire from basement.
12. Flash, smoke. Three ASU-85 in tracked defilade.
13. OPFOR personnel under bridge. Setting demolitions.
14. BMD moving on road to east.

APPENDIX D-4
OCCUPY BATTLE POSITION/HASTY DEFENSE

1. Prerequisite Training

a. Platoon Leader and Platoon Sergeant should:

(1) Review STX B in FC 17-15-1, and standards for prerequisite tasks listed in Table D-4.

(2) Review FM 17-15 (Test) for further explanation of tasks as needed.

(3) Review Tank Company and Platoon SOPs to identify elements that may apply to STX D, and platoon tasks.

(4) Talk through possible STX situations and tasks to gain a common understanding of doctrine. Practice "what-if" drills.

2. Leader Training

a. Training exercises with the attached TRAX I scenario may be used along with platoon task and drill training to prepare for STX D or similar ARTEP exercises. They may also provide substitute or sustainment training when field training is not possible. The Occupy Battle Position/Hasty Defense scenario should be attempted only after personnel have become familiar with the TRAX I method of combat gaming in the introductory Tactical Road March Scenarios.

b. The following leader tasks will be learned or reinforced by completion of the Occupy Battle Position/Hasty Defense exercise:

(1) Planning Combat Operations

(2) Provide Command and Control of a Unit

(3) Collective tasks from FC 17-15-1, and individual tasks from FM 17-19 (E/K) (Level 4) that support STXA.

c. Main teaching points:

(1) Receive FRAGO. In the defense, check the sectors of fire assigned to other elements of the team to determine how they overlap and relate to your sector. Range limits for direct fire engagement, likely enemy movements, target priorities, and fire distribution and control in overlapping sectors are important to understanding your platoon's role. Request clarification and additional guidance as needed for planning. Understand the priorities established in the mission among goals of holding position, minimizing losses, reducing the enemy force, restricting enemy freedom of action, and conserving resources.

(2) Reconnaissance. In conducting map and ground reconnaissance, identify the enemy avenues of approach, routes into and out of your BP and hide positions, rally points, positions for OPs (day and night), support

routes and locations (resupply, medical, etc.). Analyze the terrain thoroughly to identify fields of fire and dead spaces, to select fighting positions, to relate positions to fire control measures, and anticipate enemy actions and counteractions. Recognize problems posed by terrain features and determine if additional TRP, adjustments to the BP, or other solutions (e.g., obstacles, mines) are needed.

Table D-4

Tasks in Occupy Battle Position/Hasty Defense

TASK	MTP Page
1. Perform Tactical Planning (Issue Warning Order)	6-9
2. Perform Plt Ldr Reconnaissance	6-8
3. Perform Tactical Planning (Issue FRAGO)	6-9
4. Perform Stand-to Activities	6-69
5. Occupy Battle Position	6-45
6. Perform Reconnaissance Within a Battle Position	6-67
7. Perform Tactical Planning (Issue OPORD)	6-9
8. Perform Surveillance Activities	6-21
9. Establish Perimeter Security	6-6
10. Establish an Observation Post	6-10
11. Perform Stand-To Activities	6-69
12. React to Indirect Fire	6-57
13. Provide Command and Control of a Platoon	6-9
14. Displace to Subsequent Battle Position	6-49
15. Perform Chemically Contaminated Area Crossing	6-2
16. Defend Against Air Attack	6-41
17. Perform Movement Security Using Smoke	6-68
18. Execute Actions at a Halt	6-38
19. Occupy Battle Position	6-45
20. Occupy Covered/Concealed Positions	6-56
21. Perform Platoon Fire Distribution and Control	6-25
22. Maintain Contact With the OPFOR	6-50
23. Occupy Battle Position	6-45
24. Perform Platoon Fire Distribution and Control	6-25
25. React to Indirect Fire	6-57
26. Perform Movement Security Using Smoke	6-68
27. Break Contact With the Enemy	6-23

(3) Tactical Planning. Based on the task priorities established by SOP, the situation and mission, and the time available, backward plan to be ready in position at the designated time. Plan and allocate personnel to complete tasks concurrently. Apply the factors of METT given on p 2-6 of FM 17-15 (Test) to plan the sequence of events in preparing and conducting the defense. Mentally rehearse the progression of events during the battle and the commands and reports you expect to give.

(4) Troop Leading. On receipt of a FRAGO, issue a WO to alert your platoons and get preparations started. Indicate mission and time, actions required, and the place and time further orders will be given (what, when, who, why, how). Delegate tasks and set timelines for actions required. In the defense, you may have to give a FRAGO to prepare the initial BP, then recon subsequent position, complete tactical planning, and give a detailed OPORD later. If time does not permit the TCs to see their subsequent positions, the OPORD must be particularly detailed and explicit. Ensure that the Plt Sgt and TCs copy the graphic control measures correctly before you depart on reconnaissance. Check the TCs range cards to make sure they execute the platoon fire plan correctly. If time permits, inspect each position and rehearse the TC's reactions to planned commands controlling platoon fires and movements. Ensure that the Plt Sgt understands the concept of the defensive operation and is prepared to take over command.

(5) Stand-to-Activities (Day). Ensure all equipment is stowed and personnel accounted for. Establish communications, start engines together, check status of vehicles, and give a SITREP before moving out.

(6) Occupy Battle Position (5A). The normal priority of tasks is to position tanks, establish security, camouflage, and establish wire communication (latter two not well simulated). Two hours to contact should allow preparation of range cards and platoon fireplan and coordination with adjacent units. Fireplan should include entrance/egress routes, rally point at start of MIKE, maximum ranges and dead spaces, Plt TRPs and list of tanks able to fire on each, hide and OP positions, and coordinating signals and/or commo with AT Platoon to control fires in the overlapping area. What solutions can be proposed to handle the dead spaces in the BP6A sector?

(7) Reconnaissance of a Battle Position. When TCs cannot accompany you to a subsequent battle position, take along a crew member from the Plt Sgts section so that he will be able to guide tanks in that section to their proper positions. Alternatively, you should mark positions and entrance points on the routes to the positions. If tanks are misplaced, your fireplan may not work as intended. If some positions offer cover, but not concealment, concealed hide positions should be found nearby. Try to choose routes that will not reveal the position through tracks or broken vegetation. If this is not possible, choose additional routes to be traveled over to leave deceptive markings. Consider possibilities for counterattack and pursuit of remnants of the enemy force. Locate temporary fighting positions along the route that offer the opportunity for sudden appearance, disappearance, and reappearance at unexpected locations.

(8) Surveillance Activity. In a defensive position behind forward positions, a weapons posture should be adopted suitable to the situation. Try to confirm the friend/foe status of possible targets. Report activity and control the Plt to avoid fire on friendly forces and premature exposure of the position.

(9) Perimeter Security/OPs. Preparation for night operations should start as soon as possible after occupation of the BP and whenever the platoon may remain on the position overnight. Plans for limited visibility conditions should be included in the OPORD if possible, or an additional FRAGO given later. The fireplan must be adjusted based on the capabilities of NODs

available. OPs must be thoroughly briefed on security and reporting procedures.

(10) Stand-to Activities (Night). In the defense, stand-to should occur BMNT. Stand-to in hide positions should be completed while OPs remain in position. Recall OPs when vehicles move to their fighting position.

(11) React to Indirect Fire. Button up, order MOPP-4, and move to evade impact area while continuing to cover assigned sector. Return to fighting positions as soon as possible. When chemical agents are detected, give alarm, and NBC-1 report.

(12) Provide Plt Command and Control. Request authentication of operating instructions. On receipt of FRAGO, be alert to elements that alter or expand previous orders and that require changes from the prior OPORD to the platoon. Give a FRAGO that is brief, accurate, clear, and establishes priorities and sequence when more than one task must be accomplished. Stress and confusion are reduced by getting the platoon moving on a definite course of action.

(13) Displace to Battle Position. Move rapidly on planned route. Transport wounded and arrange evacuation and resupply as needed on subsequent position. Minimize delay by unexpected obstacles or unplanned events. Use smoke as necessary to conceal movement.

(14) Cross Chemically Contaminated Area. Maintain MOPP level required by the danger. Determine the nature and persistency of the agent and the boundaries of the area to the extent possible with available equipment. Plan decontamination actions consistent with mission requirements. When contacting friendly elements, warn of possible persistent contamination.

(15) Defend Against Air Attack. Alert the platoon, give clock direction, and execute reaction drill. Use smoke to conceal vehicles, then resume the mission as rapidly as possible.

(16) Actions at a Halt/Evacuate Casualty. Identify contact as friendly element, warn of possible contamination, maintain security, minimize delay, and resume mission.

(17) Occupy Battle Position (6A). In a hasty occupation, move the tanks directly to turret down positions. Ensure the TCs are properly oriented to the TRPs, routes, and other important terrain features. When oriented, move to hull down fighting positions and begin to prepare range cards and Plt fireplan. Continue to improve the position with the time and resources available. Move back to hide positions as soon as possible. Prepare primary positions and submit fireplan in 30 minutes.

(18) Occupy Covered/Concealed Positions. To deter recognition of positions by OPFOR, avoid leaving signs along routes to positions. Enter from rear, use natural terrain patterns and camouflage material, and maintain concealment discipline. When preparations are complete, move back from fighting positions to more fully screened positions and turn off engines, leaving OPs to warn of enemy approach.

(19) Fire Distribution and Control. Ambush tactics may be used when adequate force is available to rapidly destroy the enemy force. Issue a Plt fire command, ensure fire is withheld until command of execution, and shift fires to avoid overkill. Remain in position to sustain a high rate of fire as long as enemy cannot return effective fire. Cease fire promptly when targets are destroyed. Shift one section to supplementary positions to regain LOS to targets blocked by destroyed vehicles or pinned in covered positions, while a section continues watch on escape routes.

(20) Maintain Contact with the OPFOR. When so ordered, maintain contact through fire and movement to pursue and complete destruction of the OPFOR. Although speed is paramount, avoid leaving signs that would subsequently reveal the fighting positions. If necessary, take up new positions when the Plt returns. Report destruction of targets or breaks in contact.

(21) Occupy Battle Position/Conduct Overwatch. Continue to avoid revealing signs in reoccupying a position. Positively identify withdrawing element when providing overwatch. Coordinate fireplans with unit established in an adjacent position.

(22) Platoon Fire Distribution and Control. Ensure that the platoon fire command is unambiguous in designating a target or group of targets for each tank. Use control measures and fire patterns to get as many flank shots as possible. Move after firing 1-2 rounds per target in the initial engagement, if there are a large number. If there are less than four targets, look for an extra command or support vehicle in your sector or double up on the most dangerous target. Direct engagement by platoon, section, or within section according to the needs of the situation, if not preplanned. When you see the OPFOR preparing to fire by platoon on one tank, order the TC to move while you continue to engage with the remainder of the platoon. Use all available assets, e.g. indirect fire obstacles, terrain, to isolate portions of the enemy force to be able to engage the enemy piecemeal with direct fire. Use .50 cal simultaneously on light armor, if main guns are targeted. Report contact and engagement, platoon movement and results of fire, and enemy activity. As the battle proceeds, adjust the platoon fire distribution to implement the commanders plan and orders. Be alert to possibilities of gaining advantage by counterattacking by fire from unplanned positions, or by counterattacking by fire and movement to create surprise.

(23) Movement Security Using Smoke. Planning for use of smoke should be an integral part of the defense plan. Direct use of on-board smoke as needed to cover firing positions when moving to alternate or supplementary positions. Ensure that exhaust smoke either covers the area entirely or is cut off soon enough to avoid revealing the tanks' locations in the new positions. If available, use smokepots in front of the positions in preference to on-board smoke. Be aware of wind strength and direction and the effects of wind in moving and dissipating the smoke. Use artillery smoke to screen movement away from the battle position when disengaging. Use on-board smoke only in emergencies, but try to avoid revealing the movement route when it is used.

(24) Break Contact with the Enemy. Make maximum use of terrain to shield the platoon's movement. Use artillery fire and smoke to slow the occupation of the battle position and pursuit. If overwatch is provided by

another unit, move rapidly and avoid engagement. If not overwatched, bounding by section may be required until contact is broken.

3. Standards

a. Primary performance standards are listed in the schedule for the mission scenario. Standards are based on those given in FC 17-15-1 for STXs and platoon tasks, taking into account the specific conditions created in the scenario situations and the actions available on the gameboard. Additional task standards may be used based on local SOPs and the emphasis wanted in training.

b. Standards should not be treated as absolute inflexible requirements. There can be several alternative courses of action that are effective in a given tactical situation. The Instructor/Controller should judge whether the standards are appropriate under the circumstances.

4. After-Action Review (AAR)

a. The techniques presented in Chapter 2 of FC 17-15-1 should be used in conducting AARs.

b. The action can be interrupted before the Stand-to Activities, after Occupation of Covered/Concealed Positions, or after the second Reaction to Indirect Fire, to conduct AARs on the immediately preceding events. This procedure may be useful for relatively inexperienced personnel when a large number of items need discussion. For more experienced personnel, the scenario need not be interrupted and the AAR conducted after completing the entire exercise.

5. Follow-up

a. After all platoons have completed one or more exercises, the company commander may wish to lead a group discussion with the platoon leaders and platoon sergeants. The platoons can compare notes, while the commander has the opportunity to resolve tactical disagreements and convey his tactical guidance and expectations. In this context, he may conduct what-if drills to emphasize main points.

b. Plan and conduct platoon training on specific tasks to correct training deficiencies that have been revealed and to encourage transfer of the gaming experience to field execution. This training can be combined usefully with practice on crew and platoon drills.

c. Prepare and run additional exercises with this type of mission on other terrain boards until it is clear that the Plt Ldr, Plt Sgt, and TCs readily adapt to new terrain and easily overcome problems posed by new situations. The additional scenarios should be created to center around mission segments and tasks that have produced the most difficulty in previous exercises.

OCCUPY BATTLE POSITION/HASTY DEFENSE

SITUATION:

The time is 1700 when you receive the FRAGO. The TM B Cdr delivers the overlay five minutes later. Your platoon (3rd) was resupplied and has been resting in hide positions on BP5A shown on the overlay. The Cdr explains that the enemy is attempting to outflank units to the North defending the autobahn. An attack on AA1 pushing through BP1 or 2 is expected to continue toward Unterweisenborn or Wolf. TM B will defend BP5, overwatching withdrawal of Co C to BP6, and Co D to BP8 north of BP5 if required. The TM also has a new O/O mission to defend BP6, backing up BP3 and 4 if AA2 is used. On order TANGO, the AT Plt will overwatch while the remainder of TM B moves to BP6 through Wolf on route MIKE. If the attack on AA2 reaches the rear of BP1 or continues north, TM B will shift fields of fire and move the AT Plt on order LIMA. As the attack continues further north, on order ECHO TM B will move on route DELTA to BP5 in successive bounds, with 3rd Plt moving first, AT Plt second, and 1st Plt last. The Cdr will be with the AT platoon, and Exec with 1st Plt. Fire Support will be under FIST control. The TM has last priority in Bn until engaged. The TM B trains are at NB575275, but resupply is limited to diesel until tomorrow morning (0500). Current CEOI remains in effect

The Cdr then continues, "I've seen BP6 and your area 6A has some problems. Field of fire from positions in the woods are restricted to the south, so you will have to use positions just N or Eiterfeld to cover orientation TANGO. The engineers put in some tank pits earlier in the area, and they may fit into the plan. I want you to recon the area to find good primary positions for orientation TANGO, and secondary positions covering orientation LIMA. Alternate positions are needed in both cases, since I want to present an agile, shifting defense. I anticipate possible orders to counterattack to help maintain BP3 or BP4, so you should also look over possible movement routes. I have ordered up a jeep to take you down to BP6, and it should pick you up in about 15 min. Be prepared to return immediately if things heat up on AA1."

CEOI EXTRACT: (Use Local CEOI)

FRAGOS ISSUED BY INSTRUCTOR/CONTROLLER

FRAGO No.1:

_____, this is _____. Lead elements of a motorized rifle brigade probing AA1 have been repulsed, NB665225. Main body approaching on AA1, attack on Bn positions expected in two hours. TM B prepares to defend BP from NB576271 to NB582283 with 1st Plt in north, 3rd Plt in south, and AT Plt in center. Overlay enroute your location. REDCON-2 and MOPP-3 now. I authenticate _____.

FRAGO No. 2:

"_____ present 5A, condition YELLOW, WEAPONS TIGHT.

FRAGO No. 3:

_____ this is _____. REDCON-1, condition RED, WEAPONS FREE.

FRAGO No. 4

_____ this _____ REDCON-3, condition WHITE, WEAPONS HOLD. Class IV delivered at 1800, stand-to at 0500.

FRAGO No. 5

"_____ this is _____. BLITZ TANGO, lead SPRINT on MIKE, WEAPONS TIGHT, report when established."

EXECUTION MATRIX
(mount copy on 3" x 5" card)

	1st	AT	3rd
o/o ECHO DEF	5C 609 -632	5B 610 -630	5A 611 -632
o/o TANGO DEF	6C 608 -633	5A 610 -634	6A 634 -635
o/o LIMA DEF	6C 607 -634	6B 607 -610	6A 633 -634

TM A	4 / 603
TM B	5 / 607
Co C	1 / 601
Co D	2 / 601
AT(-)	3 / 601

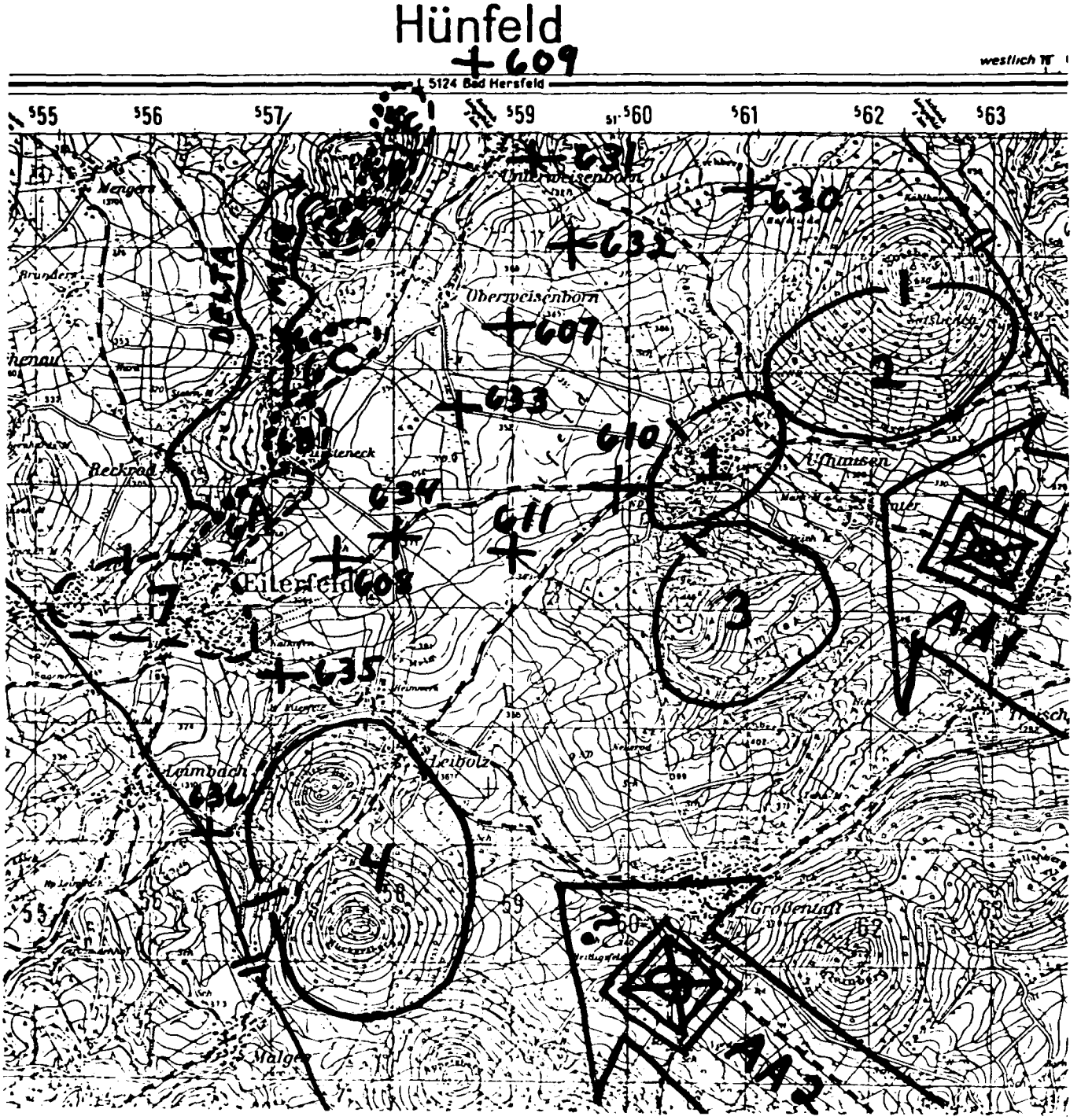

Figure D-4. Map overlay for Occupy Battle Position/Hasty Defense exercise.

Training and Evaluation Schedule
Occupy Battle Position/Hasty Defense

Event	Time	Location	Standard	Remarks
1. Performs Tactical Planning/Issue Warning Order	H-120	Tng Facility	AMTP Task p 6-9 1. Plt Ldr checks map locations 2. Oral order will include a. Directs Stand-to b. Directs MOPP-3 c. Mission, location, time	Dunn-Kempf screen at 27 gridline. Inst/Ctlr directs Plt/Sgt to place vehicles in hide position on BP5A and two personnel miniatures representing OPs. Inst/Ctlr issues FRAGO No. 1 to Plt Ldr, and records warning order on tape for review.
2. Perform Tactical Planning/Plt Ldr Reconnaissance/ Issue FRAGO	H-115	Tng Facility	1. Plt Ldr conducts map reconnaissance 2. Plt Ldr prepares and issues FRAGO for occupation of BP5A 3. Oral order briefly outlines a. Situation b. Mission c. Execution (especially control measures) d. Service Support e. Command and Signal 4. Plt Ldr insures overlay is copied correctly	Inst/Ctlr issues CEOI extract, copy of Cdr's orders, and overlay to Plt Ldr. Inst/Ctlr evaluates FRAGO for accuracy and completeness of information, and records FRAGO on tape for review. Dunn-Kempf screen remains to limit LOS from BP5 until Event 4.
3. Perform Stand-to Activities	H-100	Note: References below are to locations on map and terrain board NB576272	AMTP Task p 6-69 1. Plt Ldr delegates occupation and preparation of BP5A to Plt Sgt 2. Establishes Plt communication 3. Enters TM B net, authenticates 4. Start engines simultaneously 5. Makes SITREP by SOP	OPFOR Ctlr moves jeep and arrives to pick-up Plt Ldr, when Plt ready to move. Inst/Ctlr starts game turns at same time.

	Event	Time	Location	Standard	Remarks
4.	Occupy Battle Position	H-90	Note: References below are to locations on map and terrain board NB576271-NB579274	AMTP Task p 6-45 1. Plt Sgt selects positions and directs move into BP5A 2. Plt Sgt directs preparation of range cards for primary and secondary firing positions 3. Plt Sgt prepares Plt fire plan 4. Plt Sgt coordinates overlapping fires and withdrawal routes with AT Plt	Events 4 and 5 occur simultaneously. Inst/Ctlr represents AT Plt Ldr. Inst/Ctlr continues game turns during Plt Ldr movement to and from BP6A.
5.	Perform Reconnaissance within a Battle Position	H-90	NB566241-NB573252	AMTP Task p 6-67 1. Plt Ldr directs movement of jeep to/from BP6A 2. Conducts ground reconnaissance 3. Selects fighting positions 4. Selects routes to/from positions 5. Selects OP positions 6. Positions and routes have cover/concealment 7. Prepares sketch of BP6A 8. Returns o/o to BP5A 9. Notifies Plt of route to position	OPFOR Ctlr moves jeep under direction of Plt Ldr. Plt Ldr uses M60 MG miniature to represent movement on foot away from location of jeep. Plt Ldr is allowed to check LOS only from his location. Inst/Ctlr issues FRAGO No. 2 to Plt Ldr at H-50. (Prepared position markers from BLOCKBUSTER are placed at NB566241/243/245 during setup).
6.	Perform Tactical Planning/ Issue OPORD	H-40	NB576272	AMTP Task p 6-9 1. Plt Ldr checks BP5A fireplan 2. Plt Ldr prepares and issues OPORD 3. Oral order provides details on a. Concept of operation b. Movement to BP6A c. Fighting Positions in BP6A d. Routes to/from positions e. Fire control measures f. Withdrawal routes to BP5A g. OP Positons	Inst/Ctlr stops game turns when Plt Ldr reaches BP5A. Inst/Ctlr evaluates OPORD for accuracy and completeness of information and records OPORD on tape for review.

	Event	Time	Location	Standard	Remarks
7.	Perform Surveillance Activities	H-30	NB576271-NB579274	AMPT Task 6-21 1. Plt Ldr passes orders to Plt 2. TCs identify vehicles, report activity in sectors 3. Plt Ldr reports friendly vehicles 4. Plt Ldr reports OPFOR west of BP, requests guidance 5. Plt Ldr reports OPFOR destruction	Inst/Ctlr issues FRAGO No. 3 to Plt Ldr, starts game turn. Fire Ctlr shows artillery fire and smoke at Ufhausesen. OPFOR Ctlr moves friendly vehicles at intervals out of Ufhausesen to W or NW, e.g., ammo and fuel trucks to Wolf, M113 ambulance to Unterweisenborn, M88 towing M2 to Eiterfeld. OPFOR Ctlr moves BMP platoon on road VIC NB602244. Inst/Ctlr orders Plt to hold fire. BMPs destroyed by LAW fire from woods.
8.	Establish Perimeter Security/ Establish OPs	H-15	NB576271-NB579274	AMPT Tasks 6-6 and 6-10 1. Plt Ldr orders stand down to REDCON-3, establishment of perimeter security 2. TCs move to night positions and prepare range cards 3. Plt Ldr prepares NOD plan 4. Plt Ldr plans OP positions, security and reporting procedures, and withdrawal plan 5. Instructions issued for establishing/operating OPs 6. Instructions issued for feeding, sleep, resupply 7. OPS established	Inst/Ctlr issues FRAGO No. 4, halts game turns when OPs in place. If Plt Ldr requests permission for move to BP6 in order to prepare the position, Inst/Ctlr denys request, indicating he has orders to maintain continuous security at BP5. Realism may be increased by using a variable resistor with room lights, lowering the light level gradually to represent sunset and twilight.
9.	Perform Stand-to Activities	H	NB576271-NB579274	AMTP Task 6-69 1. Establishes Plt communication, calls in OPs after EENT 2. Enters TM B net, authenticates 3. Starts engines simultaneously 4. Makes SITREP by SOP at 0500	Provide players with a 15 min break, representing passage of night. After break, raise light level gradually to represent EENT and sunrise.

Event	Time	Location	Standard	Remarks
10. React to Indirect Fires	H+5	NB576271-NB579274	AMTP Task p 6-2 and 6-57 1. Button up and direct MOPP-4 2. Submit Shel rep and NBC-1 report 3. Move out of impact area at front of BP5A	Fire Ctlr places indirect fire VIC582275 and then VIC 576270. Inst/Ctlr reports (AT Plt) smoke in first burst, hands Plt Ldr green M8 detection paper (simulated). Smoke shown at both locations, and drifts to west (wind 10 MPH from east).
11. Provide Plt Command and Control	H+6	NB575272 NB578274	AMTP Task p 6-9 1. Requests authentication 2. Issues FRAGO to Plt 3. Initiates movement to rally point	Inst/Ctlr issues FRAGO No. 5, and authenticates, if requested. Inst/cont gives Plt Sgt card indicating chemical casualty (driver) at the same time.
12. Displace to Battle Position	H+7	NB576274	AMTP Task p 6-49 1. Spot Report casualty 2. Lead in column formation 3. Orders movement at top speed	Inst/Ctlr orders Plt Ldr to continue move, leaving casualty with decontamination team at rear of Wolf. Fire Ctlr places massive arty on BP3, continuing to Event 17.
13. Cross Chemical Contaminated Area	H+9	NB573272	AMTP Task p 6-2 1. Remains in MOPP-4 2. Request bypass route 3. Determine extent of of area 4. Submit NBC-1 report	Smoke drifts over route MIKE. Inst/Ctlr denies bypass. Cards given to TC of tank with monitoring equipment showing readings before, during, and after crossing.
14. Defend Against Air Attack Use Smoke	H+12	NB572267	AMTP Task p 6-41 and 6-68 1. Alert Plt, give clock direction 2. Fire smoke grenades 3. Platoon drill p 3-5 4. Makes Spot Repot 5. Continues movement	OPFOR Ctlr places detection card VIC NB512245, indicating fixed wing acft (represent by acft ID card). Deliver four 500 lb bombs on route MIKE at point nearest platoon.
15. Execute Actions at a Halt/Evacuate Casualty	H+15	NB568263	AMTP Task p 6-38 1. Identify contact and warn of contamination 2. Report contact and order halt 3. Platoon Drill p 3-12/15 4. Transfer casualty 5. Resume movement 6. Makes spot report	Inst/Ctlr simulates decon team, with M113, uses challenge/password from CEOI. Evacuation requires 1 min halt.

Event	Time	Location	Standard	Remarks
16. Occupy Battle Position	H+20	NB566241-BN568247	AMPT Task p 6-45 1. Plt moves to positions assigned in OPORD 2. TCs prepare sketch range cards for TANGO positions 3. Plt Ldr requests copys of range cards, checks positions and control measures 4. Prepares Plt fireplan	Fire Ctlr shifts arty to BP1 and 2. Inst/Ctlr informs Plt Ldr that BP3 has been occupied by OPFOR MR elements, attack on AA2 now expected in 30 min by MR Rgmt with recon and advance guard elements leading.
17. Occupy Covered/ Concealed Positions	H+30	NB568247-NB573252	AMTP Task 6-56 1. Plt moves to positions assigned in OPORD from rear 2. TCs prepare sketch range cards for LIMA positions 3. Plt Ldr obtains copies of range cards, checks positions and control measures 4. Plt takes positions concealed by woods 5. Plt Ldr prepares fire-plan, sends copy to Cdr by runner.	Inst/Ctlr directs move to LIMA positions to prepare ambush for lead elements moving N on AA2. Orders Plt to be in concealed positions in 15 min, contact expected in 20 min, open fire on order. Request copy of Plt fire plans ASAP, by runner at NB570251 (Trails in woods on BP5A marked at setup by masking tape).
18. Perform Platoon Fire Distribution and Control	H+50	NB568247-NB573252	AMTP Task 6-25 1. Plt Ldr issues Plt fire command with appropriate elements (depth) 2. Plt commences fire on the command of execution 3. Plt Ldr shifts fires as needed 4. Plt avoids target over-kill, ceases fire when tanks killed 5. Spot report-effects of fire	OPFOR Ctlr places detection cards for PT-76 tank plt in center and pairs of BRDM-2 scout cars to E and W of tanks, on ridge between VIC 391 and VIC 393. Inst/Ctlr orders 3rd Plt to fire on tanks, 1st Plt on BRDMs as vehicles pass TRP 634. BRDMs on E destroyed, those on W retreat over ridge to S.

Event	Time	Location	Standard	Remarks
19. Maintain Contact with the OPFOR/ Move in Combat Wedge	H+52	NB568247-NB573252	AMTP Task 6-50 1. Plt Ldr orders move to regain/maintain contact 2. Platoon Drill p 3-18 3. Directs fire and movement to maintain contact until targets destroyed 4. Reports target destruction or break in contact	Inst/Ctlr orders 3rd Plt to move S, stay to W of 634, maintaining contact until BRDMs are destroyed. After BRDM destroyed or Plt moves past TRP 608, Inst/Ctlr orders Plt to break contact and return to BP6A with orientation TANGO.
20. Occupy Battle Position/ Conduct Overwatch	H+55	NB566241-NB568247	AMTP Task 6-45 1. Plt moves on roads to TANGO positions, occupies from rear 2. TCs occupy original positions with same range cards 3. Plt Ldr orders weapons tight, overwatches move from BP4. 4. Identifies bounding element as friendly 5. Orders weapons free when M2s past, resumes orientation 6. Requests Cdr to establish coordination point or communication with TMA 7. Coordinate priorities and sectors of fire with M2 Plt Ldr 8. Informs Plt of any changes in plan when aided by M2 Plt	Inst/Ctlr informs Plt Ldr contact with advance guard expected in 5 min, and TMA is withdrawing to BP7 under heavy pressure from S, directs overwatch of withdrawal in sector. OPFOR Ctlr moves M2 Plt from BP4 through rail underpass into Elterfeld. Inst/Ctlr calls (as M2 Plt Ldr) to indicate he has a secondary sector between TRP 608-635, is low on missiles, and can only engage light armor if not busy in his primary position.
21. Perform Platoon Fire Distribution	H+60	NB566241-BN568247	AMTP Task p 6-25 1. Plt Ldr issues Plt fire command with appropriate elements (crossfire) 2. Reports contact and engagement 3. Plt fires smoke grenades, switches to TIS 4. Requests indirect fire on BMPs 5. Engages BMP's on BP4 with 50 cal	OPFOR Ctlr deploys reinforced company (10 T-62s, 3 BMPs) on line from Leiboltz to VIC 393, moves up to ridge line to attack by fire, then advances on BP6A at top speed, halting on alternate turns to fire by platoon. Inst/Ctlr orders 3rd Plt to engage Plt on right. BMP Plt remains in defilade on ridge to launch missiles. BMP Plt on BP4 also also appears and fires missiles. Fire Ctlr puts hvy arty on Elterfeld, adjust to N on next

Event	Time	Location	Standard	Remarks
			6. Plt moves to secondary position 7. Plt Ldr adjusts indirect fire 8. Makes Spot Reports 9. Shifts fires to engage most dangerous threat, avoid overkill	turn. Two OPFOR tanks on east and one in center destroyed by fire from 1st Plt and AT Plt.
22. React to Indirect Fire/Uses Smoke	H+63	NB566241-NB568247	AMPT Task p 6-57 and 6-68 1. Plt moves to supplementry firing positions to evade impact area and observation 2. Reports indirect fire 3. Uses onboard smoke as needed to cover move 4. Reports move, Plt status 5. Continues to engage remaining targets 6. Shifts indirect fire to BRDM-2s 7. Reports enemy strength and movement	Indirect fire falls on Plt position, and dust cloud remains to obscure targets. Surviving enemy targets seek cover in Eiterfeld. ASU-85 move W of BP4 to Eiterfeld. Three BRDM-2s fire missles from top of Lichter Berg, when U.S. Plt moves in LOS.
23. Break Contact With the Enemy/ Use Smoke	H+65	NB564245-NB568247	AMPT Taks p 6-23 and 6-68 1. Plt Ldr issues FRAGO 2. Establishes rally point 3. Withdraws from BP6A along route DELTA 4. Uses onboard smoke to cover withdrawal 5. Calls smoke mission to screen route DELTA from BP7 6. Engages OPFOR elements by section as required to slow pursuit and maintain movement security.	Inst/Ctlr reports enemy breaking through BP7, orders Plt to break contact return to ECHO on route DELTA, be aware of danger of fire from S. OPFOR Ctlr pursues with surviving tanks and BMP. If three or less T-62s or BMPs remain, ASU-85s also emerge from Eiterfeld to pursue. End exercise when all enemy destroyed or Plt reaches Wolf.

Occupy Battle Position/Hasty Defense

Miniature Models

U.S. Force:

5 M1 Tanks (1 Plt, 1 Cdr)
1 M151A1 Jeep (or Hummer)
M60 MG Team
1 ITV Platoon
1 M1 Tank Platoon
1 M113 Ambulance
1 M88 with M2
1 M559 Fuel Tanker
1 M561 Ammo Truck
3 M2 IFV

OPFOR:

9 BMP (3 Plt) with AT3C (Sagger C), 4 rounds ea.
10 T-62 Tanks (3 Plt, 1 Cdr)
3 PT-76 Tanks (1 Plt)
4 BRDM-2 Scouts (2 Sec) with 14.5 mm MG
3 BRDM-2 (1 Plt) with AT-5 (Spandrel), 15 rounds ea.
3 ASU-85 Assault Guns

Detection Cards

1. Trucks moving on road. (M561 (GOER) and M559 Fuel Tanker).
2. APC moving fast on road. M113 ambulance.
3. Vehicle towing APC on road. M88 with M2 in tow.
4. 3 BMPs moving north on road.
5. Chemical detection paper (M8) turned green.
6. Chemical alarm gives negative indication.
7. Chemical alarm gives positive indication.
8. Chemical alarm gives negative indication.
9. Fixed wing aircraft approaching.
   Two OPFOR fighters at high speed, low level.
10. APC (M113) with personnel in protective suits.
11. Soldier in tanker suit in woods by road.
12. Three light tanks. Moving PT-76s.
13. Two recon vehicles. Moving BRDM-2 Scouts.
14. Two recon vehicles. Moving BRDM-2 Scouts.
15. Three T-62 Tanks in defilade.
16. Four T-62 Tanks in defilade.
17. Three T-62 Tanks in defilade.
18. Three BMPs in hull defilade.
19. Flash, smoke. Anti-Tank missiles approaching. Three BMPs in woodline.
20. Three moving ASU-85s.
21. Flash, smoke, Anti-Tank missiles approaching. Three BRDM-2 at edge of clearing.
22. Three ASU-85 moving between buildings.

APPENDIX E
MISSION-TASK RELATIONSHIPS IN TRAX I EXERCISES AND STXs

Table E-1

TACTICAL ROAD MARCH (1)

PLATOON DRILLS	TRAX	STX A *	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Column Formation	X	X							
Coil Formation	X	X							
Herringbone Formation	X	X							
Wedge Formation						X	X		X
Line Formation							X		X
Action Left (Right, Front, Rear)	X					X	X		
Move Left (Right, Rear)						X	X		
Conduct Bounding Overwatch						X	X		X
React to Air Attack	X	X	X	X	X	X	X		X
PLATOON TASK									
Perform a Nuclear Contaminated Area Crossing			X					X	X
Perform a Chemically Contaminated Area Crossing			X					X	X
Perform Chemical Agent Early Warning Using Chemical Agent Alarm			X					X	X
Establish Security for an EDS/PDS									
Perform Assembly Area Activities									
Establish Perimeter Security	X							X	
Defend an Assembly Area									
Perform Refueling Activities		X	X					X	X
Perform Rearming Activities		X	X					X	X
Perform Leader a Reconnaissance	X		X	X	X			X	X

PLATOON TASKS	TRAX	STX A*	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Provide Command and Control of a Unit	X								
Perform Tactical Planning	X	X				X		X	X
Operate an Observation Post			X					X	
Establish an Observation Post	X		X					X	
Assist Rearward Passage of Lines				X	X				
Provide Reaction Force to Insurgent Attack									
Perform a Screen of a Stationary Force									
Perform a Screen of a Moving Force									
Execute a Hasty Attack							X		
Reconnoiter an Obstacle				X	X	X	X		X
Breach a Minefield									
Perform Surveillance (Visual and Electronic) Activities			X	X	X	X	X	X	X
Move in a Built Up Area									
Establish a Platoon Hot Loop			X	X				X	
Recover a Tank by Similar Vehicle	X		X	X	X	X	X		X
Break Contact from the Enemy			X	X	X				
Perform Platoon Fire Distribution and Control			X	X	X		X		X
Engage Targets Using the Two Tank Method									
Emplace a Hasty Protective Minefield			X						
Occupy a Battle Position in a Built Up Area									
Emplace a Phony Minefield			X						

Table E-1

TACTICAL ROAD MARCH (1)

PLATOON TASKS	TRAX	STX A *	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Execute Actions on Contact	X	X			X	X	X		X
Perform Contact Point Activities			X	X	X				
Execute Actions at a Halt	X	X							
Perform a Tactical Roadmarch	X	X							
Execute Traveling Overwatch						X			X
Execute Traveling									
Defend Against an Air Attack (Battle Drill)	X	X	X	X	X	X	X		X
Conduct Rehearsals								X	X
Perform Consolidation and Reorganization Activities			X			X	X		X
Improve Battle Positions			X						
Prepare Subsequent Battle Positions			X						
Occupy Battle Positions			X						
Displace to Subsequent Battle Position			X						
Maintain Contact with the Enemy			X				X		X
Bypass an Enemy Position						X	X		X
Assault an Enemy Position							X		X
Breach an Obstacle						X			X
Perform Attack Using Fire and Movement									
Establish All-Round Movement Security	X	X							
Take Actions to Process POWs			X			X	X		X

PLATOON TASKS	TRAX	STX A*	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Process Captured Material			X			X	X		X
Camouflage Vehicles and Equipment			X	X	X	X	X	X	X
Occupy Covered and Concealed Positions			X	X				X	X
Process Captured Enemy Documents									
React to Indirect Fire	X	X	X	X	X	X	X		X
Prepare for a Friendly Nuclear Strike									
Remove Hasty Protective Minefield									
Perform Rupture Force Activities									
Perform Reserve Force Activities									
Perform Rear Guard Activities									
Perform Breaching Force Activities									
Perform Assault Force Activities									
Perform Support Force Activities									
Perform Landing Zone Activities					X				
Perform Actions at a Defile									
Perform Aerial Resupply Activities									
Take Countersurveillance Measures		X	X			X		X	X
Perform Obstacle Construction									
Perform Reconnaissance within a Battle Position						X			X
Perform Movement Security Using Smoke Systems	X		X	X	X	X	X		X
Perform Stand-TO Activities	X								

Table E-2

TACTICAL ROAD MARCH (2)

PLATOON DRILLS	TRAX	STX A*	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Column Formation	X	X							
Coil Formation	X	X							
Herringbone Formation	X	X							
Wedge Formation						X	X		X
Line Formation							X		X
Action Left (Right, Front, Rear)	X					X	X		
Move Left (Right, Rear)						X	X		
Conduct Bounding Overwatch						X	X		X
React to Air Attack	X	X	X	X	X	X	X		X
PLATOON TASK									
Perform a Nuclear Contaminated Area Crossing			X					X	X
Perform a Chemically Contaminated Area Crossing			X					X	X
Perform Chemical Agent Early Warning Using Chemical Agent Alarm			X					X	X
Establish Security for an EOS/POS									
Perform Assembly Area Activities									
Establish Perimeter Security	X							X	
Defend an Assembly Area									
Perform Refueling Activities		X	X					X	X
Perform Rearming Activities		X	X					X	X
Perform Leader's Reconnaissance	X		X	X	X			X	X

PLATOON TASKS	TRAX	STX A*	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Provide Command and Control of a Unit	X								
Perform Tactical Planning	X	X		/		X		X	X
Operate an Observation Post			X					X	
Establish an Observation Post	X		X					X	
Assist Rearward Passage of Lines				X	X				
Provide Reaction Force to Insurgent Attack									
Perform a Screen of a Stationary Force									
Perform a Screen of a Moving Force									
Execute a Hasty Attack							X		
Reconnoiter an Obstacle	X			X	X	X	X		X
Breach a Minefield									
Perform Surveillance (Visual and Electronic) Activities			X	X	X	X	X	X	X
Move in a Built Up Area									
Establish a Platoon Hot Loop			X	X				X	
Recover a Tank by Similar Vehicle			X	X	X	X	X		X
Break Contact from the Enemy			X	X	X				
Perform Platoon Fire Distribution and Control			X	X	X		X		X
Engage Targets Using the Two Tank Method									
Emplace a Hasty Protective Minefield			X						
Occupy a Battle Position in a Built Up Area									
Emplace a Phony Minefield			X						

Table E-2

TACTICAL ROAD MARCH (2)

PLATOON TASKS	TRAX	STX A *	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Execute Actions on Contact	X	X			X	X	X		X
Perform Contact Point Activities			X	X	X				
Execute Actions at a Halt	X	X							
Perform a Tactical Roadmarch	X	X							
Execute Traveling Overwatch						X			X
Execute Traveling									
Defend Against an Air Attack (Battle Drill)	X	X	X	X	X	X	X		X
Conduct Rehearsals								X	X
Perform Consolidation and Reorganization Activities			X			X	X		X
Improve Battle Positions			X						
Prepare Subsequent Battle Positions			X						
Occupy Battle Positions			X						
Displace to Subsequent Battle Position			X						
Maintain Contact with the Enemy			X				X		X
Bypass an Enemy Position						X	X		X
Assault an Enemy Position							X		X
Breach an Obstacle						X			X
Perform Attack Using Fire and Movement									
Establish All-Round Movement Security	X	X							
Take Actions to Process POWs			X			X	X		X

PLATOON TASKS	TRAX	STX A *	STX B	STX C	STX D	STX E	STX F	STX G	STX H
Process Captured Material			X			X	X		X
Camouflage Vehicles and Equipment			X	X	X	X	X	X	X
Occupy Covered and Concealed Positions			X	X				X	X
Process Captured Enemy Documents									
React to Indirect Fire	X	X	X	X	X	X	X		X
Prepare for a Friendly Nuclear Strike									
Remove Hasty Protective Minefield									
Perform Rupture Force Activities									
Perform Reserve Force Activities									
Perform Rear Guard Activities									
Perform Breaching Force Activities									
Perform Assault Force Activities									
Perform Support Force Activities									
Perform Landing Zone Activities					X				
Perform Actions at a Defile									
Perform Aerial Resupply Activities									
Take Countersurveillance Measures		X	X			X		X	X
Perform Obstacle Construction									
Perform Reconnaissance within a Battle Position						X			X
Perform Movement Security Using Smoke Systems	X		X	X	X	X	X		X
Perform Stand-TO Activities	X								

Table E-3

MOVEMENT TO CONTACT/HASTY ATTACK

PLATOON DRILLS	TRAX	STX A	STX B	STX C	STX D	STX E *	STX F *	STX G	STX H
Column Formation	X	X							
Coil Formation		X							
Herringbone Formation		X							
Wedge Formation	X					X	X		X
Line Formation	X						X		X
Action Left (Right, Front, Rear)	X					X	X		
Move Left (Right, Rear)	X					X	X		
Conduct Bounding Overwatch	X					X	X		X
React to Air Attack	X	X	X	X	X	X	X		X
PLATOON TASK									
Perform a Nuclear Contaminated Area Crossing			X					X	X
Perform a Chemically Contaminated Area Crossing			X					X	X
Perform Chemical Agent Early Warning Using Chemical Agent Alarm			X					X	X
Establish Security for an EDS/PDS									
Perform Assembly Area Activities									
Establish Perimeter Security								X	
Defend an Assembly Area									
Perform Refueling Activities		X	X					X	X
Perform Rearming Activities		X	X					X	X
Perform Leader's Reconnaissance	X		X	X	X			X	X

PLATOON TASKS	TRAX	STX A	STX B	STX C	STX D	STX E *	STX F *	STX G	STX H
Provide Command and Control of a Unit	X								
Perform Tactical Planning	X	X		/		X		X	X
Operate an Observation Post			X					X	
Establish an Observation Post			X					X	
Assist Rearward Passage of Lines				X	X				
Provide Reaction Force to Insurgent Attack									
Perform a Screen of a Stationary Force									
Perform a Screen of a Moving Force									
Execute a Hasty Attack	X						X		
Reconnoiter an Obstacle	X			X	X	X	X		X
Breach a Minefield	X								
Perform Surveillance (Visual and Electronic) Activities	X		X	X	X	X	X	X	X
Move in a Built Up Area									
Establish a Platoon Hot Loop			X	X				X	
Recover a Tank by Similar Vehicle	X		X	X	X	X	X		X
Break Contact from the Enemy			X	X	X				
Perform Platoon Fire Distribution and Control	X		X	X	X		X		X
Engage Targets Using the Two Tank Method									
Emplace a Hasty Protective Minefield			X						
Occupy a Battle Position in a Built Up Area									
Emplace a Phony Minefield			X						

Table E-3

MOVEMENT TO CONTACT/HASTY ATTACK

PLATOON TASKS	TRAX	STX A	STX B	STX C	STX D	STX E *	STX F *	STX G	STX H
Execute Actions on Contact	X	X			X	X	X		X
Perform Contact Point Activities	X		X	X	X				
Execute Actions at a Halt		X							
Perform a Tactical Roadmarch		X							
Execute Traveling Overwatch	X					X			X
Execute Traveling									
Defend Against an Air Attack (Battle Drill)	X	X	X	X	X	X	X		X
Conduct Rehearsals								X	X
Perform Consolidation and Reorganization Activities			X			X	X		X
Improve Battle Positions			X						
Prepare Subsequent Battle Positions			X						
Occupy Battle Positions			X						
Displace to Subsequent Battle Position			X						
Maintain Contact with the Enemy			X				X		X
Bypass an Enemy Position	X					X	X		X
Assault an Enemy Position	X						X		X
Breach an Obstacle	X					X			X
Perform Attack Using Fire and Movement	X								
Establish All-Round Movement Security		X							
Take Actions to Process POWs			X			X	X		X

PLATOON TASKS	TRAX	STX A	STX B	STX C	STX D	STX E*	STX F*	STX G	STX H
Process Captured Material			X			X	X		X
Camouflage Vehicles and Equipment			X	X	X	X	X	X	X
Occupy Covered and Concealed Positions			X	X				X	X
Process Captured Enemy Documents									
React to Indirect Fire	X	X	X	X	X	X	X		X
Prepare for a Friendly Nuclear Strike									
Remove Hasty Protective Minefield									
Perform Rupture Force Activities									
Perform Reserve Force Activities									
Perform Rear Guard Activities									
Perform Breaching Force Activities									
Perform Assault Force Activities									
Perform Support Force Activities									
Perform Landing Zone Activities					X				
Perform Actions at a Defile	X								
Perform Aerial Resupply Activities									
Take Countersurveillance Measures		X	X			X		X	X
Perform Obstacle Construction									
Perform Reconnaissance within a Battle Position						X			X
Perform Movement Security Using Smoke Systems	X		X	X	X	X	X		X
Perform Stand-TO Activities									

Table E-4

OCCUPY BATTLE POSITION/HASTY DEFENSE

PLATOON DRILLS	TRAX	STX A	STX B*	STX C	STX D	STX E	STX F	STX G	STX H
Column Formation	X	X							
Coil Formation	X	X							
Herringbone Formation	X	X							
Wedge Formation	X					X	X		X
Line Formation							X		X
Action Left (Right, Front, Rear)						X	X		
Move Left (Right, Rear)						X	X		
Conduct Bounding Overwatch						X	X		X
React to Air Attack	X	X	X	X	X	X	X		X
PLATOON TASK									
Perform a Nuclear Contaminated Area Crossing			X					X	X
Perform a Chemically Contaminated Area Crossing	X		X					X	X
Perform Chemical Agent Early Warning Using Chemical Agent Alarm			X					X	X
Establish Security for an EDS/PDS									
Perform Assembly Area Activities									
Establish Perimeter Security	X							X	
Defend an Assembly Area									
Perform Refueling Activities		X	X					X	X
Perform Rearming Activities		X	X					X	X
Perform Leader's Reconnaissance	X		X	X	X			X	X

PLATOON TASK	TRAX	STX A	STX B*	STX C	STX D	STX E	STX F	STX G	STX H
Provide Command and Control of a Unit	X								
Perform Tactical Planning	X	X				X		X	X
Operate an Observation Post			X					X	
Establish an Observation Post	X		X					X	
Assist Rearward Passage of Lines				X	X				
Provide Reaction Force to Insurgent Attack									
Perform a Screen of a Stationary Force									
Perform a Screen of a Moving Force									
Execute a Hasty Attack							X		
Reconnoiter an Obstacle				X	X	X	X		X
Breach a Minefield									
Perform Surveillance (Visual and Electronic) Activities	X		X	X	X	X	X	X	X
Move in a Built Up Area									
Establish a Platoon Hot Loop			X	X				X	
Recover a Tank by Similar Vehicle			X	X	X	X	X		X
Break Contact from the Enemy	X		X	X	X				
Perform Platoon Fire Distribution and Control	X		X	X	X		X		X
Engage Targets Using the Two Tank Method									
Emplace a Hasty Protective Minefield			X						
Occupy a Battle Position in a Built Up Area									
Emplace a Phony Minefield			X						

Table E-4

OCCUPY BATTLE POSITION/HASTY DEFENSE

PLATOON TASKS	TRAX	STX A	STX B *	STX C	STX D	STX E	STX F	STX G	STX H
Execute Actions on Contact		X			X	X	X		X
Perform Contact Point Activities			X	X	X				
Execute Actions at a Halt	X	X							
Perform a Tactical Roadmarch		X							
Execute Traveling Overwatch						X			X
Execute Traveling									
Defend Against an Air Attack (Battle Drill)	X	X	X	X	X	X	X		X
Conduct Rehearsals								X	X
Perform Consolidation and Reorganization Activities			X			X	X		X
Improve Battle Positions			X						
Prepare Subsequent Battle Positions			X						
Occupy Battle Positions	X		X						
Displace to Subsequent Battle Position	X		X						
Maintain Contact with the Enemy	X		X				X		X
Bypass an Enemy Position						X	X		X
Assault an Enemy Position							X		X
Breach an Obstacle						X			X
Perform Attack Using Fire and Movement									
Establish All-Round Movement Security		X							
Take Actions to Process POWs			X			X	X		X

PLATOON TASKS	TRAX	STX A	STX B *	STX C	STX D	STX E	STX F	STX G	STX H
Process Captured Material			X			X	X		X
Camouflage Vehicles and Equipment			X	X	X	X	X	X	X
Occupy Covered and Concealed Positions	X		X	X				X	X
Process Captured Enemy Documents									
React to Indirect Fire	X	X	X	X	X	X	X		X
Prepare for a Friendly Nuclear Strike									
Remove Hasty Protective Minefield									
Perform Rupture Force Activities									
Perform Reserve Force Activities									
Perform Rear Guard Activities									
Perform Breaching Force Activities									
Perform Assault Force Activities									
Perform Support Force Activities									
Perform Landing Zone Activities					X				
Perform Actions at a Defile									
Perform Aerial Resupply Activities									
Take Countersurveillance Measures	X	X	X			X		X	X
Perform Obstacle Construction									
Perform Reconnaissance within a Battle Position	X					X			X
Perform Movement Security Using Smoke Systems	X		X	X	X	X	X		X
Perform Stand-TO Activities									

APPENDIX F
TRAX I FACILITIES, EQUIPMENT, AND MATERIALS

APPENDIX F
TRAX I FACILITIES, EQUIPMENT, AND MATERIALS

Classroom Facilities

One classroom with a minimum size of 12 ft x 18 ft is required to set up the terrain board for play. Chairs are needed for the Instructor/Controller and Fire Controller, who sit at the south edge of the board. Additional space in the same room or an adjoining room with a table and six to eight chairs is convenient for initial instructions, some mission preparation activities, discussions following after-action review of game events, and storage of materials.

Terrain Board

Assembly and Support. Ten 2 ft x 4 ft sections of the Dunn-Kempf board assemble into an 8 ft x 10 ft terrain board. The board represents a 4.8 km x 6.0 km area of Germany north of Hunfeld on map section L5324, series M745 (scale 1:50,000). The horizontal scale of the terrain board is 1 inch to 50 meters, and the vertical scale is 1 inch to 25 meters. The board sections can be supported by three 4 ft x 8 ft sheets of one-half inch thick plywood resting on four 3 ft x 5 ft tables, four Dunn-Kempf and Blockbuster kit boxes, or other sturdy boxes or crates of a similar size. Several garbage cans (27 inches high) may be used to support the plywood sheets if tables or boxes are not available. A 2 foot wide clear strip is left below the south edge of the board where the controller can place the game materials in use.

Buildings. Buildings from the Dunn-Kempf kit can be fixed to the board with weather-proofing putty and removed without damage to the board. Buildings should be placed to represent the towns and villages of Leibolz, Eiterfeld, Ufhausen, Fursteneck, Wolf, Oberweisenborn, and Unterweisenborn. The buildings should be distributed and configured proportionately to the number and arrangement of buildings indicated on the map. Individual buildings that often affect decisions or events in the scenarios should be placed at the following locations: NB600225 (Sch), NB578223, NB579232, NB579233, NB579234, NB578233, NB5723234, NB575244 (Sch), NB567243 (Bad), NB5682446 (Whs), NB573278, NB574282, NB572254 (Sch), NB584262 (H), NB583263, NB584265, NB583266, NB585267, NB584267, NB582267, NB585272, NB573266, NB586277. The abbreviation used to identify particular buildings on the map are given in parenthesis after the map coordinates above.

Terrain Features. Features are added to the terrain board symbolically. Masking tape is placed on the board at the desired location with the area and configuration occupied by the feature. In representing obstacles, such as craters, ditches, minefields, or abatis, graphic symbols used for operational map overlays are drawn on the tape. If players are not intended to have prior knowledge of the obstacle, they are not marked on the board, but disclosed through detection cards. Cultural features, (forest trails, quarries, towers, etc.) that appear on the map, but not on the board, can be marked by masking tape with the corresponding map symbol. These features are marked when significant for a particular exercise scenario. Results of engineer activity may also be marked during the course of the game when incorporated in the scenario. Plastic markers representing prepared positions for tanks are supplied in the Blockbuster kit and may be fixed to the board with tape or putty.

Vehicles and Units

The 1:285 scale (Micro-armor) miniature models supplied with the Dunn-Kempf and Blockbuster kits are used to represent vehicles and infantry teams. The Dunn-Kempf vehicle miniatures correspond to equipment being phased out in Division '86 organizations. However, they will remain useful in simulating U.S. reserve or transitional organizations and OPFOR reserve or Warsaw Pact satellite units. Models of older equipment (e.g., M113A1 for ITVs) can be used to represent newer equipment when the proper models are not available. Training should not be seriously affected if the appropriate movement and weapon capabilities are executed in play. The Blockbuster kit provides models of some the equipment available in Division '86 organizations, and additional models are available as training aids. When units rather than individual vehicles are specified in an exercise scenario, unit markers can be used to show the general position occupied by the unit on the board. The unit markers are made by fixing unit symbols from the Blockbuster kit to 2 in x 3 in rectangles of posterboard with glue or tape. Models required for the exercises in Appendix D are listed as part of each exercise plan. Gummed labels should be placed on the underside of the models, showing U.S. vehicle identification numbers, and OPFOR unit numbers.

Event Markers

Gun Direction. These markers are made from 2 and 3/4 inch prong fasteners, doubled over at the middle, with one prong bent up a 90° angle and doubled back to provide a handle on top. Figure F-1 illustrates a fastener before and after bending to make a gun direction marker.

Field of View. These markers are made by cutting off the flat bottom of a 6 oz styrofoam coffee cup and then cutting the bottom into four pie-shaped sections with the desired angle. The TC's field of view used with the basic rules has a 90° angle, as shown in Figure F-2.

Munition and Obscuration Markers. Three bags of medical cotton balls are needed for markers used to show effects of munition and other obscurants. The balls in one bag are left white, and are used to represent smoke. The balls of a second bag are dyed black with indelible ink or shoe dye and used to represent artillery explosions. About one-third of the balls in the third bag are dyed brown to represent dust clouds. Another third are dyed red and used to show firing signatures, target explosions, or fires in buildings, woods, or fields. A few red balls are stretched into an elongated shape, 2-3 inches long, to represent antitank missile signatures (TOW, Dragon, or Sagger). Two or three red balls are pulled apart, with the pieces rolled up lengthwise in a matchstick shape to represent antitank rockets (LAW or RPG). Red pieces of string are used to mark machinegun signatures (1 inch for light and 2 inches for heavy machineguns). The remaining balls are dyed various other colors, when needed to represent signal smoke, the origin of some chemical weapon agents, and camouflage netting or vegetation providing concealment but not cover.

Target Effects. A supply o' effect markers can be made up from one inch squares cut from heavy blue and red card stock. A large asterisk (*) should be marked on one side to symbolize a hit. A S, K, KF, or KM is placed on the reverse side to indicate the effect resulting from a hit. Blue

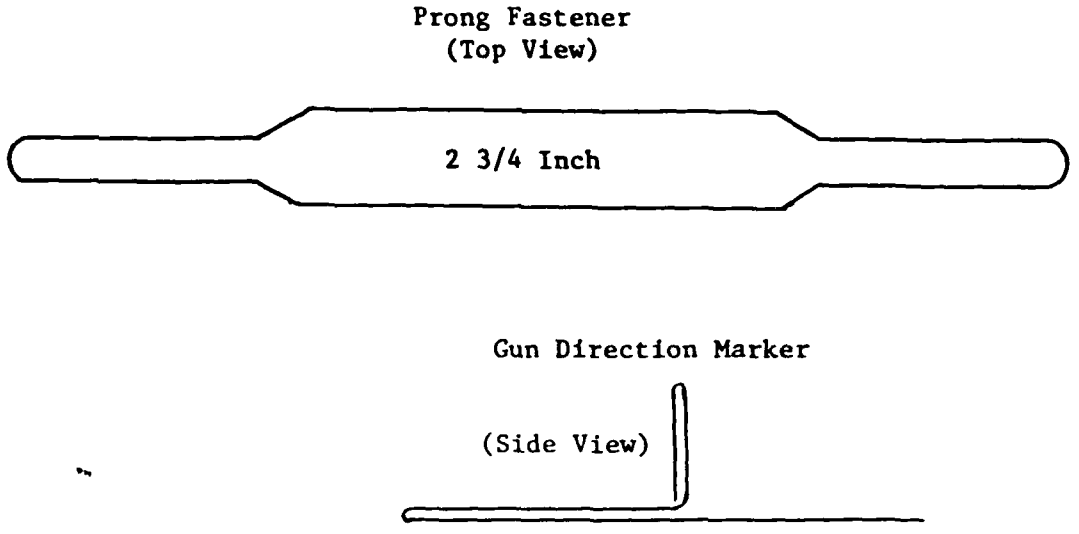

Figure F-1. Prong fastener made into a Gun Direction (GD) marker.

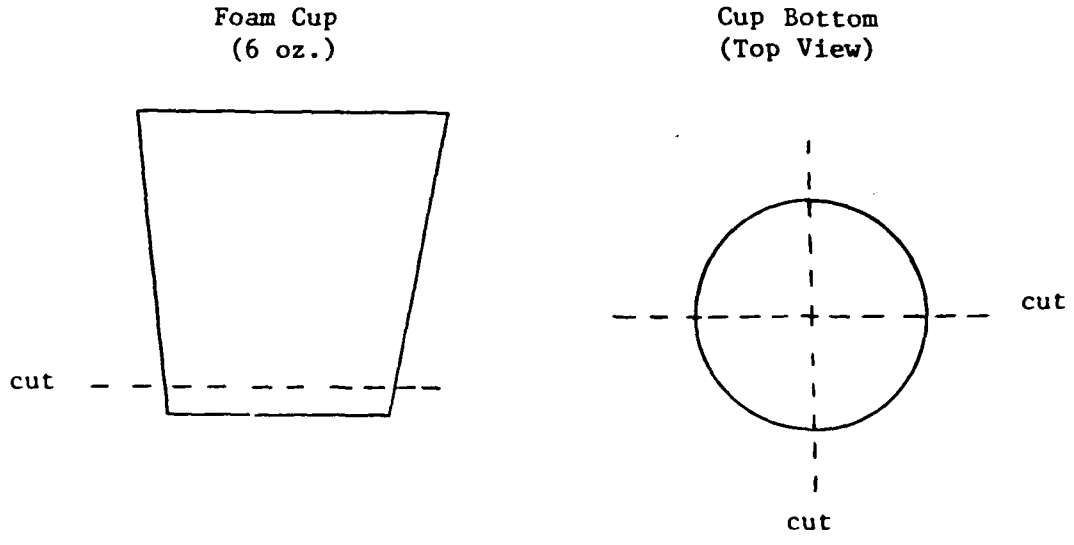

Figure F-2. Foam cup bottom made into a Field of View (FOV) marker.

markers are used for U.S. hits on the OPFOR and red markers for OPFOR hits on U.S. vehicles.

Detection Cards

Detection cards are made from salmon or orange colored card stock cut in 3 in x 3 in squares. Target detection or identification information is typed on the back of the card. Lists of detection cards with information to be placed on the cards is given with each exercise plan in Appendix D. In preparing detection cards for other scenarios, it is important to keep in mind that the cards substitute for, and control in the game context, the information derived from visual observation of the battlefield or other events known to a particular TC, such as a casualty in the crew or a mechanical breakdown.

Action Cards

General. The action cards can be made from posterboard, heavy colored cardstock, or heavy cardboard (e.g., file dividers). Blue or green cards should be used with the U.S. forces and red or tan with the OPFOR. Cards can be made to indicate action on one or both sides, depending on player preference. A set of cards is made for each vehicle in the U.S. Force, but sets are required only for platoons, sections, and command vehicles on the OPFOR side. Vehicle numbers are marked on a corner of the U.S. cards on both sides to help the players from mixing up their cards, while unit numbers are marked on OPFOR cards.

One Action per Card. Cards made to show one action are cut in 3 in x 3 in squares. A large (one inch) letter denoting the action type is stenciled on one side of the card. Lists of movement factors or firing condition modifiers and weapon limitations are glued to the backs of the cards. Cards required for each type of vehicle are shown in Table F-1. Information placed on the back of movement cards is given in Tables F-2 and F-3. Factors affecting firing are given in Tables F-4, F-5, and F-6.

Two Actions per Card. In the second method, letters for the actions are placed on the front and back of a 3 in x 6 in card. When an action involves movement, a movement scale showing the maximum distances is marked on a long edge of the card with terrain labels at the corresponding distance. When the action involves firing, conditions affecting results of engagements are listed together with any special characteristics of the weapon system, e.g., maximum range and number of rounds for a missile carrier. It is convenient to pair the actions F and FM, M and D, P and U, G and L, and GL and R in making the cards. The advantage of the second method is that the number of cards is minimized and they are easier to use in marking off movement distances. The disadvantage is that the desired card is harder to find until players learn how the actions are paired. Also, they are twice as big, tending to get in the way of another player's vehicle and card more often during play. Cards with two actions are usually preferred when the vehicle has more than five possible actions.

Other Equipment

Six 12 foot retractable metal tape measures used in determining range.

Two 10 foot lengths of heavy twine used to verify LOS.

Six 18 inch wooden rulers used to move vehicles out of reach near the center of the board.

One set of plastic cards numbered 1-100 with stand (Take a Number Kit) used to display elapsed game time. If not available through supply sources, cards with stenciled numbers can be used with flip chart stand made from a ring binder turned inside out. The front and back covers of the binder are nailed to a 4 in wide beveled piece of wood between the covers, with the outer edges of the covers acting as feet for the stand.

Clear Dunn-Kempf artillery placement and bomb delivery sheets that are used in placing indirect fire markers.

Wire stands from Dunn-Kempf kit are used to place helicopters in an elevated position over the terrain. Weatherproofing putty should be applied to the base of the stand so that it can be firmly fixed to the board. Putty allows the stand to be easily removed from the board and fixed at a new location when the helicopter moves.

Two cassette tape recorders, preferably with built-in crystal microphones, for recording orders.

Other Materials

One set of scenario orders for each platoon to be trained.

Three copies of the complete Training and Evaluation Schedules for each scenario used by the controllers.

Two sets of Dunn-Kempf (Revised) Combat Results Tables.

Three copies of a CEOI book, either an actual book for a local unit, or a facsimile available for training purposes.

Dunn-Kempf Random Number Tables used in determining engagement results.

Plastic-covered Dunn-Kempf turn record and artillery request record sheets used by the controller.

Six copies of TRAX I rules.

Two copies of the Platoon APT, with platoon and company SOPs, for reference in the after-action review.

Table F-1

Action Cards Required for Vehicles

US FORCE CARDS[1]	M1 M60A3	M60A1/ M48A5	M113	M2/ M3	M113(TOW) M901(ITV)	M106/ M125	M728 (CEV)	AVLB/ Wheeled	GND TOW/ DRAGON
F	X	X	X	X	X	X	X		
M	X	X	X	X	X	X	X	X	X
FM	X	X	X	X	X	X			
D	X	X	X	X	X	X	X	X	X
P			X	X				X	
U			X	X				X	
L				X	X				X
G				X	X				X
G/L				X	X				
R	X	X		X	X				X

OPFOR CARDS[1]	T72/ 764	T62/ T55	PT-76 ZSU 23-4	BMP/ BMD	BRDM/ BRDM-2 (SCOUT)	BRDM/ BRDM-2 (AT)	ASU-85 SP ARTY	Wheeled	MAN-PACK
F	X	X	X	X	X		X		
M	X	X	X	X	X	X	X	X	X
FM	X	X	X	X	X				
D	X	X	X	X	X	X	X	X	X
P				X	X			X	
U				X	X			X	
L				X		X			X
G				X		X			X
R				X		X			X

[1] Types of cards are indicated below:
F-Fire
M-Move
FM-Fire on Move (1/2 inch subtracted from Move distance)
D-Dash (one inch added to Move distance)
P-Pick up troops
U-Unload troops
L-Launch missile
G-Guide to target
GL-Guide to target and Launch second missile
R-Reload

Table F-2

Movement Distances[1] for
US Force Action Cards[2]

Move (M) Cards		Fire on Move (FM) Cards		Dash (D) Cards	
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	M1	TERRAIN	M1	TERRAIN	M1
Paved Road	4.5	Paved Road 4.0	4.0	Paved Road	5.5
Dirt Road	3.5	Dirt Road	3.0	Dirt Road	4.5
Cross Country	3.0	Cross Country	2.5	Cross Country	4.0
Woods/Uphill	2.0	Woods/Uphill	1.5	Woods/Uphill	3.0
Marsh/Stream	1.5	Marsh/Stream	1.0	Marsh/Stream	2.5
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	M60A3 M88	TERRAIN	M60A3 M88	TERRAIN	M60A3 M88
Paved Road	3.5	Paved Road	3.0	Paved Road	4.5
Dirt Road	2.5	Dirt Road	2.0	Dirt Road	3.5
Cross Country	2.0	Cross Country	1.5	Cross Country	3.0
Woods/Uphill	1.0	Woods/Uphill	0.5	Woods/Uphill	2.0
Marsh/Stream	1.0	Marsh/Stream	0.5	Marsh/Stream	2.0
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	M60A1 M48A5	TERRAIN	M60A1 M48A5	TERRAIN	M60A1 M48A5
Paved Road	3.5	Paved Road	3.0	Paved Road	4.5
Dirt Road	2.5	Dirt Road	2.0	Dirt Road	3.5
Cross Country	2.0	Cross Country	1.5	Cross Country	3.0
Woods/Uphill	1.0	Woods/Uphill	0.5	Woods/Uphill	2.0
Marsh/Stream	1.0	Marsh/Stream	0.5	Marsh/Stream	2.0
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	M2/M3	TERRAIN	M2/M3	TERRAIN	M2/M3
Paved Road	4.5	Paved Road	4.0	Paved Road	5.5
Dirt Road	3.5	Dirt Road	3.0	Dirt Road	4.5
Cross Country	3.0	Cross Country	2.5	Cross Country	4.0
Woods/Uphill	2.0	Woods/Uphill	1.5	Woods/Uphill	3.0
Marsh/Stream	1.5	Marsh/Stream	1.0	Marsh/Stream	2.5

Table F-2 (cont)

Move (M) Cards		Fire on Move (FM) Cards		Dash (D) Cards	
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	M113 M125/M106	TERRAIN	M113 M125/M106	TERRAIN	M113 M125/M106
Paved Road	4.0	Paved Road	3.5	Paved Road	5.0
Dirt Road	3.0	Dirt Road	2.5	Dirt Road	4.0
Cross Country	2.5	Cross Country	2.0	Cross Country	3.5
Woods/Uphill	1.5	Woods/Uphill	1.0	Woods/Uphill	2.5
Marsh/Stream	1.5	Marsh/Stream	1.0	Marsh/Stream	2.5
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	M901(ITV)	TERRAIN	M901(ITV)	TERRAIN	M901(ITV)
Paved Road	4.0	Paved Road	3.5	Paved Road	5.0
Dirt Road	3.0	Dirt Road	2.5	Dirt Road	4.0
Cross Country	2.5	Cross Country	2.0	Cross Country	3.5
Woods/Uphill	1.5	Woods/Uphill	1.0	Woods/Uphill	2.5
Marsh/Stream	1.5	Marsh/Stream	1.0	Marsh/Stream	2.5
Twice per turn		No FM for Wheeled Vehicles		Twice per turn	
TERRAIN	WHEELED			TERRAIN	WHEELED
Paved Road	4.0			Paved Road	5.0
Dirt Road	3.0			Dirt Road	4.0
Cross Country	1.5			Cross Country	2.5
Woods/Uphill	1.0			Woods/Uphill	2.0
Marsh/Stream	0.5			Marsh/Stream	1.5
Twice per turn		No FM for AVLB		Twice per turn	
TERRAIN	AVLB			TERRAIN	AVLB
Paved Road	3.0			Paved Road	3.0
Dirt Road	2.5			Dirt Road	3.5
Cross Country	1.5			Cross Country	3.0
Woods/Uphill	1.0			Woods/Uphill	2.0
Marsh/Stream	1.0			Marsh/Stream	2.0

[1] Distances are given in inches. Each inch per movement step equals 12 KPH or 7.4 MPH.

[2] Pages may be duplicated and cut apart to mount on cards.

Table F-3

Movement Distances for
OPFOR Action Cards[1]

Move (M)		Fire on Move (FM)		Dash (D)	
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	T72/T64	TERRAIN	T72/T64	TERRAIN	T72/T64
Paved Road	4.0	Paved Road	3.5	Paved Road	5.0
Dirt Road	3.0	Dirt Road	2.5	Dirt Road	4.0
Cross Country	2.5	Cross Country	2.0	Cross Country	3.5
Woods/Uphill	1.5	Woods/Uphill	1.0	Woods/Uphill	2.5
Marsh/Stream	1.5	Marsh/Stream	1.0	Marsh/Stream	2.5
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	T62/T55	TERRAIN	T62/T55	TERRAIN	T62/T55
Paved Road	3.5	Paved Road	3.0	Paved Road	4.5
Dirt Road	2.5	Dirt Road	2.0	Dirt Road	3.5
Cross Country	2.0	Cross Country	1.5	Cross Country	3.0
Woods/Uphill	1.0	Woods/Uphill	0.5	Woods/Uphill	2.0
Marsh/Stream	1.0	Marsh/Stream	0.5	Marsh/Stream	2.0
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	PT 76 SP ARTY	TERRAIN	PT 76 SP ARTY	TERRAIN	PT 76 SP ARTY
Paved Road	3.5	Paved Road	3.0	Paved Road	4.5
Dirt Road	2.5	Dirt Road	2.0	Dirt Road	3.5
Cross Country	2.0	Cross Country	1.5	Cross Country	3.0
Woods/Uphill	1.0	Woods/Uphill	0.5	Woods/Uphill	2.0
Marsh/Stream	1.0	Marsh/Stream	0.5	Marsh/Stream	2.0
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	BMP/BMD	TERRAIN	BMP/BMD	TERRAIN	BMP/BMD
Paved Road	4.5	Paved Road	4.0	Paved Road	5.5
Dirt Road	3.5	Dirt Road	3.0	Dirt Road	4.5
Cross Country	3.0	Cross Country	2.5	Cross Country	4.0
Woods/Uphill	2.0	Woods/Uphill	1.5	Woods/Uphill	3.0
Marsh/Stream	1.5	Marsh/Stream	1.0	Marsh/Stream	2.5

Table F-3 (cont)

Move (M)		Fire on Move (FM)		Dash (D)	
Twice per turn		Twice per turn		Twice per turn	
TERRAIN	BRDM/ BRDM-2	TERRAIN	BRDM/ BRDM-2	TERRAIN	BRDM/ BRDM-2
Paved Road	5.0	Paved Road	4.5	Paved Road	6.0
Dirt Road	4.0	Dirt Road	3.5	Dirt Road	5.0
Cross Country	3.0	Cross Country	2.5	Cross Country	4.0
Woods/Uphill	1.5	Woods/Uphill	1.0	Woods/Uphill	2.5
Marsh/Stream		Marsh/Stream		Marsh/Stream	
Twice per turn				Twice per turn	
TERRAIN	ASU 85 ZSU 23-4	No FM for ASU 85 or ZSU 23-4		TERRAIN	ASU 85 ZSU 23-4
Paved Road	2.5			Paved Road	3.5
Dirt Road	2.0			Dirt Road	3.0
Cross Country	1.5			Cross Country	2.5
Woods/Uphill	1.0			Woods/Uphill	2.0
Marsh/Stream	1.0			Marsh/Stream	2.0
Twice per turn		No FM for Wheeled Vehicles		Twice per turn	
TERRAIN	Wheeled			TERRAIN	Wheeled
Paved Road	4.0			Paved Road	5.0
Dirt Road	3.0			Dirt Road	4.0
Cross Country	1.5			Cross Country	2.5
Woods/Uphill	1.0			Woods/Uphill	2.0
Marsh/Stream	0.5			Marsh/Stream	1.5

[1] Distances are given in inches. Each inch per movement step equals 12 KPH or 7.4 MPH.

[2] Pages may be duplicated and cut apart to mount on cards.

Table F-4

Firing Condition Modifiers For
US and OPFOR Action Cards

Fire (F) Cards — **Reload (R) Cards**

US Tank Main Guns

Hit Modifiers		Kill Modifiers	
Target	R Cng	Target	Pk Cng
Flank	-1	T64/72	-.10
Moving	+1	Flank	+.10
Turret		Rear	+.10
Tank	+2	Turret	No Km
APC	+3	Chopper	H=K
Weapon	R Cng	Ammo	Pk Cng
2nd/3rd	-1	APDS	.00
Heat	+1	AFSPDS	+.10
Moving		Heat	+.10
Stab In	+1	Heat at	-.10
Stab Out	+2	T64/72	

US Tank Machineguns

Hit/Kill Modifiers	Change
Target Activity	
Standing	-1 R
Moving	0 R
Prone	+1 R
Target Position	
Open Field	-1 R
Woods Edge	0 R
Dense Woods	+1 R
In Buildings	+1 R
Prepared Position	+1 R
Firing 2nd/3rd Burst	-1 R
Firing with Surprise	-1 R

Fire (F) Cards — **Pickup (P) Cards**

OPFOR Tank Main Guns

Hit Modifiers		Kill Modifiers	
Target	R Cng	Target	Pk Cng
Flank	-1	M1	-.10
Moving	+1	Flank	+.10
Turret		Rear	+.10
Tank	+2	Turret	No Km
APC	+3	Chopper	H=K
Weapon	R Cng	Ammo	Pk Cng
2nd/3rd	-1	APDS	.00
Heat	+1	AFSPDS	+.10
Moving		Heat	+.10
Stab In	+1	Heat at	-.10
Stab Out	+2	M1	

IFV/APC Machineguns

Hit/Kill Modifiers	Change
Target Activity	
Standing	-1 R
Moving	0 R
Prone	+1 R
Target Position	
Open Field	-1 R
Woods Edge	0 R
Dense Woods	+1 R
In Buildings	+1 R
Prepared Position	+1 R
Firing 2nd/3rd Burst	-1 R
Firing with Surprise	-1 R

Table F-5

Missile Limitations and Modifiers for US Action Cards[1]

Launch (L) Cards

Dragon

1000 m Range
65 minimum
1 ready
2 rounds/team
6 total supply
Stationary until impact

Guide (G) Cards

Dragon

Hit Modifiers		Kill Modifiers	
Target	R Cng	Target	Pk Cng
Flank	-1	T64/72	-.10
Moving	+1	Flank	+.10
Tank Turret	+2	Rear	+.10
APC Turret	+3	Turret	No Km

Reload (R) Cards

Dragon

4 turn setup per round (1 ready)

Stationary

Launch (L) Cards

Ground TOW

3750 m Range
65 minimum
1 ready
2 rounds/team
8 total supply
Stationary until impact

Guide (G) Cards

Ground TOW

Hit Modifiers		Kill Modifiers	
Target	R Cng	Target	Pk Cng
Flank	-1	T64/72	-.10
Moving	+1	Flank	+.10
Tank Turret	+2	Rear	+.10
APC Turret	+3	Turret	No Km

Reload (R) Cards

Ground TOW

2 turn setup per round (1 ready)

Stationary

Launch (L) Cards

M113 TOW

3750 m Range
65 minimum
1 ready
12 total supply
Stationary until impact

Guide (G) Cards

M113 TOW

Hit Modifiers		Kill Modifiers	
Target	R Cng	Target	Pk Cng
Flank	-1	T64/72	-.10
Moving	+1	Flank	+.10
Tank Turret	+2	Rear	+.10
APC Turret	+3	Turret	No Km

Reload (R) Cards

M113 TOW

2 turn reload per round (1 ready)

Stationary

Launch (L) Cards

M2 TOW

3750 m Range
65 minimum
2 ready
7 total supply
Stationary until impact

Guide (G) Cards

M2 TOW

Hit Modifiers		Kill Modifiers	
Target	R Cng	Target	Pk Cng
Flank	-1	T64/72	-.10
Moving	+1	Flank	+.10
Tank Turret	+2	Rear	+.10
APC Turret	+3	Turret	No Km

Reload (R) Cards

M2 TOW

2 turn reload per round (2 ready)

Stationary

Table F-5 (cont)

Launch (L) Cards	Guide (G) Cards	Reload (R) Cards
M3 TOW	**M3 TOW**	**M3 TOW**
3750 M Range 65 minimum 2 ready 12 total Stationary until impact	**Hit Modifiers** Target R Cng Flank -1 Moving +1 Tank Turret +2 APC Turret +3 **Kill Modifiers** Target Pk Cng T64/72 -.10 Flank +.10 Rear +.10 Turret No Km	2 turn reload per round (2 ready) Stationary
M901(ITV) TOW	**M901(ITV) TOW**	**M901(ITV) TOW**
3750 m Range 65 minimum 2 ready 14 total Stationary	**Hit Modifiers** Target R Cng Flank -1 Moving +1 Tank Turret +2 APC Turret +3 **Kill Modifiers** Target Pk Cng T64/72 -.10 Flank +.10 Rear +.10 Turret No Km	2 turn reload per round (2 ready) Stationary

Guide and Launch (GL) Cards

M2 TOW	M3 TOW	M901(ITV) TOW
2 rounds per turn at targets 1500 m or less Stationary	2 rounds per turn at targets 1500 m or less Stationary	2 rounds per turn at targets 1500 m or less Stationary

[1] Pages may be duplicated and cut apart to mount on cards.

Table F-6

Missile Limitations and Modifiers for
OPFOR Action Cards

Launch (L) Cards	Guide (G) Cards				Reload (R) Cards
Manpack AT-3 (Sag)	**Hit Modifiers**		**Kill Modifiers**		**Manpack AT-3 (Sag)**
3000 m Range	Target	R Cng	Target	Pk Cng	10 turn setup
500 minimum	Flank	-1	M1	-.10	per round
2 rounds	Moving	+1	Flank	+.10	(1 ready)
	Tank Turret	+2	Rear	+.10	
	APC Turret	+3	Turret	No Km	
BMP/BMD AT-3C(Sag C)	**Hit Modifiers**		**Kill Modifiers**		**BMP/BMD AT-3C(Sag C)**
3000 m Range	Target	R Cng	Target	Pk Cng	2 turn reload
500 minimum	Flank	-1	M1	-.10	per round
2 rounds	Moving	+1	Flank	+.10	(1 ready)
	Tank Turret	+2	Rear	+.10	
	APC Turret	+3	Turret	No Km	
BRDM/ **BRDM-2 AT-3C(Sag C)**	**Hit Modifiers**		**Kill Modifiers**		BRDM/ **BRDM-2 AT-3C(Sag C)**
3000 m Range	Target	R Cng	Target	Pk Cng	2 turn reload
500 minimum	Flank	-1	M1	-.10	per round
6 ready	Moving	+1	Flank	+.10	(6 ready)
14 total	Tank Turret	+2	Rear	+.10	
	APC Turret	+3	Turret	No Km	
Manpack AT-4(Spigot)	**Hit Modifiers**		**Kill Modifiers**		**Manpack AT-4(Spigot)**
2000 m Range	Target	R Cng	Target	Pk Cng	6 turn setup
100 minimum	Flank	-1	M1	-.10	per round
2 rounds	Moving	+1	Flank	+.10	(1 ready)
	Tank Turret	+2	Rear	+.10	
	APC Turret	+3	Turret	No Km	
BMP/BMD AT-4(Spigot)	**Hit Modifiers**		**Kill Modifiers**		**BMP/BMD AT-4(Spigot)**
2000 m Range	Target	R Cng	Target	Pk Cng	2 turn reload
100 minimum	Flank	-1	M1	-.10	per round
1 ready	Moving	+1	Flank	+.10	(1 ready)
4 total	Tank Turret	+2	Rear	+.10	
	APC Turret	+3	Turret	No Km	

Table F-6 (cont)

BRDM/ BRDM-2 AT5(Spandrel)	Hit Modifiers		Kill Modifiers		BRDM/ BRDM-2 AT-5(Spandrel)
4000 m Range	Target	R Cng	Target	Pk Cng	2 turn reload
100 minimum	Flank	-1	M1	-.10	per round
5 ready	Moving	+1	Flank	+.10	(5 ready)
15 total	Tank Turret	+2	Rear	+.10	
	APC Turret	+3	Turret	No Km	